



2017

Stormwater Management Program Plan (SWMP Plan)



*Compliance with NPDES Western
Washington Phase II Municipal
Stormwater Permit*

Permit # WAR 045531

City of Mountlake Terrace
March 2017

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Table of Contents

Introduction.....	4
The NPDES Program.....	4
Document Organization.....	4
What Is Required.....	5
Permit S5.A – SWMP Management and Administration	7
What Is Required.....	7
Ongoing Activities	7
Permit S5.C.1 - Public Education and Outreach.....	8
Goal	8
What Is Required.....	8
Program Description	8
Ongoing Activities	9
Program Evaluation (S5.C.1.c).....	9
Permit S5.C.2 - Public Involvement and Participation.....	10
Goal	10
What Is Required.....	10
Program Description	10
Low Impact Development (LID) Code Integration.....	10
Ongoing Activities	10
S5.C.2.a and S5.C.2.b Involving the Public in the SWMP.....	10
2017 Surface Water Plan and Rate Study.....	11
Permit S5.C.3 - Illicit Discharge Detection and Elimination	11
Goal	11
What Is Required.....	11
Program Description	11
S5.C.3.a Municipal Stormwater Drainage System Map	12
S5.C.3.b Water Pollution Prevention Ordinance/Municipal Code 16.21	12
S5.C.3.c Ongoing IDDE Program to detect non-stormwater discharges and Illicit Connections.....	13
S5.C.3.d Implement an ongoing program designed to address illicit discharges.....	13

2017 Stormwater Management Program (SWMP) Plan

S.5.C.3.e Training Program 13

S.5.C.3.f Program Recordkeeping..... 13

Ongoing Activities 13

Permit Element S5.C.4 - Control Runoff from New Development, Redevelopment and Construction Sites..... 14

Goal 14

What Is Required..... 14

Program Description 15

S5.C.4.a Apply Stormwater Management Standards to Development, Redevelopment, and Construction Sites..... 15

S5.C.4.b Review and Inspect Development/Redevelopment Projects 15

S5.C.4.d Notice of Intent (NOI)..... 16

S5.C.4.e Staff Training 17

S5.C.4.f Low Impact development (LID) code-related requirements..... 17

Ongoing Activities 17

Permit Element S5.C.5 -Municipal Operations and Maintenance 18

Goal 18

What Is Required..... 18

Program Description 18

S5.C.5.a Maintenance Standards..... 19

S5.C.5.b Annual Inspection of Flow Control and Runoff Treatment Facilities 19

S5.C.5.c Major Storm Event Inspections 19

S5.C.5.d Catch Basin Inspections..... 19

S5.C.5.g O&M Employee Training 19

S5.C.5.h Stormwater Pollution Prevention Plan (SWPPP) for Mountlake Terrace’s Maintenance and Operations Center 19

S5.C.5.i Record Maintenance 19

Ongoing Activities 19

Permit Element S8.A -Monitoring and Assessment 20

Goal 20

What Is Required..... 20

Ongoing Activities 20

S8.B Status and Trends Monitoring..... 21

S8.C Effectiveness Studies 21

2017 Stormwater Management Program (SWMP) Plan

S8.D Source Identification and Diagnostic Monitoring 21
Appendix A ACRONYMS AND ABBREVIATIONS 22
Appendix B TMDL 23

LIST OF TABLES

Table 1: Stormwater Management Implementation Timeline 6
Table 2: Existing Public Education and Outreach Activities 8
Table 3: Ongoing Public Education and Outreach Activities 9

Introduction

This document is the City of Mountlake Terrace’s Stormwater Management Program (SWMP) Plan. It has been created to comply with requirements found in the Western Washington Phase II Municipal Stormwater Permit (NPDES Permit), which is part of the Federal Clean Water Act. The NPDES Permit requires that the City of Mountlake Terrace produce a Stormwater Management Program Plan (SWMP Plan), and update it regularly to reflect Mountlake Terrace’s actions and planned actions in meeting permit requirements. Section S5.2.A requires that the City detail “activities for the upcoming calendar year” in order to meet the NPDES permit requirements. In many cases, requirements in the 2013-2018 NPDES permit do not take effect immediately. The City will meet new requirements as they take effect.

The SWMP Plan is intended to meet the requirements of S5.A.2 of the Permit, by informing the public of planned SWMP activities for the upcoming calendar year. The City’s Stormwater Management Program (SWMP) includes numerous actions and activities with the overall goal of reducing the discharge of pollutants from its municipal separate storm sewer system (MS4) to the maximum extent practicable (MEP). MEP is the federal statutory standard that establishes the level of pollutant reductions that jurisdictions must achieve. The Clean Water Act requires NPDES municipal permit holders to “require controls to reduce the discharge of pollutants [from their MS4s] to the maximum extent practicable, including management practices, control techniques and system design and engineering methods.” All Known, Available, And Reasonable methods of prevention, control and Treatment (AKART) is understood to mean a technology-based approach to limiting pollutants from state wastewater.

The NPDES Program

The National Pollutant Discharge Elimination System (NPDES) is a program created under the Federal Clean Water Act, with authority over the program given to the Washington State Department of Ecology (Ecology). The intent of the NPDES Program is to protect and restore water quality in waters of the State so that they can support “beneficial uses,” such as fishing and swimming. Governmental and private entities must obtain an NPDES Permit, and comply with conditions set forth in the Permit, before discharging stormwater or wastewater to waters regulated by Federal and State governments.

Document Organization

This document is organized by program component according to the following sections:

Introduction

Permit S5.A – SWMP Program Management and Administration

Permit S5.C.1 - Public Education and Outreach

Permit S5.C.2 - Public Involvement and Participation

Permit S5.C.3 - Illicit Discharge Detection and Elimination

Permit S5.C.4 - Controlling Runoff from New Development, Redevelopment, and Construction Sites

Permit S5.C.5 - Pollution Prevention and Operation and Maintenance

2017 Stormwater Management Program (SWMP) Plan

Permit S8.A – Monitoring and Assessment

The narrative for each section contains a brief summary of the goal of that section. The purpose of the NPDES Permit may be quickly understood by reading through the goal statement in each section. Following the goal statement is an overview of the phase II program requirements. Next is a description of programs the City has implemented to meet the requirements of the Phase II Permit. Finally, planned future actions and ongoing activities the City intends to accomplish are summarized in the section, “ongoing activities”.

What Is Required

Stormwater Management Program management and administrative activities are addressed in Section S5.A of the Phase II Permit which requires the City to:

- Develop and implement a SWMP according to the schedules outlined in the permit. (See Table 1, page 7).
- Prepare a written documentation of the SWMP (this document) that is to be updated at least annually for submittal with the City’s annual reports to Ecology no later than 03/31 of each year.
- Include an ongoing program for gathering, tracking, maintaining, and using the information to evaluate development and implementation of the SWMP, permit compliance, and to help the City set priorities.

This should include:

- Tracking the cost or estimated cost of developing and implementing each SWMP component.
- Tracking the number of inspections, enforcement actions, and public education activities stipulated in each SWMP component.
- When necessary, include coordination mechanisms among entities covered under municipal stormwater NPDES permits to encourage coordinated stormwater-related activities within adjoining or shared areas.
- Include coordination mechanisms among departments within each jurisdiction to eliminate barriers in complying with the terms of the Phase II Permit.

To review the permit language in comparison to what Mountlake Terrace has designed in response, view the permit at the following Washington Department of Ecology website:

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

Permit S5.A – SWMP Management and Administration

What Is Required

Stormwater Management Program management and administrative activities are addressed in Section S5.A (see Table 1) of the Phase II Permit which requires the City to:

- Develop and implement a SWMP according to the schedules outlined in the permit.
- Prepare a written documentation of the SWMP (this document) that is to be updated at least annually for submittal with the City's annual reports to Ecology no later than 03/31 of each year.
- Include an ongoing program for gathering, tracking, maintaining, and using the information to evaluate development and implementation of the SWMP, permit compliance, and to help the City set priorities.
- Track the cost or estimated cost of developing and implementing each SWMP component.
- Track the number of inspections, enforcement actions, and public education activities stipulated in each SWMP component.
- When necessary, include coordination mechanisms among entities covered under municipal stormwater NPDES permits to encourage coordinated stormwater-related activities within adjoining or shared areas.
- Include coordination mechanisms among departments within each jurisdiction to eliminate barriers in complying with the terms of the Phase II Permit.
- Continue to implement existing programs.

Ongoing Activities

In addition to the above administrative activities, the City plans to pursue the following activities in 2017:

1. Update the 2008 Six Year Stormwater Comprehensive Plan.

In 2017 the City initiated a process to develop a new Stormwater Comprehensive Plan. The plan will provide a needed update and strategic guidance for the Stormwater Utility and its programs.

It should be noted that while the Stormwater Comprehensive Plan will discuss and evaluate many of the programs included within the City's 2012 SWMP, it is not being developed for NPDES compliance. Instead it is the plan for the future of the Stormwater Utility. The plan will primarily evaluate existing programs and identify programs and services which may need to be expanded to meet community needs and regulatory demands. The plan will also include a section where stormwater issues will be identified, evaluated and ranked to develop a Stormwater Capital Improvement list. The City is providing opportunities for public involvement in the development of this plan.

2. The City of Mountlake Terrace will initiate a program to coordinate with the Snohomish County Fire Department to ensure that all fire staff are trained in the proper response to report illicit discharge.

Permit S5.C.1 - Public Education and Outreach

Goal

The goal of the education and outreach program is to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts and encourage the public to participate in stewardship activities.

What Is Required

Section S5.C.1 of the Phase II Permit requires the City to provide an education and outreach program for the area served by its MS4.

The program may target the following audiences:

- General public
- Businesses including home-based and mobile businesses
- Homeowners, landscapers, and property managers
- Engineers, contractors, developers, review staff, and land use planners

The Phase II Permit also requires the City to measure the understanding and adoption of a targeted behavior among a target audience once within the permit cycle. The resulting measurements are to be used to direct education and outreach efforts most effectively and evaluate changes in targeted behaviors.

This section of the Phase II Permit also requires the City to track and maintain records of public education and outreach activities.

Program Description

The City of Mountlake Terrace Stormwater Pollution Prevention Education Program is oriented to persons and entities with the potential to affect surface water quality within the City limits. Attendance at activities and programs is tracked and staff requests feedback from attendees as to what programs and services would be most beneficial in the future. The City monitors activity levels on the stormwater web page and receives and reviews comments regarding stormwater issues submitted through the web site’s interactive forms. Through consideration of costs vs. benefits, the City of Mountlake Terrace will continue to refine the public education and outreach program.

Table 2: Existing Public Education and Outreach Activities

Program	Target Audience	Goal and/or Behaviors Promoted
Puget Sound Spill Kit Program through ECOSS	Businesses	Builds general awareness about the impacts of illicit discharges and how to report them.
Developers Forum	Engineers, contractors, developers	Increases awareness of Low Impact Development (LID) principles and BMPs.
Natural Yard Care Program	Homeowners, residents	Builds awareness about pollutants associated with conventional yard care practices and their impact to Puget Sound.
Newsletters and Press Releases	General public	Informs of opportunities to become involved in stewardship activities, impacts of illicit discharges, and LID

2017 Stormwater Management Program (SWMP) Plan

Booths and literature at events	General public, including schoolchildren	Increase awareness of stormwater impacts on surface waters, and opportunities to become involved in stewardship activities.
Updated Web Page	General public, contractors, developers, planners, and businesses	Increase awareness of LID and proper disposal of household hazardous waste.
Storm Drain Marking	General public	Increase awareness of stormwater impacts on surface waters, and prevention of illicit discharges.

Table 2: Existing Public Education and Outreach Activities

Ongoing Activities

In addition to maintaining all existing programs and activities, in 2017, the City will consider:

- Joining STORM (Stormwater Outreach for Regional Municipalities), and
- Contracting with a service provider for stormwater educational programming in schools.

The City will also add the following activities:

Program	Target Audience	Goal and/or Behaviors Promoted
<i>Don't Drip and Drive</i>	Residents	Prevention of illicit discharges through vehicle maintenance.
Door Hangers	Residents and Businesses	Prevention of illicit discharges.

Table 3: Ongoing Public Education and Outreach Activities

In addition, the City will continue to provide stewardship opportunities and partner with other organizations to encourage residents to participate in activities such as, storm drain curb marker program, litter pickups, and riparian invasive removal events. (S5.C.1.b)

Program Evaluation (S5.C.1.c)

In 2016, staff reviewed the December 31, 2015 *North and South Sound Natural Yard Care Education Evaluation Report* published by Cascadia Consulting Group, which is available on the Snohomish County web site. The City of Mountlake Terrace had a high rate of participation in the classroom training events that were part of the study, and therefore this program served its purpose and was successful. The study pointed to a higher level of effectiveness which could be attained through a combination of classroom learning and hands on exercises. Mountlake Terrace is exploring a continuation of this program to include the hands on component in conjunction with Snohomish County, who is seeking grant funding. This 'phase 2' opportunity is not available for 2017, so for 2017, the City will invest in other forms of public education.

In 2017 the City of Mountlake Terrace plans to continue its partnership with the Environmental Coalition of South Seattle (ECOSS) on the Puget Sound Spill Kit Program, and continue to use the results from this program evaluation to improve the program and direct education and outreach resources most effectively.

Permit S5.C.2 - Public Involvement and Participation

Goal

The City's goal for public involvement and participation is to actively engage all willing residents, business owners, property owners, and contractors, in all of the aspects of stormwater. Public involvement is of particular importance to the City of Mountlake Terrace because the City depends on support from volunteers to augment what is commonly referred to as "our skeleton crew".

What Is Required

Section S5.C.2 of the Phase II permit requires the City to include ongoing opportunities for public involvement through advisory councils, watershed committees, participation in developing rate structures, stewardship programs, environmental activities, or other similar activities. The City is also required to make its SWMP document, annual report, and all other submittals required under the Phase II Permit, available to the public and posted on the City's website.

Program Description

The City maintains an Interlocal Agreement (ILA) with several surrounding jurisdictions for the control of the level of Lake Ballinger and the management of the surface water within the McAleer Creek watershed. In 2016 and prior, public involvement and participation efforts centered around efforts to preserve and maintain water quality in Lake Ballinger through participation and leadership in the Lake Ballinger / McAleer Creek Watershed Forum¹. A similar ILA and initial study has been considered for the adjacent Lyon Creek watershed.

Low Impact Development (LID) Code Integration

Another major component of the public involvement and participation in the City's SWMP development and implementation was carried out as a part of the update of development codes, standards and policies, and enforceable documents to integrate Low Impact Development. This public involvement process was carried out in 2016 through a total of 16 public meetings including, stakeholders group meetings, Planning Commission meetings, and City Council meetings, as well as through City newsletter articles and press releases.

Ongoing Activities

S5.C.2.a and S5.C.2.b Involving the Public in the SWMP

In addition to continuing to implement and refine codes and standards related to Low Impact Development (LID), the City invites the public to review and comment on the City's Stormwater Management Program Plan (SWMP Plan) via an advertisement on the City's web home page. The City welcomes comments from the public at any time throughout the year, and provides a contact number for residents to call with questions throughout the year from the City's SWMP webpage:

<http://wa-mountlaketerrace.civicplus.com/369/Public-Involvement-Education>

¹ The legal name of this Forum is the Hall Lake, Hall Creek, Echo Lake, Lake Ballinger/McAleer Creek Forum. For this report the Forum is referred to as the Lake Ballinger/McAleer Creek Forum.

2017 Stormwater Management Program (SWMP) Plan

2017 Surface Water Plan and Rate Study

A major part of the public involvement and participation is anticipated in the development of the SWMP was carried out as a part of the development of the 2017 Surface Water Plan and rate study.

City staff plans to continue to provide opportunities for public involvement through web posting of the SWMP Plan, and newsletter articles in 2017.

Permit S5.C.3 - Illicit Discharge Detection and Elimination

Goal

Only rain is allowed down storm drains. The goal of the illicit discharge detection and elimination (IDDE) program is to detect, remove, and eliminate illicit discharges and connections found in the municipal stormwater system. This goal is achieved through inspections, education, regulations, and enforcement.

What Is Required

The City is required by Section S5.C.3 of the Phase II Permit to develop, implement, and enforce a program to detect and remove illicit connections, discharges, and spills into the City's MS4. This program is required to include:

- A municipal storm sewer system map that shows the location of all known outfalls, receiving waters, and structural best management practices (BMPs). For all outfalls with a nominal diameter of more than 24 inches (or an equivalent cross-sectional area for non-pipe systems), the City should document the tributary conveyance structures, the associated drainage areas, and the land use. The City also needs to develop a mechanism for updating the map.
- A regulatory mechanism to prohibit non-stormwater discharges into the MS4 that includes escalating enforcement procedures and actions.
- An IDDE plan to detect and address non-stormwater discharges and illegal dumping into the City's MS4. This plan should include procedures to screen for illicit discharges; trace, characterize, and remove the discharges; educate the community on the hazards associated with illicit discharges; and assess the effectiveness of the City's IDDE program.
- A hotline for the public to report spills and other illicit discharges including a record of all calls received and follow-up actions.
- Training for municipal field staff on the identification and reporting of illicit discharges into MS4s. This needs to ensure that all field staff that are currently responsible for illicit discharges are trained to conduct these activities and should also include an ongoing training program.
- Documentation of reported illicit discharges, responses, and enforcement actions, as well as documentation of training and staff trained.

Program Description

Illicit Discharge Detection and Elimination (IDDE) efforts are currently reactive in nature. The focus is on discharges that are not entirely composed of stormwater. The long term goal for this program

2017 Stormwater Management Program (SWMP) Plan

is that there be a provision for adequate FTE's to support a more proactive program, which would emphasize site inspection and illicit discharge identification.

Investigations and responses to illicit discharges are designed to detect, remove, and prevent illicit discharges. In 2014, the City built a decant facility for use in decontaminating equipment and byproducts of stormwater maintenance. Upon notification of a spill, Public Works employees are notified (or after hours call placed to the on-call individual) and respond to the site. The spill response van is also available 24 hours for response spills from a gallon or two up to 50 or more. The City has one full time construction inspector who visits all construction sites on a daily basis. All site runoff issues are passed along as soon as they are received.

Currently, there is no published response plan.

S5.C.3.a Municipal Stormwater Drainage System Map

In 2008, the City converted its storm system map from an AutoCAD format to an ArcGIS format. The system map includes line and structures, and data has been attached to the attributes beginning at this transition time. The City will continue to maintain an up-to date stormwater conveyance map in an enterprise geospatial database. Updating and managing geospatial data is done according to documented procedures and quality control standards. Global information system (GIS) data includes attributes that describe ownership, water quality facility design details, flow control facility design details, conveyance design information, and spatial data. GIS data is managed with ESRI software and database management system solutions. Both private and public stormwater system data is managed geospatially.

S5.C.3.b Water Pollution Prevention Ordinance/Municipal Code 16.21

The City of Mountlake Terrace Municipal Code 16.21 Illicit Discharge Detection and Elimination and Operation, Maintenance, and Inspection of Storm Drain Facilities authorizes the IDDE program and meets the regulatory requirements specified in the NPDES.

In the vast majority of cases, the City works to enforce this code by using education and technical assistance to seek voluntary compliance. The procedure for voluntary correction is outlined in *MTMC Section 16.21.110.B.1*, which specifies the required components of a voluntary correction agreement between the City and the responsible person. This includes a description of the violation, including location, and the necessary corrective action which must take place by a certain date or time and consequences for non-action. If the responsible person fails to meet the terms of this agreement, then the City will escalate its response as necessary to ensure compliance; first by supplying violators with a warning letter that clearly details what is needed to comply with *MTMC 16.21.110* and the consequences of refusal to comply. If voluntary compliance is unsuccessful, enforcement procedures escalate to a notice of Civil Violation under the terms outlined in *MTMC Section 16.21.110.B.2* appealable to the Hearing Examiner.

The City will escalate its response as necessary to ensure compliance; first by supplying violators with a warning letter that clearly details what is needed to comply with Municipal Code 16.21 and the consequences of refusal to comply. If further actions are needed, the City has the power to bring violators before the City's hearing examiner.

2017 Stormwater Management Program (SWMP) Plan

S5.C.3.c Ongoing IDDE Program to detect non-stormwater discharges and Illicit Connections
The City is required to screen 40% of the City's stormwater system for illicit connections by December 31, 2017. In 2017, stormwater inspection reports were modified to add a check box for illicit connections to better track and document that the City's stormwater maintenance crew have been using required stormwater facility inspections as an opportunity to conduct visual inspection procedures for signs of illicit connections. This visual inspection protocol is noted as an acceptable screening practice in *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessment*, Center for Watershed Protection, October 2004. These inspections are recorded as part of the Stormwater Crew's catch basin inspection records. The stormwater crew will notify the City's Stormwater Supervisor if potential pollution issues are identified.

S.5.C.3.d Implement an ongoing program designed to address illicit discharges
The City responds to and investigates calls regarding environmental concerns such as illegal dumping, spills, illicit discharges, and illicit connections.

The City operates a telephone hotline that allows citizens to report illicit discharges or illicit dumping within city limits: (425) 744-6227. The hotline is covered 24 hours a day, seven days a week. During regular business hours, calls are received and followed up on by the Public Works Division Stormwater Supervisor. Off hours calls are managed by Mountlake Terrace's police dispatch and standby maintenance crew. The hotline is listed on the City's website. All calls are tracked and followed up on.

S.5.C.3.e Training Program

Spill response training has largely been of the "on the job" variety, with field training by actual performance of the duties. In 2017, Stormwater Staff attended IDDE training by ECOSSE to comply with Section S5.C.3.f.i of the Phase II Municipal Stormwater Permit. The City's Public Works Safety Officer provides training on IDDE annually and as needed to train new employees and to disseminate updated information.

S.5.C.3.f Program Recordkeeping

The City currently maintains a copy of each ERTS report and maintains records of visual inspections of catch basins and other stormwater facilities in order to meet the 40% screening requirement.

Ongoing Activities

The City plans to maintain ongoing IDDE programs and update municipal stormwater system mapping, as well as investigate and remove illicit discharges and connections to the City storm system as follows:

1. Maintain the 24 hour Spill Hotline (425) 744-6227. The spill hotline phone number will be added to outreach materials created by the City.
2. Train municipal field staff on the identification and reporting of illicit discharges and connections through webinars, training workshops, conferences and other capacity building activities, if and when such activities become available. The City's Public Works Safety Officer will provide training on IDDE annually and as needed to train new employees and to disseminate updated information.

2017 Stormwater Management Program (SWMP) Plan

3. Field screen the MS4 (S5.C.3.c).
4. Make updates to the stormwater map, adding LID treatment and flow control facilities (S5.C.3.a).
5. Develop a new Program Manual of IDDE Adaptive Management Policies and Procedures (S5.C.3.d). This on-going program will be developed to detect and address illicit connections that include procedures for locating priority areas, field assessment activities, source tracking and removal, education, records management and program evaluation.
6. Make improvements to systems to track each type of IDDE incidence that rises to the level of a G3 notification. Records will include a copy of the G3 notification, the City's response to the incident, the timing of the response and how those incidences are resolved.
7. Purchase equipment and tools to characterize spills and trace sources.
8. Begin focused field assessments of priority receiving waters and investigations of outfalls to locate any unknown illicit connections.

Permit Element S5.C.4 - Control Runoff from New Development, Redevelopment and Construction Sites

Goal

Controlling pollutant loads and reducing peak flows from developed sites is a long term goal of Section 5C.4 of the Permit and for the City. The program applies to private and public development, including roads.

What Is Required

Section S5.C.4 of the Phase II Permit requires the City to develop, implement, and enforce a program to reduce pollutants in stormwater runoff to its MS4 from new development, redevelopment, and construction site activities. This program must apply to both public and private projects, including roads, and address all site-related pollutant sources. The program should include:

- A regulatory mechanism to implement the program according to the technical thresholds, minimum requirements, and definitions in Appendix 1 of the Phase II Permit (or an equivalent approved by Ecology).
- A permitting process with plan review, inspection and enforcement capability to meet the above referenced standards required by the Phase II Permit.
- Legal authority to inspect private stormwater facilities that discharge to the City's MS4.
- Provisions to allow for Low Impact Development (LID) techniques.
- A regulatory mechanism to verify adequate long-term operation and maintenance of post-construction stormwater facilities and BMPs.
- A mechanism to make available all copies of the notice of intent (NOI) for both construction and industrial activities.

2017 Stormwater Management Program (SWMP) Plan

- Training for all staff responsible for implementing the program to control stormwater runoff from new development, redevelopment, and construction sites, including permitting, plan review, construction site inspections, and enforcement.
- Procedures for tracking plan reviews, inspections, responses, enforcements, maintenance activities, and staff training.

Program Description

How development and redevelopment occurs within the City of Mountlake Terrace can have a significant impact on the health of regional lakes, waterways, and Puget Sound. The City reviews development plans, inspects development sites during construction, and monitors private stormwater system infrastructure bi-annually to ensure facilities are maintained. In addition, the City has begun taking actions to incorporate new alternative stormwater management practices--a.k.a. Low Impact Development (LID)--into its code and operating procedures as required by the NPDES permit.

S5.C.4.a Apply Stormwater Management Standards to Development, Redevelopment, and Construction Sites

The Mountlake Terrace Municipal Code (MTMC) Chapter 16.20 codifies stormwater management in Mountlake Terrace. MTMC 16.20 was updated in 2010 to include all minimum requirements and language required by this section of the permit and the permit's Appendix 1, and again in January, 2017 to incorporate and require LID principles and BMPs. The City references the *2012 Department of Ecology Stormwater Management Manual of Western Washington as updated in 2014 (Stormwater Manual)*.

S5.C.4.b Review and Inspect Development/Redevelopment Projects

MTMC 16.21.100 Post-construction inspection authorizes the Director to administer an inspection program for public and private stormwater facilities in the City and references the minimum maintenance standards in the Stormwater Manual. This chapter authorizes the City to inspect stormwater drainage to determine compliance with the provisions of this chapter. Procedures are in place to allow access to the facility(ies) in the event the owner is not available and an allowance to enter with a search warrant if the owner does not consent to entry.

If the facilities are not being maintained in accordance with the minimum standards in the Stormwater Manual, then the City may require that the "current holder(s) of right title or interest in the property where said facilities are located" shall restore them to where they again function and operate in accordance with the approved drainage plan or the Stormwater Manual." The timeline to provide corrective action that is in S.5.C.4.c.vi. is codified in this chapter.

The City has a permitting process with civil/site plan review and approval process, inspection, and enforcement to meet standards established by S5.C.4b for all new and redeveloped sites that meet the thresholds details in Appendix 1 of the NPDES permit (see Figures 3.2 and 3.3. on pages 9 and 10 of Appendix 1). This oversight occurs in phases: prior to construction during the plan acceptance process, before the site is cleared during an initial site construction best management practices (BMP) implementation inspection, during construction via construction site inspections, and post construction as part of the stormwater infrastructure acceptance inspection.

2017 Stormwater Management Program (SWMP) Plan

Plans are reviewed for compliance with Mountlake Terrace's standards. Public projects do not typically trigger local permits; however, public projects are subject to and abide by Mountlake Terrace's development/redevelopment stormwater management standards.

The City's engineers review projects that trigger temporary erosion and sediment control (TESC) plans, wet weather plans, or stormwater pollution prevention plans (SWPPP). Once the City has accepted a plan to control erosion, runoff and other potential construction impacts, and prior to extensive clearing and construction, City staff inspects the site to ensure that the proper TESC measures have been selected, properly placed, and installed correctly.

During construction, the City conducts frequent inspections at the worksite--typically more than once a week when utilities are being constructed, and after major rain events--to ensure proper implementation and maintenance of TESC best management practices. Mountlake Terrace inspectors have the authority to enforce Mountlake Terrace Municipal Code (MTMC) 16.20 and MTMC 16.21, using corrective action notices and stop work orders, to insure the protection of receiving waters from construction impacts.

After construction, the City again inspects stormwater structures at a project site. If the maintenance thresholds have been triggered, the City requires that needed maintenance take place. If the maintenance thresholds have not been reached, or once maintenance has been completed, the City then accepts the project.

Ongoing maintenance:

Drainage easements are required between private systems and the approved point of discharge (MTMC 16.20.170). These required easements "shall provide for the perpetual access of the City for maintenance, alteration, repair, and replacement of drainage-related facilities"

MTMC 16.20.180.B requires a maintenance guarantee whereas after the completion of construction the developer will guarantee satisfactory maintenance of the facility for two years. The city assumption of maintenance provides developers with the option to transfer operations and maintenance of drainage facilities to the City (MTMC 16.20.200).

Currently, the City is inspecting ninety-eight private stormwater treatment and flow facilities.

All stormwater infrastructure, including runoff treatment and flow control facilities, are inspected post construction one year after acceptance, to release warranty bonds. Once this occurs, sites are added to the long term private system inspection program and typically get inspected within one year from the warranty bond release.

During heavy house construction, the Construction Inspector inspects the stormwater drainage system that can potentially be impacted by the home construction activity. This occurs every six months during heavy home construction. If facilities and stormwater conveyance require cleaning during home construction, responsible parties are required to perform maintenance/cleaning.

S5.C.4.d Notice of Intent (NOI)

The City makes the application for NOIs for coverage under the NPDES Construction Stormwater General Permit and the NPDES General Industrial Stormwater Permit available to the development proponents. Copies of the application are also available at Mountlake Terrace City Hall.

2017 Stormwater Management Program (SWMP) Plan

S5.C.4.e Staff Training

Follow-up training is provided as needed to address changes in standards, procedures, techniques, and staffing. City staff members responsible for inspection of stormwater infrastructure are adequately trained to do so. All staff responsible for managing construction TESC measures are Certified Erosion and Sediment Control Lead (CESCL) trained. Additional Public Works construction staff and maintenance technicians may also receive their first CESCL certification if it is determined it will ensure that the City's inspection requirements are being met. The City will continue to document and maintain records of training provided and the staff trained.

S5.C.4.f Low Impact development (LID) code-related requirements

In 2016 the City used guidance provided by the Washington State Department of Ecology via the *Integrating LID Local Codes: A Guidebook for Local Government* (Puget Sound Partnership, 2012) and other materials provided in Ecology sponsored LID Integration Workshops to review and propose revisions to Codes and Standards to require LID.

The City established a cross-department group to oversee the integrations process, and completed a review of City policies and procedures resulting in a gap / opportunity analysis that was used to propose changes to City codes, procedures and standards. A package of code revisions was presented to City Council and part, but not all proposed revisions were passed.

Ongoing Activities

The City plans to maintain its program to review stormwater plans, comply with the requirements of the Stormwater Manual, supply project proponents with Notice of Intent (NOI) forms, and inspect construction sites. In addition, in 2017, the City will conduct the following activities.

1. Staff will continue to work on outreach related to low impact development, and present a revised package for City Council adoption.
2. Public Works staff will enforce maintenance standards equivalent to or more protective than those established in the 2012 *Stormwater Management Manual for Western Washington* (Volume V, Chapter 4).
3. The City plans to continue its ongoing training efforts for staff implementing the requirements of section S5.C.4 of the Permit. Trainings will continue to be provided in 2017 through in-house training sessions, as well as training opportunities provided by other agencies and forums, such as the Department of Ecology, ECOSS, and the Washington Stormwater Center.
4. Engineering staff will develop standards to address LID.

Permit Element S5.C.5 -Municipal Operations and Maintenance

Goal

The City's goal is to ensure that all of the municipally owned stormwater management facilities are functioning properly, and to prevent or reduce pollutant runoff to the maximum extent practical during the course of City activities. Maintenance activities must be carefully planned, coordinated, and documented to meet the Permit requirements.

What Is Required

Section S5.C.5 of the Phase II Permit requires the City to provide a Pollution Prevention and Operation and Maintenance Program for the area served by its MS4. The goal of the program is to prevent or reduce pollutant runoff from the City's operation and maintenance activities, as well as ensure the proper functioning of the MS4. The program requirements include:

- Maintenance standards that are at least as protective as those specified in the 2012 Stormwater Management Manual for Western Washington as updated in 2014.
- An inspection program that includes all City-owned or operated permanent stormwater treatment, flow control facilities, and catch basins, at a frequency that meets the Phase II Permit requirements unless a reduced frequency can be justified.
- Spot checks of potentially damaged permanent treatment and flow control facilities, other than catch basins after major (greater than 24-hour-10-year recurrence interval rainfall) storm events.
- Practices to reduce stormwater impacts associated with runoff from streets, parking lots, road/highways owned or maintained by the City, and to reduce pollutants in discharges from all lands owned or maintained by the City.
- An ongoing training program for City staff whose construction, operations, or maintenance job functions may affect stormwater quality.
- Development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the City.
- Documentation of inspections, maintenance, or repair activities, as well as staff training.

Program Description

The City of Mountlake Terrace has taken many steps to insure that operation and maintenance activities are done in a manner that protects and reduces potential impacts to stormwater drainage and receiving waters. The City maintains a complete inventory of its 2,168 municipally owned or operated catch basins and inlets, which includes invert elevations, pipe sizes and direction, and sump depths. An effort is currently underway to track the sediment levels for each catch basin inspected to apply for a reduced frequency inspection of stormwater infrastructure as allowed by the permit in S5.C.4.c.iii. Currently, this inspection is required to occur within a two year time period. The City owns and operates a street sweeper. Arterials are swept on average twice a month. Collector and residential streets are swept on average four to five times a year. Overall, between 2,000 and 2,500 lane miles are swept each year.

2017 Stormwater Management Program (SWMP) Plan

The City of Mountlake Terrace Municipal Code Chapter *16.21 Illicit Discharge Detection and Elimination and Operation, Maintenance, and Inspection of Storm Drain Facilities* authorizes an Operation, Maintenance, and Inspection Program which meets the requirements specified in the NPDES.

S5.C.5.a Maintenance Standards

MTMC Section 16.21.100 states that minimum maintenance standards shall be in accordance with the Stormwater manual. The City references the 2012 Stormwater Management Manual for Western Washington as updated in 2014.

S5.C.5.b Annual Inspection of Flow Control and Runoff Treatment Facilities

The City currently inspects and maintains flow control and runoff treatment facilities owned and operated by the City to ensure they are maintained in accordance with City standards. Control structures related to ponds and bioswales are inspected annually. New stormwater treatment and flow control facilities are added to the inspection list when the City takes them into ownership.

S5.C.5.c Major Storm Event Inspections

The City typically inspects the stormwater system during and after large storm events. In 2017, as per NPDES requirements, the City's stormwater maintenance staff will inspect the stormwater system should we have an event that is equal to or greater than the 10-year 24-hour storm (2.8 inches of rainfall in 24 hours).

S5.C.5.d Catch Basin Inspections

Currently the City has opted to inspect all municipally operated catch basin once by August 1, 2017, and every two years thereafter. The City is gathering data to support an alternative inspection schedule, possibly one in which all catch basins which have 50% of the catch basin's storage capacity filled are cleaned. Maintenance and cleaning of catch basins occurs within 6 months of the inspections as required by the permit.

S5.C.5.g O&M Employee Training

The City maintains a training program for all operations field staff on procedures necessary to protect stormwater drainage and receiving waters.

S5.C.5.h Stormwater Pollution Prevention Plan (SWPPP) for Mountlake Terrace's Maintenance and Operations Center

The city utilizes a SWPPP which was developed in February 2010. In 2017 the City will be updating this SWPPP to include provisions related to the new decant facility and to address any required changes caused by new requirements.

S5.C.5.i Record Maintenance

The City maintains records of inspection, maintenance, and repair to City operated stormwater facilities as detailed in each section of S5.C.5. Included are the city's 54 municipally owned or operated stormwater treatment and flow control BMPs / facilities.

Ongoing Activities

The City plans to maintain its ongoing programs for Operations and Maintenance (O&M) in 2017, including, but not limited to: inspection and maintenance of City owned flow control and treatment

2017 Stormwater Management Program (SWMP) Plan

facilities; CB inspection and cleaning program; Stormwater Pollution Prevention Plan for the Mountlake Terrace Maintenance Facility; and spot check inspections. In addition to maintaining existing O&M programs, the City plans to accomplish the following in 2017:

1. The City will need to implement a formal training program for maintenance crews and supervisors to ensure understanding of the program and awareness of roles and responsibilities.
2. The City will need to further develop and adopted procedures for all items listed in the permit requiring documentation of practices and procedures.
3. The City will need to develop maintenance practices among the Public Works crews that meet the requirements contained within the adopted Maintenance Standards found in Volume 5 Chapter 4 of the Stormwater Manual.
4. The City will need to make a change to its software platform used to inspect and maintain the MS4.

Permit Element S8.A -Monitoring and Assessment

Goal

The goals of monitoring and assessment under the Permit are to: 1) study recommended BMPs to determine their effectiveness after implementation and through time; 2) monitor freshwaters to determine whether the region is achieving its goal of clean water; and 3) to track and record efforts in stopping pollution sources.

What Is Required

Section 8 of the Permit covers Status and Trends Monitoring, Effectiveness Studies, and Source Identification and Diagnostic Monitoring (SIDM). In the first two categories, the City was given the option to either conduct its own qualifying Status and Trends Monitoring and/or Effectiveness Studies OR opt in to a regional collective fund. This fund will then be used to complete studies of regional significance. In the case of the SIDM, the City is required to pay into a collective fund.

The Stormwater Work Group (SWG), a subgroup of the Puget Sound Ecosystem Monitoring Program identifies objectives for stormwater monitoring. Working with regional input from several municipalities and the general public, the SWG develops an approach to provide information about stormwater impacts and the effectiveness of stormwater management actions. The SWG makes recommendations to Ecology for directed studies and shares the results with Permittees. For more information, see the SWG webpage at:

<http://www.ecy.wa.gov/programs/wq/psmonitoring/swworkgroup.html>

Ongoing Activities

Section S8 of the Permit describes the monitoring requirements for permittees, including options to complete these monitoring requirements independently or annually contribute funding to regional monitoring programs (RSMP). The City will continue to contribute funding to the regional monitoring programs in 2017, as it is by far the most cost effective option.

2017 Stormwater Management Program (SWMP) Plan

S8.B Status and Trends Monitoring

In 2017, the cost to the City of Mountlake Terrace to buy into the RSMP Status Trends and Monitoring Option is \$5, 118.00.

S8.C Effectiveness Studies

In 2017, the cost to the City of Mountlake Terrace to buy into the RSMP Effectiveness Study Option is \$8,527.00.

S8.D Source Identification and Diagnostic Monitoring

In 2017, the cost to the City of Mountlake Terrace to buy into the RSMP source identification and diagnostic monitoring program is \$791.00.

Appendix A ACRONYMS AND ABBREVIATIONS

AKART	All Known Available and Reasonable methods of prevention, control and Treatment
APWA	American Public Works Association
BMP	Best Management Practice
City	City of Mountlake Terrace
CWA	Clean Water Act
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
IPM	Integrated Pest Management
LID	Low Impact Development
MS4	Municipal Separate Storm Sewer System
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
O&M	Operation and Maintenance
Phase II Permit	National Pollutant Discharge Elimination System Phase II Municipal Stormwater Permit for Western Washington
ROAD MAP	Regional Operations and Maintenance Program
SEPA	State Environmental Policy Act
MTMC	Mountlake Terrace Municipal Code
SWMP	Stormwater Management Program
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Discharge Limit
WRIA	Water Resource Inventory Area
WSDOT	Washington State Department of Transportation
WSU	Washington State University

Appendix B TMDL

Summary of relevant SWMP and Appendix 2 activities to address the applicable TMDL parameter(s). (S7.A)

Name of TMDL	Swamp Creek
EPA Approved Document(s) for TMDL	<i>Swamp Creek Fecal Coliform Bacteria Total Maximum Daily Load: Water Quality Improvement Report and Implementation Plan</i> , June 2006, Ecology Publication No. 06-10-021. http://www.ecy.wa.gov/biblio/0610021.html
Location of Original 303(d) Listings	WA-08-1060
Area Where TMDL Requirements Apply	Requirements apply in all areas regulated under the Permittees municipal stormwater permit and draining to the portion of the WASWIS segment SM74QQ starting at the confluence with the Sammamish River and including all upstream tributaries contributing to the Swamp Creek segment of WASWIS GJ57UL.
Parameter	Fecal Coliform
EPA Approval Date	August 16, 2006
MS4 Permittee	Phase I Permit: Snohomish County Phase II Permit: Everett, Bothell, Lynnwood, Brier, Mountlake Terrace, Kenmore

The City of Mountlake Terrace has identified the entire area tributary to Swamp Creek within the City. Of the estimated 15,300 acres in the watershed, approximately 196 acres or 1.3 % of the land area is in Mountlake Terrace.

Actions Required in Appendix 2 - Total Maximum Daily Load (TMDL) Requirements Western Washington Phase II Municipal Stormwater Permit – August 1, 2013, Modified January 16, 2015

Business Inspections:

The area is completely developed and consists of Mountlake Terrace High School, a commercial area centered on an Albertson’s grocery store and an Arco Service Station at 212th St. SW and 44th Ave. W., along with two church sites and a mix of residential and multifamily properties. There are no commercial animal handling areas and commercial composting facilities in this area. Therefore inspections are not required

Public Education and Outreach:

Bacterial pollution problem awareness information has been inserted into the existing education program for all school presentations. These presentations now incorporate information developed by Snohomish County on bacterial pollution for inclusion in educational programs.

2017 Stormwater Management Program (SWMP) Plan

In 2016 the City published an article about Proper handling and disposal of pet waste in the City Happenings citywide newsletter. The article generated substantial interest among the community.

Operations & Maintenance:

The City provides pet waste disposal bag at owned and operated lands reasonably expected to have substantial domestic animal use.

IDDE:

A priority area has been identified as the area draining into the Swamp Creek TMDL. The parameter for the TMDL is fecal coliform levels. For both of these areas, the City screens for bacteria sources as part of the regular IDDE screening for this section.

Targeted Source Identification & Elimination:

The monitoring falls outside the city limits of Mountlake Terrace, therefore, targeted source identification and elimination is led by other cities. The City of Brier has been monitoring fecal coliform data.

Surface Water Monitoring:

The following is a summary table of surface water monitoring for the locations listed below.

Swamp Creek TMDL Testing on Scriber Creek												
Lab: Lab/Cor, Inc. (1/16 - 11/16) AmTest Laboratories (12/16)												
Sites:												
Sample 1	TDML #1 - Fecal	Fecal Upstream of the junction with Swamp Creek										
Sample 2	TDML #2 - Fecal	Replicate at Site 1										
Sample 3	TDML #3 - Fecal	Downstream side of culvert at Scriber Creek crossing of Poplar Way										
Sample 4	TDML #4 - Fecal	Upstream side of Scriber Creek crossing of Larch Way (212th)										
Sample 8	NEGCTRL - Negative Control											
Sample 9	POSCTRL - Positive Control											
Fecal levels in colonies per 100 ml sample (CFU / 100 ml)												
Testing Site	1/20/2016	2/18/2016	3/17/2016		5/26/2016	6/16/2016	7/26/2016	8/19/2016	9/16/2016	10/28/2016	11/16/2016	12/21/2016
Weather	Sprinkling 44 deg.	Sprinkling , 46 deg.	Sunny, 44 deg.		Sprinkling , 54 deg.	Sunny, 57 deg.	Sunny, 64 deg.		Sprinkling , 60 deg.	Sunny, 56 deg.	Sunny, 42 deg.	Sunny, 38 deg.
TMDL #1	47	156	49		32	75	55		86	24	626	38
TMDL #2	42	182	41		35	106	57		76	25	883	4
TMDL #3	27	120	4		19	168	28		77	14	258	28
TMDL #4	30	98	5		23	134	37		62	21	126	13
Arithmetic Average	37	139	25		27	121	44		75	21	473	21
NEGCTRL - Neg. Ctrl.	<1	<1	<1		<1	<1	<1		<1	<1	<1	
POSCTRL - Pos. Ctrl.	112	82	90		162	62	46		24	294	TNTC*	
*K. pneumonia; E/coli 66 CFU / 100 ml												