# City of Mountlake Terrace

## NPDES II 2012 Calendar Year Annual Report

## Swamp Creek TMDL Status Summary

The Swamp Creek Fecal Coliform Bacteria TMDL / Water Quality Improvement Report and Implementation Plan was approved by the Washington State Department of Ecology on August 16, 2006. The City of Mountlake Terrace is a party to the plan and subject to Appendix D, "Special Requirements for Municipal Permit Holders."

The following actions are permit requirements for the City of Mountlake Terrace under Section S7 of the Western Washington Phase II Municipal Stormwater Permit. A status summary for the 2012 calendar year is listed immediately following the minimum requirements for each specific action:

1. Pollution Source Control Activities

**Minimum Requirements:**

No later than two years from permit issuance, all municipal stormwater permittees shall adopt and enforce an ordinance or other equivalent mechanism requiring the application of source control BMPs related to bacterial pollutants (equivalent to Volume IV of the 2005 Ecology Stormwater Management Manual for Western Washington) for the following existing land uses and activities that generate bacterial pollution.

Specifically, Volume IV, chapter 2, contains general information for implementing BMPs (section 2.1) and specific BMPs for 1) commercial animal handling areas (pg 2-10), 2) commercial composting facilities (pgs 2-11, 2-12), and 3) illicit connections to storm drains (pg 2-22). Where these activities are not occurring, no action is required. BMPs for commercial composting operations shall also be consistent with WAC 173-350-220, Solid Waste Handling Standards, Composting Facilities.

No later than two years from permit issuance, permittees that have land uses with domestic animals (cattle, horses, pets, etc..) that may discharge wastes to their MS4 shall adopt and enforce an ordinance or other equivalent mechanism that protects the MS4 from these sources. A complaint-based response mechanism shall be sufficient to identify sites that are potentially pollution generating.

Where potential sources related to the land uses and activities above do exist, operational source control BMPs shall be required for all pollutant generating sources. Only in those cases where a facility is demonstrated to be causing a violation of surface water standards or is discharging illegally, shall structural source control BMPs shall be required as related to this TMDL. The provision for structural source control BMPs is not intended to apply to individual municipal stormwater outfalls.

**City Response:**

No actions have taken place to date. There are no existing land uses or activities in Mountlake Terrace involving commercial composting facilities or facilities with animal handling areas within the tributary area of the city draining to Scriber Creek and Swamp Creek. No potential sources related to the land use categories listed above exist in the area of Mountlake Terrace tributary to Swamp Creek except for residential areas with domestic pets. The City updated existing stormwater code in 2010 to reflect the control of fecal coliform in areas where discharge wastes may enter the MS4.

2. Public Involvement

**Minimum Requirements:**

All municipal stormwater permittees shall prepare a Bacterial Pollution Remediation Plan (BPRP) as subsection of their Stormwater Management Program (SWMP). The purpose of the BPRP is to facilitate the public's participation in advising on the development, implementation, and update of TMDL-related portions of the SWMP. The BPRP shall include information on relevant activities being taken to reduce bacterial pollution including ordinances, inspection and enforcement resources and strategies, illicit discharge program elements, and water quality monitoring. Municipal stormwater permittees shall evaluate and document the applicability of the following approaches in the BPRP.

- Receiving water sampling to identify bacterial pollution sources within targeted subbasins.
- Development and implementation of a Pet Waste Ordinance
- Evaluate current water pollution ordinance enforcement capabilities
- Evaluation of critical areas ordinance in relation to TMDL goals
- Implementation of an educational program for K-12 students to increase their awareness of bacterial pollution problems.
- Investigation and implementation of methods that prevent additional stormwater bacterial pollution through stormwater treatment, reducing stormwater volumes from existing areas using low impact development retrofitting, and preventing additional sources of stormwater in association with new development using low impact development strategies.

**City Response:**

A BPRP has been prepared for the 2012 NPDES II annual report and incorporated into the SWMP update for 2012 that details implementation status for the minimum requirements.

3. TMDL Activity Documentation and Tracking

**Minimum Requirements:**

All municipal stormwater permittees shall discuss program changes and BPRP activities completed during the previous year in a subsection of their Stormwater Management Program (SWMP) annual report. The purpose of this requirement is to allow for the timely tracking and evaluation of TMDL-related permit requirements by Ecology and the public.

**City Response:**

This document satisfies the requirement listed above.

4. Public Outreach and Education

**Minimum Requirements:**

All municipal stormwater permittees shall increase awareness of bacterial pollution problems and the need to protect water quality by properly managing animal wastes. This requirement shall be considered an additional minimum measure to the Phase I permit (S5.C.10.(b)(ii)). This requirement shall be integrated into one or more of the minimum measures S5.C.1.(a)i, ii, iii, or iv in Phase II permits to cities.

**City Response:**

Activities to date:

- The City has utilized the Stormwater Division web page to include information on pet waste and the impact of fecal coliforms to surface waters.
- The City has incorporated public education material on fecal coliforms developed by Snohomish County into public presentations such as National Night Out and the school education program.

5. Water Quality Monitoring

**Minimum Requirements:**

All municipal stormwater permittees are responsible for performing, or contracting out, water quality monitoring in accordance with Options 1 or 2 below. This monitoring shall be described in a plan prepared in accordance with Ecology's Guidelines for Preparing Quality Assurance Project Plans (QAPPs) for Environmental Studies (Ecology Publication No. 01-03-003 or most current version) and submitted to approval to Ecology within 120 days of permit issuance. Permittees may rely on another entity to satisfy the monitoring component required by this TMDL. Permittees that are relying on another entity to satisfy this monitoring obligation remain responsible for permit compliance if the other entity fails to perform the required monitoring.

Monitoring shall begin within 180 days of permit issuance. The monitoring start date will be extended day for day if Ecology requires more than 30 days to review the QAPP. Permittees shall choose one of the two options outlined in Figure 2 and discussed below:

**Option 1, Direct Measurement of Stormwater:** The concentration and loading of bacteria to Swamp Creek from stormwater within the permittee's jurisdiction shall be estimated by sampling representative outfalls within the MS4 system. Specific sampling locations and frequencies of stormwater outfall monitoring will be determined during Ecology's approval of a Quality Assurance Project Plan (QAPP) prepared as a requirement of the NPDES Permit.

**Option 2, Indirect Measurement of Pollution Sources:** Changes in bacterial levels in Swamp creek as a result of stormwater inputs shall be estimated through receiving water monitoring using flow duration or comparable analyses11. Measuring the effect of stormwater discharges in the receiving water (Swamp Creek or its tributaries) as part of a regularly scheduled program is the approach recommended by this plan.

Within Option 2, permittees may either a) measure water quality entering and leaving their jurisdiction or b) measure water quality at the locations specified in Figure 1 as follows:

- Snohomish County shall monitor bacteria levels at sites SCLU and SCLD and perform flow monitoring at sites Sc and Sl.
- The City of Everett shall monitor bacteria levels at site SCUP, which is in the vicinity of Avondale Road and 119th St SW.
- The City of Kenmore shall monitor bacteria levels at site 0470 and perform flow monitoring at site 56b.
- The Cities of Lynnwood, Mountlake Terrace, and Brier shall monitor bacteria levels at site SRLD. SRLD shall be located at the stream crossing along Cypress Way, Oak Way, or another site approved by Ecology.

Option 2 monitoring must be performed at a frequency that will produce approximately 60 data points or more at each monitoring station over a five year period. The purpose of establishing data frequency requirements is to ensure that a reasonable amount of data will be collected when storm events are affecting the receiving water when a regularly scheduled ambient monitoring approach is used. Continuous flow monitoring at each monitoring point, or a representative location, must be performed to determine if a sampling event is affected, or dominated, by storm flows.

**City Response:**

The City of Mountlake Terrace has chosen to exercise Option 2 and to cooperate with the City of Brier to monitor bacterial levels at site SRLD at a frequency of once per month for a period of five years. The Quality Assurance Project Plan was approved by Ecology on February 28, 2008. The monthly sampling began on April 8, 2008. A representative location for flow monitoring was also approved as part of the Quality Assurance Project Plan. Results to date are included in Appendix 1 of this document.

6. Coordination of Stormwater Management Activities

**Minimum Requirements:**

In association with Phase I permit condition S5.C(3), Snohomish County shall include the discussion of TMDL-related activities as part of the stormwater management coordination activities for physically connected and shared waterbodies.

**City Response:**

As a Phase II jurisdiction, this requirement does not apply.

7. Illicit Discharge Detection and Elimination

**Minimum Requirements:**

The schedule and activities identified for the illicit discharge detection and elimination program in both the Phase I and Phase II permits shall be sufficient to meet TMDL requirements with the following clarifying conditions:

Phase I Permit—Snohomish County shall give strong consideration to prioritizing Outfall Reconnaissance Inventories (ORIs) in areas where bacterial TMDLs are in place. All ORIs shall include bacteria source screening for sewage/septic sources. The County shall develop threshold values for responding to obvious bacterial pollution problems and initiating investigation/termination activities as defined in permit condition S5C8(b)(vii).

Phase II Permit—Waterbodies addressed by a TMDL for bacteria shall be designated as high priority waterbodies (see permit condition S.5.C.3.(c)(ii)) and shall receive field assessments and screening prior to other receiving waterbodies unless approved in writing from Ecology. The presence of sewage/septic system sources shall be investigated as part of all screenings.

**City Response:**

No sewage/septic system sources have been identified to date.

# Appendix 1

## Summary of Results to Date for Mountlake Terrace/Brier Sample Locations

| Aquatic Research Lab Analysis Data | | | | Site Descriptions | | |
|---|---|---|---|---|---|---|
| Swamp Creek TMDL for Fecal Coliform | | | | | | |
| | | | | Site 1 | Upstream of the junction with Swamp Creek | |
| | | | | Site 2 | Replicate at Site 1 | |
| | | | | Site 3 | Downstream side of culvert at Scriber Creek crossing of Poplar Way | |
| | | | | Site 4 | Upstream side of Scriber Creek crossing of Larch Way (212th) | |
| Fecal Levels in colonies per 100 ml sample | | | | | | |
| Date | | Site 1 | Site 2 | Site 3 | Site 4 | Site Conditions |
| 4/8/2008 | 1 | 220 | 224 | 256 | 86 | recent rain |
| 5/13/2008 | 2 | **4000** | **4000** | 4000 | 4000 | **0.3 inches rain** |
| 6/10/2008 | 3 | 520 | 470 | 440 | 110 | 0.05 inches rain |
| 7/8/2008 | 4 | 600 | 500 | 580 | 64 | clear, sunny |
| 8/12/2008 | 5 | 320 | 260 | 400 | 80 | clear, sunny |
| 9/10/2008 | 6 | 210 | 220 | 280 | 150 | clear, sunny |
| 10/21/2008 | 7 | 336 | 312 | 210 | 138 | overcast |
| 11/12/2008 | 8 | **1620** | **2620** | 540 | 880 | **0.77 inches rain - turbid water** |
| 12/9/2008 | 9 | 240 | 380 | 116 | 340 | light rain |
| 1/13/2009 | 10 | 54 | 64 | 92 | 52 | overcast |
| 2/10/2009 | 11 | 180 | 172 | 136 | 166 | light rain |
| 3/10/2009 | 12 | 128 | 136 | 22 | 30 | clear, cool |
| 4/14/2009 | 13 | 86 | 94 | 14 | 14 | clear, cool |
| 5/12/2009 | 14 | 98 | 90 | 208 | 44 | clear, warm |
| 6/9/2009 | 15 | 88 | 80 | 104 | 64 | clear, hot |
| 7/21/2009 | 16 | 248 | 114 | 68 | 48 | clear, hot |
| 8/11/2009 | 17 | **2640** | **4000** | 154 | 166 | **0.2 inches rain - turbid water** |
| 9/8/2009 | 18 | 380 | 340 | 106 | 128 | clear, warm - some rain in last few days |
| 10/13/2009 | 19 | 84 | 44 | 18 | 54 | significant rain in prior weeks but water now very clear |
| 11/10/2009 | 20 | 156 | 188 | 120 | 102 | overcast cool |
| 12/8/2009 | 21 | 400 | 380 | 4 | 16 | Clear, cold 25 degrees |
| 1/12/2010 | 22 | 280 | 160 | 96 | 112 | Cool, overcast - over one inch of rain in last few days |
| 2/9/2010 | 23 | 100 | 142 | 16 | 20 | Cool, overcast - no rain in last few days |
| 3/9/2010 | 24 | 118 | 164 | 6 | 10 | Cool, overcast - no rain in last few days |
| 4/13/2010 | 25 | 30 | 40 | 2 | 2 | Cool, overcast - no rain in last few days |
| 5/11/2010 | 26 | 208 | 184 | 68 | 66 | Cool, overcast - no rain in last few days |
| 6/8/2010 | 27 | 100 | 172 | 24 | 28 | Cool, overcast - no rain in last few days |
| 7/13/2010 | 28 | 272 | 326 | 136 | 66 | Cool, overcast - no rain in last few days |
| 8/10/2010 | 29 | 88 | only one | 144 | 66 | Cool, overcast - no rain in last few days |
| 9/14/2010 | | no results | no results | no results | no results | |
| 10/12/2010 | 30 | 332 | 296 | 160 | 116 | Cool, overcast - no rain in last few days |
| 11/9/2010 | 31 | 420 | 180 | 110 | 78 | Cool, overcast - no rain in last few days |
| 12/14/2010 | 32 | 100 | 200 | 106 | 90 | Cool, overcast - major rain on 12/12 2.75 inches in 18 hours |
| 1/11/2011 | 33 | 92 | 80 | 24 | 12 | Cool, overcast, no rain in last two days |
| 2/11/2011 | 34 | 98 | 70 | 1180 | 8 | Cool, clear |
| 3/15/2011 | 35 | 440 | 340 | 1020 | 240 | 3 inches rain in last week |
| 4/12/2011 | 36 | 16 | 22 | 12 | 10 | Warm, sunny - no rain in last few days |
| 5/10/2011 | 37 | 50 | 40 | 18 | 22 | Warm, sunny - no rain in last few days |
| 6/14/2011 | 38 | 220 | 160 | 148 | 50 | Cool, overcast no rain |
| 7/12/2011 | 39 | 192 | 172 | 78 | 134 | Cool, overcast no rain |
| 8/12/2011 | 40 | 90 | 80 | 112 | 110 | Clear, warm no rain |
| 9/20/2011 | 41 | 148 | 144 | 54 | 68 | Clear, warm no rain |
| 10/10/2011 | 42 | 114 | 225 | 54 | 116 | Cool, overcast, no rain in last two days |
| 11/8/2011 | 43 | 236 | 216 | 36 | 44 | Cool, overcast, no rain in last two days |
| 12/13/2011 | 44 | 300 | 200 | 30 | 44 | Cold, clear, no rain in last week |
| 1/10/2012 | 45 | | | 15 | 22 | Cool, overcast no rain |
| 2/14/2012 | 46 | 131 | 152 | 18 | 58 | Cool, overcast no rain |
| 3/20/2012 | 47 | 72 | 46 | 16 | 25 | Cool, overcast no rain |
| 4/10/2012 | 48 | 104 | 108 | 62 | 48 | Warm, overcast, no rain |
| 5/8/2012 | 49 | 60 | 68 | 13 | 48 | Warm, overcast, no rain |
| 6/12/2012 | 50 | 44 | 62 | 106 | 760 | Warm, clear, no rain |
| 7/10/2012 | 51 | 226 | 129 | 162 | 280 | Warm, clear, no rain |
| 8/14/2012 | 52 | 580 | 302 | 231 | 112 | Warm, clear, no rain |
| 9/18/2012 | 53 | 420 | 202 | 167 | 64 | Warm, clear, no rain |
| 10/9/2012 | 54 | 114 | 112 | 58 | 80 | Warm, clear, no rain |
| 11/13/2012 | 55 | 240 | 220 | 96 | 140 | Overcast, slight rain |
| 12/11/2012 | 56 | 155 | 153 | 20 | 58 | Cool, overcast, drizzle |