

**Snohomish County NPDES Municipal Stormwater Permit  
Annual Report for CY 2010  
Supplemental and Attached Information**

**A) Annual update of Stormwater Management Program**

The updated Stormwater Management Program (SWMP) is attached to this annual report.

**B) Program evaluation and other activities narrative**

1. Changes of authorization

None

2. Summary of actions pursuant to S4F

Snohomish County sent two letters to Ecology pursuant to permit condition S4F.

A letter dated January 14, 2010, notified Ecology that Snohomish County had become aware of a stormwater discharge from Snohomish County's Municipal Separate Storm Sewer System (MS4) to waters of the state that could cause or contribute to a known or likely violation of Water Quality Standards. The monitoring site was located on Broadway Avenue approximately 100 yards south of the intersection with Connolly Avenue and is a discharge point from the County's MS4 to a wetland that drains to Thomas Creek. Snohomish County found that one sample in the 2009 dry season and two samples in the 2009-2010 wet season exceeded the 90<sup>th</sup> percentile standard for fecal coliform bacteria. No corresponding samples were collected or analyzed for fecal coliform bacteria in Thomas Creek. However, Snohomish County acknowledged that the discharge from the site could contribute to a violation of Water Quality Standards in Thomas Creek. The Ecology response on April 6, 2010 determined that the receiving water information was not sufficiently site-specific. Ecology did not accept this notification for consideration under S4.F.2.

A letter dated November 5, 2010, notified Ecology that Snohomish County Surface Water Management responded to a complaint of an active and on-going discharge of conspicuously turbid water on November 1, 2010. A visually conspicuous discharge of turbid water was observed on November 1, 2010, entering Swamp Creek at the 148<sup>th</sup> Street SW crossing. Turbidity measurements taken in the field by County Staff indicated that the discharge was in exceedance of State Water Quality Standards. Turbid water was observed to be leaving a site upstream, discharging to an unnamed tributary of Swamp Creek, which empties into the Snohomish County Municipal Stormwater Conveyance System along the southern right-of-way of 148<sup>th</sup> Street SW, and ultimately discharging to Swamp Creek. Actions taken by Snohomish County included progressive enforcement and voluntary compliance. The responsible party was cooperative and implemented new erosion control BMPs and maintained existing BMPs. No Adaptive Management Plan was requested by Ecology.

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3. Assessment of appropriateness of program design and BMP selection

The stormwater program design and methods of BMP selection set forth in the permit are deemed appropriate by Snohomish County.

4. Updated information about the Structural Control Program

The updated Structural Stormwater Controls Program document is posted on the internet at:

[http://www1.co.snohomish.wa.us/Departments/Public\\_Works/Services/NPDES/default.htm](http://www1.co.snohomish.wa.us/Departments/Public_Works/Services/NPDES/default.htm)

5. Summary of actions taken to comply with applicable TMDL requirements (in response to specific information requirements posed in line 84 of annual report form)

The SWMP accompanying this report contains a detailed description of actions taken in pursuant to TMDL-related permit requirements. The following specific information requirements for this attachment are taken from line 84 of the annual report form.

*Specific deadlines or milestones reached in the reporting term and associated dates:* See table below.

*TMDL-related activities incorporated into the SWMP or other permit requirements, such as monitoring:* See table below.

*Lists or inventories required:* The inventory of businesses for the source control inspection program contains, as required, commercial composting facilities and commercial animal handling facilities within the TMDL areas.

*Description of inspections, including total number of sites targeted and number of inspections conducted:* The inspections required by the TMDLs are inspections of commercial composting facilities and commercial animal handling facilities within the TMDL areas, under the business inspection program. A list of these businesses was compiled in 2009. Inspections are in progress and will be completed in 2011.

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**NPDES permit TMDL Requirements for 2010 - TMDLs for Snohomish Tributaries, North Creek, and Swamp Creek**

Notes: (1) The Swamp Creek TMDL did not contain deadlines. Deadlines for similar elements in the Snohomish Tributaries & North Creek TMDLS apply.  
(2) Action descriptions may vary slightly from permit, due to differences in language among the TMDL requirements in the permit.

Action (deadline)	Comment	SWMP section
Begin monitoring as specified in QAPP (1/17/10)	Completed by deadline	S11
BMPs specified in Early Action BMP Plan are in place (1/17/10)	Completed by deadline	S7
Conduct public review of Bacterial Pollution Control Plan (11/16/10)	Public review performed	

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Selected monitoring and implementation approaches, where options are described in Appendix 2: Snohomish County is implementing Strategy B, Early Action Approach, under the TMDLs for Snohomish River Tributaries and North Creek. To implement monitoring under the Swamp Creek TMDL, the County will implement Option 2, Indirect Measurement of Pollution Sources. As agreed to with Ecology, the County has followed monitoring timelines and dates for submitting the Quality Assurance Project Plan, Bacteria Pollution Control Plan and Early Action Best Management Action Plan set out in Appendix 2 for the Snohomish River Tributaries and North Creek TMDLs.

Other information necessary to provide a summary of the TMDL implementation status and any associated monitoring: As indicated in the table on page 3, Snohomish County developed and conducted public review of a Bacteria Pollution Control Plan (BPCP) in 2010. The plan updates the status of required and recommended TMDL implementation activities. The BPCP is available for download at:

[http://www1.co.snohomish.wa.us/Departments/Public\\_Works/Services/NPDES/npdesbacteria.htm](http://www1.co.snohomish.wa.us/Departments/Public_Works/Services/NPDES/npdesbacteria.htm)

As indicated in the SWMP and the table on page 3, Snohomish County submitted a Quality Assurance Project Plan (QAPP) to Ecology as required by Appendix 2 and option 2 under the Early Action Approach. The QAPP describes Snohomish County's approach to identifying trends and sources of fecal coliform bacteria in polluted surface waters. The QAPP is available for download at:

[http://www.co.snohomish.wa.us/documents/Departments/Public\\_Works/surfacewatermanagement/water\\_quality/snoco\\_tmdl\\_qapp\\_web\\_version.pdf](http://www.co.snohomish.wa.us/documents/Departments/Public_Works/surfacewatermanagement/water_quality/snoco_tmdl_qapp_web_version.pdf)

In accordance with the QAPP, the following 40 sites in the TMDL watersheds were sampled monthly during 2010 for fecal coliform bacteria, total suspended solids and in situ parameters.

The site selection process, included field reconnaissance which resulted in continuation of several established long term stations and dropping some long term stations due to annexations or presence within a flood or drainage district. New stations were added to address fecal coliform TMDLs or provide greater spatial coverage of a watershed. Maps of sampling locations are found in the QAPP.

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<b>WRIA</b>	<b>Waterbody</b>	<b>Site Name</b>	<b>Location</b>	<b>Latitude <sup>e</sup></b>	<b>Longitude <sup>e</sup></b>
Stillaguamish	Armstrong Creek	ARMM <sup>d</sup>	Mouth at Harvey Crk Rd.	1322648.17	446758.68
Stillaguamish	Church Creek	CCPK	Church Creek Park	1276763.00	456406.30
Stillaguamish	Fish Creek	FISH	Near Mouth on 5 <sup>th</sup> Ave	1301110.02	431863.48
Stillaguamish	Jim Creek	JIMJ <sup>d</sup>	@ Jordan Rd.	1337247.54	434271.35
Stillaguamish	Kackman Crk	KACK <sup>d</sup>	@ 55 <sup>th</sup> Ave NE	1318044.65	446808.35
Stillaguamish	Stillaguamish	MSAR	Arlington	1324529.00	441740.00
Stillaguamish	Stillaguamish	MSMD	Marine Dr.	1274008.29	445119.07
Stillaguamish	Pilchuck Creek	PILC	Near Mouth on 236 <sup>th</sup> St NE	1300909.52	444352.70
Stillaguamish	Portage Creek	PORU	43 <sup>rd</sup> Ave.	1313722.49	432762.92
Stillaguamish	Portage Creek	PORL	212 <sup>th</sup> St NE	1298907.42	436680.80
Stillaguamish	Tributary No. 30	TR30	Silvana Terrace Rd	1285305.73	442597.43
Snohomish	Allen Creek	ACLU	67 <sup>th</sup> Ave NE and 112 St. NE	1321706.76	398457.58
Snohomish	Catherine Creek	CATH	12 <sup>th</sup> St NE	1343413.26	369930.52
Snohomish	Cripple Creek	CCUS	Trombley Rd.	1357493.92	327336.87
Snohomish	Cripple Creek	CCLS	Robinhood Lane	1356435.39	320586.58
Snohomish	Dubuque Creek	DUBQ	OK Mill Road	1346289.00	362621.99
Snohomish	French Creek	FCLU	167 <sup>th</sup> Ave.	1352457.64	332337.77
Snohomish	French Creek	STABLES	Stables Creek @ 96 <sup>th</sup> St. SE	1353489.17	334340.37
Snohomish	Little Pilchuck Creek	LPIL	12 <sup>th</sup> St NE	1343480.00	370061.80
Snohomish	Pilchuck River	PILOK <sup>d</sup>	OK Mill Rd	1345904.54	362397.92
Snohomish	Quilceda Creek	QCLU	172 <sup>nd</sup> St Ave NE	1321621.00	422859.20
Snohomish	Quilceda Creek	QCMFU	67 <sup>th</sup> and 152 <sup>nd</sup>	1321121.03	416237.18
Snohomish	Quilceda Creek	QCWF2 <sup>d</sup>	140 <sup>TH</sup> St. NE	1307497.32	412632.24
Snohomish	Quilceda Creek	QCWD <sup>d</sup>	Wade Rd.	1321532.23	413962.12
Snohomish	Woods Creek	WCMS	Mainstem @ Old Owen Rd. <sup>d</sup>	1364083.31	315630.41
Snohomish	Woods Creek	WCWF	Yeager Road	1374717.33	321461.66
Snohomish	Woods Creek	WCFA <sup>c</sup>	Florence Acres Road	1380266.59	319119.38
Lake Washington	North Creek	NCLU <sup>b</sup>	McCollum Park	1298894.69	323046.66
Lake Washington	North Creek	NCLD <sup>a, b</sup>	County Line at 240 <sup>th</sup> St. SE	1307271.61	287516.32
Lake Washington	North Creek	FILBERT	Filbert at Filbert Drive	1298625.43	300088.05
Lake Washington	North Creek	NCMU	Silver Crk. at 196 <sup>th</sup> St. SE	1303061.05	302302.94
Lake Washington	North Creek	SULFUR	Sulfur Crk. at 196 <sup>th</sup> St. SE	1304326.47	300237.37
Lake Washington	Swamp Creek	SCLU	148 <sup>th</sup> St SW	1288708.69	318462.10
Lake Washington	Swamp Creek	SCLD <sup>b</sup>	County line @ Lockwood Rd.	1292081.00	286995.80
Lake Washington	Little Bear	LBLU	51 <sup>st</sup> St. SE	1313603.09	306691.65
Lake Washington	Little Bear	LBLD	228 <sup>th</sup> St. SE	1318160.87	291010.05
Lake Washington	Little Bear	LBHW	Interurban Blvd	1314135.33	310111.66

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Lake Washington	Little Bear Creek	CUTT	Cutthroat at Hwy 9	1318346.66	294215.94
Lake Washington	Little Bear Creek	DANE	Great Dane at Maltby Rd.	1316479.57	296367.14
Lake Washington	Little Bear Creek	TROT	Trout at Interurban Blvd.	1314973.32	310053.58

Notes:

- a. monitoring subject to existing ILA
- b. potential annexation by 2011
- c. additional samples required to confirm ranking
- d. new long term monitoring location
- e. latitude and longitude are provided in NAD\_1983\_StatePlane\_Washington\_North\_FIPS\_4601\_Feet

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Analysis of fecal coliform data for 2010 is ongoing and dependent upon receiving additional guidance from Ecology. Guidance requested in 2010 included definitive identification of the volume, age of data, and analytical methods used to support comparison to the geometric mean and 90<sup>th</sup> percentile standards for fecal coliform bacteria identified in Washington State Administrative Code (WAC 173-201A).

6. Description of any stormwater monitoring studies not included with Annual Stormwater Monitoring Report

None.

7. Operation and maintenance records, if applicable

No changes to these programs, such as modifications to inspection frequencies, are proposed at this time.

No capital construction project related to drainage system maintenance cost \$25,000 or more.

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8. Annexations, incorporations, or jurisdictional boundary changes in the geographic area of coverage during the reporting period, and implications for Snohomish County's Stormwater Management Program.

The table below shows the 2010 municipal annexations of area in unincorporated Snohomish County. The revision to the 2007 Miller annexation brought 3.82 acres of right-of-way back into County jurisdiction.

<b>Annexation Name</b>	<b>City</b>	<b>BRB #</b>	<b>Authority</b>	<b>Effective Date</b>	<b>Acres</b>
Mountain Loop Industrial Addition	Granite Falls	01-2010	801-10	5/13/2010	5.29
Revision to Miller 2007 annexation	Granite Falls	-----	798-10	4/30/2010	(3.82)
				<b>Total Acres</b>	<b>1.47</b>

Snohomish County's responsibilities under its NPDES municipal stormwater permit ended inside the Mountain Loop Industrial Addition annexation area on the effective date of the annexation, and the County resumed responsibilities for the area added with the revision to the 2007 Miller annexation. Granite Falls is a Phase 2 NPDES municipal stormwater permittee, and thus the annexed area came under the requirements of that general permit.

9. Information reported pursuant to permit requirements S9.E.10 and S9.E.11

a) Summary of barriers to implementation of Low Impact Development, and any actions taken to remove the barriers (S9.E.10).

The NPDES Phase 1 municipal stormwater permit defines Low Impact Development (LID) as "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."

This definition ranges from construction of physical objects to land use planning and regulation. There are many barriers to implementation of LID in our society. Some of the primary barriers at the societal level are the lack of broad agreement about the proper scope of LID, even as bounded by the definition above, and the lack of broad agreement about the proper scope of LID requirements that should be in an NPDES municipal stormwater permit. While Snohomish County is taking part in discussions in many venues about these issues, Snohomish County is not going to unilaterally solve them. There are however, some specific barriers that Snohomish County can address, and has addressed:



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- Definition of specific LID best management practices (BMPs) in the Snohomish County Drainage Manual;
- Codes that set forth clear requirements for site planning processes that support the desired outcomes of LID; and
- Technical information in County codes, engineering standards, and the County Drainage Manual that facilitate LID implementation.

In June 2010, Snohomish County adopted revisions to County codes, engineering standards, and the County Drainage Manual that addressed these three issues. The site planning processes set forth in Volume I of the 2005 Ecology Stormwater Management Manual were adopted into code, with supporting information in the revised Drainage Manual. The revised code also requires implementation of the "on-site stormwater management BMPs" related to Minimum Requirement 5 of Appendix 1 of the NPDES permit; these BMPs fall squarely in the definition of LID set forth in the permit. The revised Drainage Manual contains technical information needed to implement these code requirements. Finally, Appendix 1-F of the County Drainage Manual designates a set of BMPs as LID BMPS, which will facilitate use of the County's LID code (Chapter 30.63C SCC).

b) Summary of the extent to which basin or watershed planning is being conducted in the Permittee's jurisdiction, either voluntarily, or pursuant to the Growth Management Act or any other requirement (S9.E.11).

No planning as described above is currently being performed by the County. However, Snohomish County has performed extensive water resource planning in past years, including:

- numerous Watershed Management Plans prepared in accordance with Chapter 400-12 WAC;
- drainage reconnaissance mapping performed in the mid-1990s;
- Snohomish County State of the Waters reports (2000);
- Snohomish County State of the Lakes report (2003) and individual lake update reports (2008);
- Drainage Needs Report (2002); and
- State of the Stilly report (2007), related to the Stillaguamish River basin.

In addition to these documents, Snohomish County updated its Comprehensive Plan pursuant to the state Growth Management Act in 2005.

c) Identification of areas for potential basin or watershed planning that can incorporate development strategies as a water quality management tool to protect aquatic resources. (S9.E.12).

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All of unincorporated Snohomish County fits this description, to the extent that there are no areas in which watershed or basin planning could not incorporate such strategies. A crucial issue, however, is the proper definition and scope of watershed or basin planning. The Final Review Draft of the Urban Stormwater Runoff Preliminary Needs Assessment Technical Memorandum, released by Puget Sound Partnership in October 2010, concluded the Executive Summary with the following statement:

"Acceleration of the maintenance, inspection, and pollutant source investigation elements of the MS4 permit program, in combination with addressing the highest priority retrofits, is recommended as the best catalyst for a significant recovery action in the Puget Sound basin by 2020 due to urban stormwater impacts from existing development."

While much of the energy in discussions of "stormwater planning" has been focused on how to incorporate LID into new development and redevelopment projects, Ecology should consider placing a primary focus on the programs listed above. To the extent stormwater planning focuses on flow issues, it may be more effective to focus the plans on flow mitigation in existing areas, by means that include but are not limited to "LID" measures.