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Western Washington Phase II Municipal Stormwater Permit

National Pollutant Discharge Elimination System and
State Waste Discharge General Permit
for discharges from Small Municipal Separate Storm Sewers
in Western Washington

State of Washington
Department of Ecology
Olympia, Washington 98504-7600

In compliance with the provisions of
The State of Washington Water Pollution Control Law
Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act
(The Clean Water Act)
Title 33 United States Code, Section 1251 *et seq*.

Until this permit expires, is modified, or revoked, Permittees that have properly obtained coverage under this permit are authorized to discharge to waters of the state in accordance with the special and general conditions which follow.

_____
Heather R. Bartlett
Water Quality Program Manager
Department of Ecology

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SPECIAL CONDITIONS

S1. PERMIT COVERAGE AREA AND PERMITTEES

A. Geographic Area of Permit Coverage

This Permit is applicable to owners or operators of regulated small municipal separate storm sewer systems (MS4s) located west of the eastern boundaries of the following counties: Whatcom, Skagit, Snohomish, King, Pierce, Lewis and Skamania.

1. For all cities required to obtain coverage under this permit, the geographic area of coverage is the entire incorporated area of the city.

2. For all counties required to have coverage under this Permit, the geographic area of coverage is the urbanized areas and urban growth areas associated with permitted cities under the jurisdictional control of the county. The geographic area of coverage also includes any urban growth area contiguous to permitted urbanized areas under the jurisdictional control of the county.

3. For Whatcom County, the geographic area of coverage also includes the unincorporated Birch Bay urban growth area.

4. For Secondary Permittees required to obtain coverage under this permit, the minimum geographic area of coverage is all areas identified under S1.A.1 and S1.A.2. At the time of permit coverage, Ecology may establish a geographic area of coverage specific to an individual Secondary Permittee.

5. All regulated small MS4s owned or operated by the Permittees named in S1.D.2.a(i) and (ii),and S1.D.2.b and located in another city or county area requiring coverage under this permit or the *Phase I Municipal Stormwater Permit* or the *Eastern Washington Phase II Municipal Stormwater Permit* are also covered under this permit.

B. Regulated Small Municipal Separate Storm Sewer Systems (MS4s)

All operators of regulated small MS4s are required to apply for and obtain coverage under this Permit or be permitted under a separate individual permit, unless waived or exempted in accordance with condition S1.C.

1. A regulated small MS4:

   a. Is a "Small MS4" as defined in the *Definitions and Acronyms* section at the end of this Permit; and

   b. Is located within, or partially located within, an urbanized area as defined by the latest decennial census conducted by the U.S. Bureau of Census, or

designated by Ecology pursuant to 40 CFR 123.35(b) or 40 CFR 122.26(f); and

c. Discharges stormwater from the MS4 to a surface water of Washington State; and

d. Is not eligible for a waiver or exemption under S1.C. below.

2. All other operators of MS4s, including special purpose districts, which meet the criteria for a regulated small MS4 shall obtain coverage under this Permit. Other operators of small MS4s may include, but are not limited to: flood control, or diking and drainage districts, schools including universities, and correctional facilities that own or operate a small MS4 serving non-agricultural land uses.

3. Any other operators of small MS4s may be required by Ecology to obtain coverage under this permit or an alternative NPDES permit if Ecology determines the small MS4 is a significant source of pollution to surface waters of the state. Notification of Ecology's determination that permit coverage is required will be through the issuance of an Administrative Order issued in accordance with RCW 90.48.

4. The owner or operator of a regulated small MS4 may obtain coverage under this Permit as a Permittee, Co-permittee, or Secondary Permittee as defined in S1.D.1. below.

5. Pursuant to 40 CFR 122.26(f), any person or organization may petition Ecology to require that additional small MS4s obtain coverage under this Permit. The process for petitioning Ecology is:

   a. The person or organization shall submit a complete petition in writing to Ecology. A complete petition shall address each of the relevant factors for petitions outlined on Ecology's website.

   b. In making its determination on the petition, Ecology may request additional information from either the petitioner or the entity that is the subject of the petition.

   c. Ecology will make a final determination on a complete petition within 180 days of receipt of the petition and inform both the petitioner and the MS4 of the decision, in writing.

   d. If Ecology's final determination is that the candidate MS4 will be regulated, Ecology will issue an order to the operator of the MS4 requiring them to obtain coverage under this Permit. The order will specify:

      i. The geographic area of permit coverage for the MS4;

ii. Any modified dates or deadlines for developing and implementing this Permit, as appropriate to the MS4, and for submitting their first annual report; and

iii. A deadline for the operator of the MS4 to submit a complete Notice of Intent (see Appendix 5) to Ecology.

C. Owners and operators of an otherwise regulated small MS4 are not required to obtain coverage under this Permit if:

1. The small MS4 is operated by:

   a. A federal entity, including any department, agency or instrumentality of the executive, legislative, and judicial branches of the Federal government of the United States.

   b. Federally recognized Indian Tribes located within Indian Country, including all trust or restricted lands within the 1873 Survey Area of the Puyallup Tribe of Indians; or

   c. The Washington State Department of Transportation.

   or:

2. The portions of the small MS4 located within the census defined urban area(s) serve a total population of less than 1000 people and a, b, and c, below all apply:

   a. The small MS4 is not contributing substantially to the pollutant loadings of a physically interconnected MS4 that is regulated by the NPDES stormwater program.

   b. The discharge of pollutants from the small MS4 has not been identified as a cause of impairment of any water body to which the MS4 discharges.

   c. In areas where an EPA approved TMDL has been completed, stormwater controls on the MS4 have not been identified as being necessary.

   In determining the total population served, both resident and commuter populations shall be included. For example:

   - For publicly operated school complexes including universities and colleges the total population served would include the sum of the average annual student enrollment plus staff.

   - For flood control, diking, and drainage districts the total population served would include residential population and any non-residents regularly employed in the areas served by the small MS4.

D. Obtaining coverage under this Permit

All operators of regulated small MS4s are required to apply for and obtain coverage in accordance with this section, unless waived or exempted in accordance with section S1.C.

1. Unless otherwise noted, the term "Permittee" shall include a city, town or county Permittee, New Permittee, Co-Permittee, Secondary Permittee, and New Secondary Permittee as defined below:

   a. "Permittee" is a city, town, or county owning or operating a regulated small MS4 applying and receiving a permit as a single entity.

   b. "New Permittee" is a city, town or county that is subject to the *Western Washington Phase II Municipal Stormwater General Permit* and was not subject to the permit prior to August 1, 2013.

   c. "Co-Permittee" is any owner or operator of a regulated small MS4 that is applying in a cooperative agreement with at least one other applicant for coverage under this Permit. Co-Permittees own or operate a regulated small MS4 located within or in proximity to another regulated small MS4.

   d. A "Secondary Permittee" is an operator of a regulated small MS4 that is not a city, town or county. Secondary Permittees include special purpose districts and other MS4s that meet the criteria for a regulated small MS4 in S1.B. above.

   e. "New Secondary Permittee" is a Secondary Permittee that is covered under a municipal stormwater general permit and was not covered by the permit prior to August 1, 2013.

2. Operators of regulated small MS4s have submitted or shall submit to Ecology either a Notice of Intent (NOI) for Coverage under National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater General Permit provided in Appendix 5 or a Duty to Reapply - NOI.

   a. The following Permittees and Secondary Permittees submitted a *Duty to Reapply - NOI* to Ecology prior to August 19, 2011:

      i. Cities and towns: Aberdeen, Algona, Anacortes, Arlington, Auburn, Bainbridge Island, Battle Ground, Bellevue, Bellingham, Black Diamond, Bonney Lake, Bothell, Bremerton, Brier, Buckley, Burien, Burlington, Camas, Centralia, Clyde Hill, Covington, Des Moines, DuPont, Duvall, Edgewood, Edmonds, Enumclaw, Everett, Federal Way, Ferndale, Fife, Fircrest, Gig Harbor, Granite Falls, Issaquah, Kelso, Kenmore, Kent, Kirkland, Lacey, Lake Forest Park, Lake

Stevens, Lakewood, Longview, Lynnwood, Maple Valley, Marysville, Medina, Mercer Island, Mill Creek, Milton, Monroe, Mountlake Terrace, Mount Vernon, Mukilteo, Newcastle, Normandy Park, Oak Harbor, Olympia, Orting, Pacific, Port Orchard, Port Angeles, Poulsbo, Puyallup, Redmond, Renton, Sammamish, SeaTac, Sedro-Woolley, Shoreline, Snohomish, Steilacoom, Sumner, Tukwila, Tumwater, University Place, Vancouver, Washougal, and Woodinville.

ii. Counties: Cowlitz, Kitsap, Thurston, Skagit, and Whatcom.

iii. Secondary Permittees: Bainbridge Island School District #303, Bellingham School District, Bellingham Technical College, Cascadia College, Central Kitsap School District, Centralia College, Clark College, Consolidated Diking Improvement District #1 of Cowlitz County, Edmonds Community College, Evergreen College, Highline Community College, Kelso School District, Kent School District, Longview School District, Lower Columbia College, Port of Anacortes, Port of Bellingham, Port of Olympia, Port of Skagit County, Port of Vancouver, Skagit County Drainage District #19, Skagit Valley College, University of Washington Bothell, Washington State University Vancouver, Washington State General Administration (Capitol Campus), Washington Department of Corrections, Western Washington University, and Whatcom Community College.

b. Operators of regulated small MS4s have submitted or shall submit to Ecology a Notice of Intent (NOI) for Coverage under National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater General Permit provided in Appendix 5 before the effective date of this permit, with the following exceptions:

i. Operators of regulated small MS4s located in the Cities of Lynden and Snoqualmie shall submit a NOI or application to Ecology no later than 30 days after the effective date of this permit.

ii. Operators of regulated small MS4s listed in S1.D.2.a do not need to submit a new application to be covered under this permit.

c. For operators of regulated small MS4s listed in S1.D.2.a, coverage under this permit is automatic and begins on the effective date of this permit, unless the operator chooses to opt out of this General Permit. Any operator of a regulated small MS4 that is opting out of this permit shall submit an application for an individual MS4 permit in accordance with 40 CFR 122.33(b)(2)(ii) no later than the effective date of this permit.

d. Operators of regulated small MS4s which want to be covered under this permit as Co-Permittees shall each submit a NOI to Ecology.

e. Operators of regulated small MS4s which are relying on another entity to satisfy all of their permit obligations shall submit a NOI to Ecology.

f. Operators of small MS4s designated by Ecology pursuant to S1.B.3 of this permit shall submit a NOI to Ecology within 120 days of receiving notification from Ecology that permit coverage is required.

3. Application Requirements

a. For NOIs submitted after the issuance date of this Permit, the applicant shall include a certification that the public notification requirements of WAC 173-226-130(5) have been satisfied. Ecology will notify applicants in writing of their status concerning coverage under this Permit within 90 days of Ecology's receipt of a complete NOI.

b. Each Permittee applying as a Co-Permittee shall submit a NOI provided in Appendix 5. The NOI shall clearly identify the areas of the MS4 for which the Co-Permittee is responsible.

c. Permittees relying on another entity or entities to satisfy one or more of their permit obligations shall notify Ecology in writing. The notification shall include a summary of the permit obligations that will be carried out by another entity. The summary shall identify the other entity or entities and shall be signed by the other entity or entities. During the term of the permit, permittees may terminate or amend shared responsibility arrangements by notifying Ecology, provided this does not alter implementation deadlines.

d. Secondary Permittees required to obtain coverage under this Permit, and the *Phase I Municipal Stormwater Permit* or the *Eastern Washington Phase II Municipal Stormwater Permit* may obtain coverage by submitting a single NOI.

S2. AUTHORIZED DISCHARGES

A. This Permit authorizes the discharge of stormwater to surface waters and to ground waters of the state from MS4s owned or operated by each Permittee covered under this permit, in the geographic area covered pursuant to S1.A. These discharges are subject to the following limitations:

1. Discharges to ground waters of the state through facilities regulated under the Underground Injection Control (UIC) program, chapter 173-218 WAC, are not authorized under this Permit.

2. Discharges to ground waters not subject to regulation under the federal Clean Water Act are authorized in this permit only under state authorities, chapter 90.48 RCW, the Water Pollution Control Act.

B. This Permit authorizes discharges of non-stormwater flows to surface waters and to ground waters of the state from MS4s owned or operated by each Permittee covered under this permit, in the geographic area covered pursuant to S1.A, only under one or more of the following conditions:

1. The discharge is authorized by a separate NPDES or State Waste Discharge permit.

2. The discharge is from emergency fire fighting activities.

3. The discharge is from another illicit or non-stormwater discharge that is managed by the Permittee as provided in Special Condition S5.C.3 or S6.C.3.

These discharges are also subject to the limitations in S2.A.1 and S.2.A.2 above.

C. This Permit does not relieve entities that cause illicit discharges, including spills of oil or hazardous substances, from responsibilities and liabilities under state and federal laws and regulations pertaining to those discharges.

D. Discharges from MS4s constructed after the effective date of this permit shall receive all applicable state and local permits and use authorizations, including compliance with chapter 43.21C RCW (the State Environmental Policy Act).

E. This Permit does not authorize discharges of stormwater to waters within Indian Country or to waters subject to water quality standards of Indian Tribes, including portions of the Puyallup River and other waters on trust or restricted lands within the 1873 Survey Area of the Puyallup Tribe of Indians Reservation, except where authority has been specifically delegated to Ecology by the U.S. Environmental Protection Agency. The exclusion of such discharges from this Permit does not waive any rights the State may have with respect to the regulation of the discharges.

S3. RESPONSIBILITIES OF PERMITTEES

A. Each Permittee covered under this Permit is responsible for compliance with the terms of this Permit for the regulated small MS4s that they own or operate. Compliance with (1) or (2) below is required as applicable to each Permittee, whether the Permittee has applied for coverage as a Permittee, Co-Permittee, or Secondary Permittee.

1. All city, town and county Permittees are required to comply with all conditions of this Permit, including any appendices referenced therein, except for Special Condition S6 Stormwater Management Program for Secondary Permittees.

2. All Secondary Permittees are required to comply with all conditions of this Permit, including any appendices referenced therein, except for section S5 Stormwater Management Program for Cities, Towns and Counties and S8.B, S8.C, and S8.D Monitoring.

B. Permittees may rely on another entity to satisfy one or more of the requirements of this Permit. Permittees that are relying on another entity to satisfy one or more of their permit obligations remain responsible for permit compliance if the other entity fails to implement permit conditions. Permittees may rely on another entity provided all the requirements of 40 CFR 122.35(a) are satisfied, including but not limited to:

1. The other entity, in fact, implements the Permit requirements.

2. The other entity agrees to take on responsibility for implementation of the Permit requirement(s) as indicated on the NOI.

S4. COMPLIANCE WITH STANDARDS

A. In accordance with RCW 90.48.520, the discharge of toxicants to waters of the state of Washington which would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria is prohibited. The required response to such discharges is defined in section S4.F, below.

B. This Permit does not authorize a discharge which would be a violation of Washington State Surface Water Quality Standards (chapter 173-201A WAC), Ground Water Quality Standards (chapter 173-200 WAC), Sediment Management Standards (chapter 173-204 WAC), or human health-based criteria in the national Toxics Rule (Federal Register, Vol. 57, NO. 246, Dec. 22, 1992, pages 60848-60923). The required response to such discharges is defined in section S4.F, below.

C. The Permittee shall reduce the discharge of pollutants to the maximum extent practicable (MEP).

D. The Permittee shall use all known, available, and reasonable methods of prevention, control and treatment (AKART) to prevent and control pollution of waters of the state of Washington.

E. In order to meet the goals of the Clean Water Act, and comply with S4.A, S4.B, S4.C, and S4.D each Permittee shall comply with all of the applicable requirements of this Permit as identified in S3. Responsibilities of Permittees.

F. A Permittee remains in compliance with S4 despite any discharges prohibited by S4.A or S4.B, when the Permittee undertakes the following response toward long-term water quality improvement:

1. A Permittee shall notify Ecology in writing within 30 days of becoming aware, based on credible site-specific information that a discharge from the MS4 owned or operated by the Permittee is causing or contributing to a known or likely violation of Water Quality Standards in the receiving water. Written notification provided under this subsection shall, at a minimum, identify the source of the site-specific information, describe the nature and extent of the known or likely violation in the receiving water, and explain the reasons why the MS4 discharge is believed to be causing or contributing to the problem. For ongoing or continuing violations, a single written notification to Ecology will fulfill this requirement.

2. In the event that Ecology determines, based on a notification provided under S4.F.1 or through any other means, that a discharge from an MS4 owned or operated by the Permittee is causing or contributing to a violation of Water Quality Standards in a receiving water, Ecology will notify the Permittee in writing that an adaptive management response outlined in S4.F.3 below is required, unless:

    a. Ecology also determines that the violation of Water Quality Standards is already being addressed by a Total Maximum Daily Load (TMDL) or other enforceable water quality cleanup plan; or

    b. Ecology concludes the MS4 contribution to the violation will be eliminated through implementation of other permit requirements.

3. Adaptive Management Response

    a. Within 60 days of receiving a notification under S4.F.2, or by an alternative date established by Ecology, the Permittee shall review its Stormwater Management Program (SWMP) and submit a report to Ecology. The report shall include:

        i. A description of the operational and/or structural BMPs that are currently being implemented to prevent or reduce any pollutants that are causing or contributing to the violation of Water Quality Standards, including a qualitative assessment of the effectiveness of each best management practice (BMP).

        ii. A description of potential additional operational and/or structural BMPs that will or may be implemented in order to apply AKART on a site-specific basis to prevent or reduce any pollutants that are causing or contributing to the violation of Water Quality Standards.

        iii. A description of the potential monitoring or other assessment and evaluation efforts that will or may be implemented to monitor, assess, or evaluate the effectiveness of the additional BMPs.

iv. A schedule for implementing the additional BMPs including, as appropriate: funding, training, purchasing, construction, monitoring, and other assessment and evaluation components of implementation.

b. Ecology will, in writing, acknowledge receipt of the report within a reasonable time and notify the Permittee when it expects to complete its review of the report. Ecology will either approve the additional BMPs and implementation schedule or require the Permittee to modify the report as needed to meet AKART on a site-specific basis. If modifications are required, Ecology will specify a reasonable time frame in which the Permittee shall submit and Ecology will review the revised report.

c. The Permittee shall implement the additional BMPs, pursuant to the schedule approved by Ecology, beginning immediately upon receipt of written notification of approval.

d. The Permittee shall include with each subsequent annual report a summary of the status of implementation and the results of any monitoring, assessment or evaluation efforts conducted during the reporting period. If, based on the information provided under this subsection, Ecology determines that modification of the BMPs or implementation schedule is necessary to meet AKART on a site-specific basis, the Permittee shall make such modifications as Ecology directs. In the event there are ongoing violations of water quality standards despite the implementation of the BMP approach of this section, the Permittee may be subject to compliance schedules to eliminate the violation under WAC 173-201A-510(4) and WAC 173-226-180 or other enforcement orders as Ecology deems appropriate during the term of this permit.

e. A TMDL or other enforceable water quality cleanup plan that has been approved and is being implemented to address the MS4's contribution to the Water Quality Standards violation supersedes and terminates the S4.F.3 implementation plan.

f. Provided the Permittee is implementing the approved adaptive management response under this section, the Permittee remains in compliance with Condition S4, despite any on-going violations of Water Quality Standards identified under S4.A or B above.

g. The adaptive management process provided under Section S.4.F is not intended to create a shield for the Permittee from any liability it may face under 42 U.S.C. 9601 *et seq*. or chapter 70.105D RCW.

G. Ecology may modify or revoke and reissue this General Permit in accordance with G14 General Permit Modification and Revocation, if Ecology becomes aware of additional control measures, management practices or other actions beyond what is required in this Permit that are necessary to:

1. Reduce the discharge of pollutants to the MEP,

2. Comply with the state AKART requirements, or

3. Control the discharge of toxicants to waters of the State of Washington.

S5. STORMWATER MANAGEMENT PROGRAM FOR CITIES, TOWNS AND COUNTIES

A. Each Permittee shall develop and implement a Stormwater Management Program SWMP. A SWMP is a set of actions and activities comprising the components listed in S5 and any additional actions necessary, to meet the requirements of applicable TMDLs pursuant to S7 *Compliance with TMDL Requirements,* and S8 *Monitoring and Assessment*. This section applies to all cities, towns, and counties covered under this Permit, including cities, towns, and counties that are Co-permittees. Where the term "Permittee" is used in this section the requirements apply to all cities, towns, and counties covered under this Permit.

New Permittees subject to this permit as described in S1.D.1.b shall fully meet the requirements in S5 as modified in footnotes below, or as specified in an alternate schedule as a condition of coverage by Ecology. Permittees obtaining coverage after the issuance date of this permit shall fully meet the requirements in S5 as specified in an alternate schedule as a condition of coverage by Ecology.

1. At a minimum the Permittee's SWMP shall be implemented throughout the geographic area subject to this Permit as described in S1.A.1.

2. Each Permittee shall prepare written documentation of the SWMP, called the SWMP Plan. The SWMP Plan shall be organized according to the program components in S5.C or a format approved by Ecology, and shall be updated at least annually for submittal with the Permittee's annual reports to Ecology (see S9 Reporting and Record Keeping). The SWMP Plan shall be written to inform the public of the planned SWMP activities for the upcoming calendar year, and shall include a description of:

   a. Planned activities for each of the program components included in S5.C.

   b. Any additional planned actions to meet the requirements of applicable TMDLs pursuant to S7 Compliance with Total Maximum Daily Load Requirements.

[1] New Permittees shall fully develop and implement the SWMP in accordance with the schedules contained in this section no later than February 2, 2018.

c. Any additional planned actions to meet the requirements of S8 Monitoring.

3. The SWMP shall include an ongoing program for gathering, tracking, maintaining, and using information to evaluate SWMP development, implementation and permit compliance and to set priorities.

   a. Each Permittee shall track the cost or estimated cost of development and implementation of each component of the SWMP.[2] This information shall be provided to Ecology upon request.

   b. Each Permittee shall track the number of inspections, official enforcement actions and types of public education activities as required by the respective program component. This information shall be included in the annual report.

4. Permittees shall continue implementation of existing stormwater management programs until they begin implementation of the updated stormwater management program in accordance with the terms of this permit, including implementation schedules.

5. Coordination among Permittees

   a. Coordination among entities covered under municipal stormwater NPDES permits may be necessary to comply with certain conditions of the SWMP. The SWMP should include, when needed, coordination mechanisms among entities covered under a municipal stormwater NPDES permit to encourage coordinated stormwater-related policies, programs and projects within adjoining or shared areas, including:

      i. Coordination mechanisms clarifying roles and responsibilities for the control of pollutants between physically interconnected MS4s covered by a municipal stormwater permit.

      ii. Coordinating stormwater management activities for shared water bodies among Permittees to avoid conflicting plans, policies and regulations.

   b. The SWMP shall include coordination mechanisms among departments within each jurisdiction to eliminate barriers to compliance with the terms of this permit. Permittees shall include a written description of internal coordination mechanisms in the Annual Report due no later than March 31, 2015.

B. The SWMP shall be designed to reduce the discharge of pollutants from regulated small MS4s to the MEP, meet state AKART requirements, and protect water quality.

[2] New Permittees shall begin implementing the requirements of S5.A.3.a no later than August 1, 2015.

C. The SWMP shall include the components listed below. To the extent allowable under state or federal law, all components are mandatory for city, town or county Permittees covered under this permit.

1. **Public Education and Outreach**

The SWMP shall include an education and outreach program designed to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts and encourage the public to participate in stewardship activities. The education program may be developed and implemented locally or regionally.

The minimum performance measures are:

a. Each Permittee shall provide an education and outreach program for the area served by the MS4. The program shall be designed to educate target audiences about the stormwater problem and provide specific actions they can follow to minimize the problem.[3]

i. To build general awareness, Permittees shall select from the following target audiences and subject areas:

(a) General public (including school age children), and businesses (including home-based and mobile businesses)

- General impacts of stormwater on surface waters.
- Impacts from impervious surfaces.
- Impacts of illicit discharges and how to report them.
- Low impact development (LID) principles and LID BMPs.
- Opportunities to become involved in stewardship activities.

(b) Engineers, contractors, developers and land use planners

- Technical standards for stormwater site and erosion control plans.
- LID principles and LID BMPs.
- Stormwater treatment and flow control BMPs/facilities.

[3] New Permittees shall begin implementing the requirements of S5.C.1 no later than August 1, 2015.

ii. To effect behavior change, Permittees shall select from the following target audiences and BMPs:

(a) General public (which may include school age children), businesses (including home-based and mobile businesses)

- Use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials.
- Equipment maintenance.
- Prevention of illicit discharges.

(b) Residents, landscapers and property managers/owners

- Yard care techniques protective of water quality.
- Use and storage of pesticides and fertilizers and other household chemicals.
- Carpet cleaning and auto repair and maintenance.
- Vehicle, equipment and home/building maintenance.
- Pet waste management and disposal.
- LID principles and LID BMPs.
- Stormwater facility maintenance.
- Dumpster and trash compactor maintenance.

b. Each Permittee shall create stewardship opportunities and/or partner with existing organizations to encourage residents to participate in activities such as stream teams, storm drain marking, volunteer monitoring, riparian plantings and education activities.

c. Each Permittee shall measure the understanding and adoption of the targeted behaviors for at least one target audience in at least one subject area. No later than February 2, 2016, Permittees shall use the resulting measurements to direct education and outreach resources most effectively, as well as to evaluate changes in adoption of the targeted behaviors.[4] Permittees may meet this requirement individually or as a member of a regional group.

[4] By no later than August 1, 2017, new Permittees shall begin using the results of measurements to direct education and outreach resources more effectively, as well as to evaluate changes in adopted behaviors.

2. **Public Involvement and Participation**

Permittees shall provide ongoing opportunities for public involvement and participation through advisory councils, public hearings, watershed committees, participation in developing rate-structures or other similar activities. Each Permittee shall comply with applicable state and local public notice requirements when developing elements of the SWMP.

The minimum performance measures are:

a. Permittees shall create opportunities for the public to participate in the decision-making processes involving the development, implementation and update of the Permittee's SWMP.[5]

b. Each Permittee shall post on their website their SWMP Plan and the annual report required under S9.A no later than May 31 each year. All other submittals shall be available to the public upon request. To comply with the posting requirement, a Permittee that does not maintain a website may submit the updated SWMP in electronic format to Ecology for posting on Ecology's website.

3. **Illicit Discharge Detection and Elimination**

The SWMP shall include an ongoing program designed to prevent, detect, characterize, trace and eliminate illicit connections and illicit discharges into the MS4.

The minimum performance measures are:

a. Mapping of the MS4 shall continue on an ongoing basis.[6] MS4 maps shall be periodically updated. At a minimum, maps shall include the following information:

   i. Known MS4 outfalls and discharge points.

   ii. Receiving waters, other than ground water.

   iii. Stormwater treatment and flow control BMPs/facilities owned or operated by the Permittee.

[5] New Permittees shall develop and begin to implement requirements of S5.C.2.a no later than August 1, 2014.

[6] New Permittees shall meet the requirements to map the MS4 according to S5.C.3.a no later than August 1, 2017, except where otherwise noted in this section.

iv. Tributary conveyances to all known outfalls and discharge points with a 24 inch nominal diameter or larger, or an equivalent cross-sectional area for non-pipe systems. The following attributes shall be mapped:

- Tributary conveyance type, material, and size where known.
- Associated drainage areas.
- Land use.

v. All connections to the MS4 authorized or allowed by the Permittee after February 16, 2007.[7]

vi. Geographic areas served by the Permittee's MS4 that do not discharge stormwater to surface waters.

vii. To the extent consistent with national security laws and directives, each Permittee shall make available to Ecology upon request, MS4 map(s) depicting the information required in S5.C.3.a.i through vi above. The preferred format for mapping will be an electronic format with fully described mapping standards. An example description is available on Ecology website.

viii. Upon request, and to the extent appropriate, Permittees shall provide mapping information to federally-recognized Indian Tribes, municipalities, and other Permittees. This permit does not preclude Permittees from recovering reasonable costs associated with fulfilling mapping information requests by federally-recognized Indian Tribes, municipalities, and other Permittees.

b. Each Permittee shall implement an ordinance or other regulatory mechanism to effectively prohibit non-stormwater, illicit discharges into the Permittee's MS4 to the maximum extent allowable under state and federal law.[8]

i. Allowable Discharges: The regulatory mechanism does **not** need to prohibit the following categories of non-stormwater discharges:

- Diverted stream flows
- Rising ground waters

[7] New Permittees shall meet the requirements of S5.C.3.a.v. after August 1, 2013 for all connections to the MS4 authorized after August 1, 2013.

[8] New Permittees shall meet the requirements of S5.C.3.b no later than February 2, 2016.

- Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(b)(20))
- Uncontaminated pumped ground water
- Foundation drains
- Air conditioning condensation
- Irrigation water from agricultural sources that is commingled with urban stormwater
- Springs
- Uncontaminated water from crawl space pumps
- Footing drains
- Flows from riparian habitats and wetlands
- Non-stormwater discharges authorized by another NPDES or state waste discharge permit
- Discharges from emergency fire fighting activities in accordance with S2 Authorized Discharges

ii. Conditionally Allowable Discharges: The regulatory mechanism may allow the following categories of non-stormwater discharges only if the stated conditions are met:

- Discharges from potable water sources, including but not limited to water line flushing, hyperchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be dechlorinated to a total residual chlorine concentration of 0.1 ppm or less, pH-adjusted, if necessary, and volumetrically and velocity controlled to prevent re-suspension of sediments in the MS4.
- Discharges from lawn watering and other irrigation runoff. These discharges shall be minimized through, at a minimum, public education activities (see section S5.C.1) and water conservation efforts.
- Dechlorinated swimming pool, spa and hot tub discharges. The discharges shall be dechlorinated to a total residual chlorine concentration of 0.1 ppm or less, pH-adjusted and reoxygenized if necessary, volumetrically and velocity

controlled to prevent re-suspension of sediments in the MS4. Discharges shall be thermally controlled to prevent an increase in temperature of the receiving water. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4.

- Street and sidewalk wash water, water used to control dust, and routine external building washdown that does not use detergents. The Permittee shall reduce these discharges through, at a minimum, public education activities (see section S5.C.1) and/or water conservation efforts. To avoid washing pollutants into the MS4, Permittees shall minimize the amount of street wash and dust control water used.

- Other non-stormwater discharges. The discharges shall be in compliance with the requirements of a pollution prevention plan reviewed by the Permittee, which addresses control of such discharges.

iii. The Permittee shall further address any category of discharges in (i) or (ii) above if the discharges are identified as significant sources of pollutants to waters of the State.

iv. The ordinance or other regulatory mechanism shall include escalating enforcement procedures and actions.

v. The Permittee shall implement a compliance strategy that includes informal compliance actions such as public education and technical assistance as well as the enforcement provisions of the ordinance or other regulatory mechanism. To implement an effective compliance strategy, the Permittee's ordinance or other regulatory mechanism may need to include the following tools:

- The application of operational and/or structural source control BMPs for pollutant generating sources associated with existing land uses and activities where necessary to prevent illicit discharges. The source control BMPs referenced in this subsection are in Volume IV of the *Stormwater Management Manual for Western Washington*, or an equivalent manual approved by Ecology under the 2013 Phase I Permit.

- The maintenance of stormwater facilities which discharge into the Permittee's MS4 in accordance with maintenance standards established under S5.C.4 and/or S5.C.5 where necessary to prevent illicit discharges.

vi. The Permittee's ordinance or other regulatory mechanism in effect as of the effective date of this permit shall be revised if necessary to meet the requirements of this section no later than February 2, 2018.

c. Each Permittee shall implement an ongoing program designed to detect and identify non-stormwater discharges and illicit connections into the Permittee's MS4.[9] The program shall include the following components:

i. Procedures for conducting investigations of the Permittee's MS4, including field screening and methods for identifying potential sources.

The Permittee shall implement a field screening methodology appropriate to the characteristics of the MS4 and water quality concerns. Screening for illicit connections may be conducted using: *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments*, Center for Watershed Protection, October 2004, or another methodology of comparable or improved effectiveness. The Permittee shall document the field screening methodology in the relevant Annual Report.

All Permittees, except for the City of Aberdeen, shall complete field screening for at least 40% of the MS4 no later than December 31, 2017,[10] and on average 12% each year thereafter. The City of Aberdeen shall complete field screening for at least 40% of the system no later than June 30, 2018 and on average 12% each year thereafter.

ii. A publicly listed and publicized hotline or other telephone number for public reporting of spills and other illicit discharges.[11]

iii. An ongoing training program for all municipal field staff, who, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge and/or illicit connection to the MS4, on the identification of an illicit discharge and/or connection, and on the proper procedures for reporting and responding to the illicit discharge and/or connection. Follow-up training shall be provided as needed to address changes in procedures, techniques, requirements, or

[9] New Permittees shall fully implement the requirements of S5.C.3.c no later than February 2, 2018, except where otherwise noted in this section.

[10] New Permittees shall complete S5.C.3.c.i requirements for field screening covering at least 12% of the MS4 within the Permittee's coverage area no later than December 31, 2017, and on average 12% each year thereafter.

[11] New Permittees shall implement the requirements of S5.C.3.c.ii no later than August 1, 2015.

staffing. Permittees shall document and maintain records of the trainings provided and the staff trained.[12]

iv. Permittees shall inform public employees, businesses, and the general public of hazards associated with illicit discharges and improper disposal of waste.[13]

d. Each Permittee shall implement an ongoing program designed to address illicit discharges, including spills and illicit connections, into the Permittee's MS4.[14] The program shall include:

i. Procedures for characterizing the nature of, and potential public or environmental threat posed by, any illicit discharges found by or reported to the Permittee. Procedures shall address the evaluation of whether the discharge must be immediately contained and steps to be taken for containment of the discharge.

ii. Procedures for tracing the source of an illicit discharge; including visual inspections, and when necessary, opening manholes, using mobile cameras, collecting and analyzing water samples, and/or other detailed inspection procedures.

iii. Procedures for eliminating the discharge; including notification of appropriate authorities; notification of the property owner; technical assistance; follow-up inspections; and use of the compliance strategy developed pursuant to S5.C.3.b.v, including escalating enforcement and legal actions if the discharge is not eliminated.

iv. Compliance with the provisions in (i), (ii), and (iii), above, shall be achieved by meeting the following timelines:

- Immediately respond to all illicit discharges, including spills, which are determined to constitute a threat to human health, welfare, or the environment, consistent with General Condition G3.

[12] New Permittees shall develop and begin implementing the ongoing training program described in S5.C.3.c.iii no later than February 2, 2016.

[13] New Permittees shall inform public employees, businesses, and the general public of hazards associated with illicit discharges no later than February 2, 2017.

[14] New Permittees shall fully develop and implement the requirements of S5.C.3.d no later than February 2, 2018.

- Investigate (or refer to the appropriate agency with the authority to act) within 7 days, on average, any complaints, reports or monitoring information that indicates a potential illicit discharge.

- Initiate an investigation within 21 days of any report or discovery of a suspected illicit connection to determine the source of the connection, the nature and volume of discharge through the connection, and the party responsible for the connection.

- Upon confirmation of an illicit connection, use the compliance strategy in a documented effort to eliminate the illicit connection within 6 months. All known illicit connections to the MS4 shall be eliminated.

e. Permittees shall train staff who are responsible for identification, investigation, termination, cleanup, and reporting of illicit discharges, including spills, and illicit connections, to conduct these activities. Follow-up training shall be provided as needed to address changes in procedures, techniques, requirements or staffing. Permittees shall document and maintain records of the training provided and the staff trained.[15]

f. Recordkeeping: Permittees shall track and maintain records of the activities conducted to meet the requirements of this section.

4. Controlling Runoff from New Development, Redevelopment and Construction Sites

Each Permittee shall implement and enforce a program to reduce pollutants in stormwater runoff to a regulated small MS4 from new development, redevelopment and construction site activities. The program shall apply to private and public development, including roads.[16]

The minimum performance measures are:

a. Implement an ordinance or other enforceable mechanism that addresses runoff from new development, redevelopment, and construction site projects. Except for Permittees in Lewis and Cowlitz Counties and the City of Aberdeen, the ordinance or other enforceable mechanism to implement (i) through (iii), below, shall be adopted and effective no later than December 31, 2016. The

[15] New Permittees shall meet the requirements of S5.C.3.e no later than February 2, 2016.

[16] New permittees shall meet the requirements of S5.C.4 no later than December 31, 2017, except where otherwise specified in this section.

local program adopted to meet the requirements of S5.C.4.a(i) through (iii), below shall apply to all applications[17] submitted on or after January 1, 2017 and shall apply to applications submitted prior to January 1, 2017, which have not started construction[18] by January 1, 2022[19].

For permittees in Lewis and Cowlitz Counties the ordinance or other enforceable mechanism to implement (i) through (iii), below, shall be adopted and effective no later than June 30, 2017. The local program adopted to meet the requirements of S5.C.4.a(i) through (iii), below shall apply to all applications submitted on or after July 1, 2017 and shall apply to projects approved prior to July 1, 2017, which have not started construction by June 30, 2022.

For the City of Aberdeen the ordinance or other enforceable mechanism to implement (i) through (iii), below, shall be adopted and effective no later than June 30, 2018. The local program adopted to meet the requirements of S5.C.4.a(i) through (iii), below shall apply to all applications submitted on or after July 1, 2018 and shall apply to projects approved prior to July 1, 2018, which have not started construction by June 30, 2023.

The ordinance or other enforceable mechanism shall include, at a minimum:

i. The Minimum Requirements, thresholds, and definitions in Appendix 1 or a program approved by Ecology under the 2013 NPDES Phase I Municipal Stormwater Permit, for new development, redevelopment, and construction sites. Adjustment and variance criteria equivalent to those in Appendix 1 shall be included. More stringent requirements may be used, and/or certain requirements may be tailored to local circumstances through the use of Ecology-approved basin plans or other similar water quality and quantity planning efforts. Such local requirements and thresholds shall provide equal protection of receiving

[17] In this context, "application" means, at a minimum a complete project description, site plan, and, if applicable, SEPA checklist. Permittees may establish additional elements of a completed application.

[18] In this context "started construction" means the site work associated with, and directly related to the approved project has begun. For example: grading the project site to final grade or utility installation. Simply clearing the project site does not constitute the start of construction. Permittees may establish additional requirements related to the start of construction.

[19] New Permittees shall meet the requirements of S5.C.4.a no later than December 31, 2017. The local program shall apply to all applications submitted on or after January 1, 2018 and shall apply to applications submitted prior to January 1, 2018, which have not started construction by January 1, 2023.

waters and equal levels of pollutant control to those provided in Appendix 1.

ii. The local requirements shall include the following requirements, limitations, and criteria that, when used to implement the minimum requirements in Appendix 1 (or program approved by Ecology under the 2013 Phase I Permit) will protect water quality, reduce the discharge of pollutants to the MEP, and satisfy the State requirement under chapter 90.48 RCW to apply AKART prior to discharge:

(a) Site planning requirements

(b) BMP selection criteria

(c) BMP design criteria

(d) BMP infeasibility criteria

(e) LID competing needs criteria

(f) BMP limitations

Permittees shall document how the criteria and requirements will protect water quality, reduce the discharge of pollutants to the MEP, and satisfy State AKART requirements.

Permittees who choose to use the requirements, limitations, and criteria above in the *Stormwater Management Manual for Western Washington,* or a program approved by Ecology under the 2013 Phase I Permit, may cite this choice as their sole documentation to meet this requirement.

iii. The legal authority, through the approval process for new development and redevelopment, to inspect and enforce maintenance standards for private stormwater facilities approved under the provisions of this section that discharge to the Permittee's MS4.

b. The program shall include a permitting process with site plan review, inspection and enforcement capability to meet the standards listed in (i) through (iv) below, for both private and public projects, using qualified personnel (as defined in *Definitions and Acronyms*). At a minimum, this program shall be applied to all sites that meet the minimum thresholds adopted pursuant to S5.C.4.a.i, above.

i. Review of all stormwater site plans for proposed development activities.

ii. Inspect, prior to clearing and construction, all permitted development sites that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7 Determining Construction Site Sediment Damage Potential. As an alternative to evaluating each site according to Appendix 7, Permittees may choose to inspect all construction sites that meet the minimum thresholds adopted pursuant to S5.C.4.a.i, above.

iii. Inspect all permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls. Enforce as necessary based on the inspection.

iv. Inspect all permitted development sites upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater facilities. Verify that a maintenance plan is completed and responsibility for maintenance is assigned for stormwater treatment and flow control BMPs/facilities. Enforce as necessary based on the inspection.

v. Compliance with the inspection requirements in (ii), (iii) and (iv) above, shall be determined by the presence and records of an established inspection program designed to inspect all sites. Compliance during this permit term shall be determined by achieving at least 80% of scheduled inspections.

vi. An enforcement strategy shall be implemented to respond to issues of non-compliance.

c. The program shall include provisions to verify adequate long-term operation and maintenance (O&M) of stormwater treatment and flow control BMPs/facilities that are permitted and constructed pursuant to (b) above. Except for Permittees located in Lewis or Cowlitz Counties and the City of Aberdeen, these provisions shall be in place no later than December 31, 2016.[20] For Permittees in Lewis and Cowlitz Counties, the provisions shall be in place no later than June 30, 2017. For the City of Aberdeen, the provisions shall be in place no later than June 30, 2018. The provisions shall include:

i. Implementation of an ordinance or other enforceable mechanism that clearly identifies the party responsible for maintenance, requires inspection of facilities in accordance with the requirements in (ii) through (iv) below, and establishes enforcement procedures.

[20] New Permittees shall meet the requirements of S5.C.4.c no later than December 31, 2017.

ii. Each Permittee shall establish maintenance standards that are as protective or more protective of facility function than those specified in Chapter 4 of Volume V of the *Stormwater Management Manual for Western Washington*. For facilities which do not have maintenance standards, the Permittee shall develop a maintenance standard.

The purpose of the maintenance standard is to determine if maintenance is required. The maintenance standard is not a measure of the facility's required condition at all times between inspections. Exceeding the maintenance standard between the period of inspections is not a permit violation.

iii. Annual inspections of all stormwater treatment and flow control BMPs/facilities that discharge to the MS4 and were permitted by the Permittee according to S5.C.4.b, including those permitted in accordance with requirements adopted pursuant to the 2007-2012 Ecology municipal stormwater permits, unless there are maintenance records to justify a different frequency.

Permittees may reduce the inspection frequency based on maintenance records of double the length of time of the proposed inspection frequency. In the absence of maintenance records, the Permittee may substitute written statements to document a specific less frequent inspection schedule. Written statements shall be based on actual inspection and maintenance experience and shall be certified in accordance with G19 Certification and Signature.

iv. Inspections of all permanent stormwater treatment and flow control BMPs/facilities and catch basins in new residential developments every six months until 90% of the lots are constructed (or when construction is stopped and the site is fully stabilized) to identify maintenance needs and enforce compliance with maintenance standards as needed.

v. Compliance with the inspection requirements in (iii) and (iv) above shall be determined by the presence and records of an established inspection program designed to inspect all sites. Compliance during this permit term shall be determined by achieving at least 80% of scheduled inspections.

vi. Unless there are circumstances beyond the Permittee's control, when an inspection identifies an exceedance of the maintenance standard, maintenance shall be performed:

- Within 1 year for typical maintenance of facilities, except catch basins.
- Within 6 months for catch basins.
- Within 2 years for maintenance that requires capital construction of less than $25,000.

Circumstances beyond the Permittee's control include denial or delay of access by property owners, denial or delay of necessary permit approvals, and unexpected reallocations of maintenance staff to perform emergency work. For each exceedance of the required timeframe, the Permittee shall document the circumstances and how they were beyond their control.

vii. The program shall include a procedure for keeping records of inspections and enforcement actions by staff, including inspection reports, warning letters, notices of violations, and other enforcement records. Records of maintenance inspections and maintenance activities shall be maintained.

d. The program shall make available as applicable copies of the "Notice of Intent for Construction Activity" and copies of the "Notice of Intent for Industrial Activity" to representatives of proposed new development and redevelopment. Permittees shall continue to enforce local ordinances controlling runoff from sites that are also covered by stormwater permits issued by Ecology.[21]

e. Each Permittee shall ensure that all staff whose primary job duties are implementing the program to control stormwater runoff from new development, redevelopment, and construction sites, including permitting, plan review, construction site inspections, and enforcement, are trained to conduct these activities. Follow-up training shall be provided as needed to address changes in procedures, techniques or staffing. Permittees shall document and maintain records of the training provided and the staff trained.[22]

f. Low impact development code-related requirements.

i. No later than December 31, 2016,[23] Permittees shall review, revise and make effective their local development-related codes, rules, standards, or other enforceable documents to incorporate and require LID

[21] New Permittees shall meet the requirements of S5.C.4.d beginning no later than August 1, 2013.

[22] New Permittees shall meet the requirements of S5.C.4.e no later than December 31, 2017.

[23] New Permittees shall meet the requirements of S5.C.4.f.i no later than December 31, 2017.

principles and LID BMPs. For Permittees in Lewis and Cowlitz Counties, the deadline for this requirement is no later than June 30, 2017; for the City of Aberdeen, the deadline for this requirement is no later than June 30, 2018.

The intent of the revisions shall be to make LID the preferred and commonly-used approach to site development. The revisions shall be designed to minimize impervious surfaces, native vegetation loss, and stormwater runoff in all types of development situations. Permittees shall conduct a similar review and revision process, and consider the range of issues, outlined in the following document: *Integrating LID into Local Codes: A Guidebook for Local Governments* (Puget Sound Partnership, 2012).

ii. Except for Permittees in Lewis and Cowlitz Counties and the City of Aberdeen, each Permittee shall submit a summary of the results of the review and revision process in (i) above with the annual report due no later than March 31, 2017[24]. Permittees in Lewis and Cowlitz Counties shall submit the summary with the annual report due no later than March 31, 2018. The City of Aberdeen shall submit the summary with the Fifth Year annual report. This summary shall include, at a minimum, a list of the participants (job title, brief job description, and department represented), the codes, rules, standards, and other enforceable documents reviewed, and the revisions made to those documents which incorporate and require LID principles and LID BMPs. The summary shall include existing requirements for LID principles and LID BMPs in development-related codes. The summary shall be organized as follows:

(a) Measures to minimize impervious surfaces;

(b) Measures to minimize loss of native vegetation; and

(c) Other measures to minimize stormwater runoff.

g. Watershed-scale stormwater planning

Each Permittee that has all or part of its coverage area under this Permit in a watershed selected by a Phase I county for watershed-scale stormwater planning under condition S5.C.5.c of the *Phase I Municipal Stormwater General Permit* shall participate with the watershed-scale stormwater planning

[24] New Permittees shall meet the S5.C.4.f.ii reporting requirement in the annual report covering calendar year 2017 and due no later than March 31, 2018.

process led by the Phase I county.[25] As needed and as appropriate, the permittee shall:

i. Collect[26] and provide adequate water quality data from one or more field stations (depending on the Permittee's location in the watershed) to establish existing base flow and storm conditions. Data quality and quantity must be compatible with the rest of the project data.

ii. Collect and provide adequate flow data from one or more field stations (depending on the Permittee's location in the watershed) to calibrate a continuous runoff watershed model. Data quality and quantity must be compatible with the rest of the project data.

iii. Collect and provide adequate benthic macroinvertebrate data from one or more field stations (depending on the Permittee's location in the watershed) to establish existing conditions and establish correlation with flow data. Data quality and quantity must be compatible with the rest of the project data.

iv. Supply existing data/information related to the status of the aquatic community (within the permittee's coverage area within the watershed).

v. Supply existing data of pertinent watershed characteristics for the permittee's coverage area within the watershed, including but not limited to soil types, existing and future land covers, and MS4 mapping to allow construction of a watershed model.

vi. Provide funding for a pro rata share of time spent on creating drainage sub-basins within the model and inputting the pertinent characteristics for those sub-basins (land covers, slopes, drainage system) into the model.

vii. Provide funding for a pro rata share of time spent to calibrate a watershed model for flows and the pollutants identified in S5.C.5.c of the Phase I Permit.

viii. Provide funding for a pro rata share of time spent to estimate hydrologic changes in flows from historic conditions and to predict

[25] For a description of the watershed-scale stormwater planning details, see Special Condition S5.C.5.c of the 2013 *Phase I Municipal Stormwater Permit*.

[26] For S5.C.4.g.i through iii, permittees are not required to collect additional data if existing data is sufficient for model calibration, evaluation of existing conditions, and establishment of correlation between flows and benthic invertebrate data.

future flow and water quality conditions at full build-out under existing or proposed comprehensive land use management plans for the watershed.

ix. Select stormwater management strategies and conduct an evaluation of the effectiveness of those strategies for the permittee's portion of the watershed using the calibrated watershed model. Strategies requiring model evaluation for the permittee must include, at a minimum: 1) changes to development-related codes, rules, standards, and plans, and 2) potential future structural stormwater control projects consistent with S5.C.6.a of the Phase I Permit. Modeling must identify strategies for which the model predicts hydrologic and water quality conditions that fully support "existing uses" and "designated uses" throughout the stream system. This could require multiple model runs.

x. Develop an implementation plan and schedule for the potential strategies identified for the permittee's coverage area within the watershed. The strategies and schedules for each permittee must be part of an integrated watershed-wide implementation plan.

xi. Provide a pro rata share of a public review and comment process on the draft watershed-scale stormwater plan.

h. For any of the requirements above (i-xi), a Permittee may provide funds to the lead Phase I county to cover the cost of any of the permittee's activities listed above, rather than provide the data or perform the work, if preferred and agreed to by both parties.

i. When the Permittee is obligated to fund a portion of the work described above, or elects to fund a task rather than performing the task itself, their financial obligations will be apportioned in accordance to the *percentage land area* over which the permittee has jurisdiction within the planning area. Permittees within a watershed may agree in writing to an alternative scheme of distributing financial obligations.

5. Municipal Operations and Maintenance

Each Permittee shall implement an operations and maintenance (O&M) program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.[27]

[27] New Permittees shall develop and implement the requirements of S5.C.5 no later than December 31, 2017 except where otherwise noted in this section.

The minimum performance measures are:

a. Each Permittee shall implement maintenance standards that are as protective, or more protective, of facility function than those specified in Chapter 4 of Volume V of the *Stormwater Management Manual for Western Washington*. For facilities which do not have maintenance standards, the Permittee shall develop a maintenance standard. Except for Permittees located in Lewis and Cowlitz Counties and the City of Aberdeen, no later than December 31, 2016, Permittees shall update their maintenance standards as necessary to meet the requirements of this section.[28] For Permittees in Lewis and Cowlitz Counties, this requirement shall apply no later than June 30, 2017; for the City of Aberdeen this requirement shall apply no later than June 30, 2018.

   i. The purpose of the maintenance standard is to determine if maintenance is required. The maintenance standard is not a measure of the facility's required condition at all times between inspections. Exceeding the maintenance standard between inspections and/or maintenance is not a permit violation.

   ii. Unless there are circumstances beyond the Permittee's control, when an inspection identifies an exceedance of the maintenance standard, maintenance shall be performed:

      - Within 1 year for typical maintenance of facilities, except catch basins.
      - Within 6 months for catch basins.
      - Within 2 years for maintenance that requires capital construction of less than $25,000.

      Circumstances beyond the Permittee's control include denial or delay of access by property owners, denial or delay of necessary permit approvals, and unexpected reallocations of maintenance staff to perform emergency work. For each exceedance of the required timeframe, the Permittee shall document the circumstances and how they were beyond their control.

b. Annual inspection of all municipally owned or operated permanent stormwater treatment and flow control BMPs/facilities, and taking appropriate

[28] New Permittees shall adopt the updated maintenance standards in Chapter 4 of Volume V of the *Stormwater Management Manual for Western Washington* or an Ecology-approved program under the 2013 Phase I Permit no later than December 31, 2017.

maintenance actions in accordance with the adopted maintenance standards.[29]

Permittees may reduce the inspection frequency based on maintenance records of double the length of time of the proposed inspection frequency. In the absence of maintenance records, the Permittee may substitute written statements to document a specific less frequent inspection schedule. Written statements shall be based on actual inspection and maintenance experience and shall be certified in accordance with G19 Certification and Signature.

c. Spot checks of potentially damaged permanent stormwater treatment and flow control BMPs/facilities after major storm events (24 hour storm event with a 10 year or greater recurrence interval). If spot checks indicate widespread damage/maintenance needs, inspect all stormwater treatment and flow control BMPs/facilities that may be affected. Conduct repairs or take appropriate maintenance action in accordance with maintenance standards established above, based on the results of the inspections.

d. Except for the City of Aberdeen, inspection of all catch basins and inlets owned or operated by the Permittee at least once no later than August 1, 2017 and every two years thereafter. [30] For the City of Aberdeen, the deadline for this requirement shall be no later than June 30, 2018. Clean catch basins if the inspection indicates cleaning is needed to comply with maintenance standards established in the *Stormwater Management Manual for Western Washington*. Decant water shall be disposed of in accordance with Appendix 6 *Street Waste Disposal*.

The following alternatives to the standard approach of inspecting all catch basins once no later than August 1, 2017 and every two years thereafter (except no later than June 30, 2018 and every two years thereafter for the City of Aberdeen) may be applied to all or portions of the system:

i. The catch basin inspection schedule of every two years may be changed as appropriate to meet the maintenance standards based on maintenance records of double the length of time of the proposed inspection frequency. In the absence of maintenance records for catch basins, the Permittee may substitute written statements to document a specific, less frequent inspection schedule. Written statements shall be

[29] New Permittees shall begin annual inspections of municipally owned or operated stormwater treatment and flow control facilities/BMPs no later than December 31, 2017.

[30] New Permittees shall inspect and, if needed, clean all catch basins and inlets owned or operated by the Permittee in accordance with the requirements of S5.C.5.c once during the permit term, to be completed no later than February 2, 2018.

based on actual inspection and maintenance experiences and shall be certified in accordance with G19 Certification and Signature.

ii. Inspections at least once by August 1, 2017 and every two years thereafter may be conducted on a "circuit basis" whereby 25% of catch basins and inlets within each circuit are inspected to identify maintenance needs. Include an inspection of the catch basin immediately upstream of any system outfall or discharge point, if applicable. Clean all catch basins within a given circuit for which the inspection indicates cleaning is needed to comply with maintenance standards established under S5.C.5.a, above.

iii. The Permittee may clean all pipes, ditches, catch basins, and inlets within a circuit once during the permit term. Circuits selected for this alternative must drain to a single point.

e. Compliance with the inspection requirements in b, c, and d above shall be determined by the presence of an established inspection program designed to inspect all sites and achieving at least 95% of inspections.

f. Implement practices, policies and procedures to reduce stormwater impacts associated with runoff from all lands owned or maintained by the Permittee, and road maintenance activities under the functional control of the Permittee. Lands owned or maintained by the Permittee include, but are not limited to, streets, parking lots, roads, highways, buildings, parks, open space, road right-of-ways, maintenance yards, and stormwater treatment and flow control BMPs/facilities. The following activities shall be addressed:

- Pipe cleaning
- Cleaning of culverts that convey stormwater in ditch systems
- Ditch maintenance
- Street cleaning
- Road repair and resurfacing, including pavement grinding
- Snow and ice control
- Utility installation
- Pavement striping maintenance
- Maintaining roadside areas, including vegetation management
- Dust control

- Application of fertilizers, pesticides, and herbicides according to the instructions for their use, including reducing nutrients and pesticides using alternatives that minimize environmental impacts
- Sediment and erosion control
- Landscape maintenance and vegetation disposal
- Trash and pet waste management
- Building exterior cleaning and maintenance

g. Implement an ongoing training program for employees of the Permittee whose primary construction, operations or maintenance job functions may impact stormwater quality. The training program shall address the importance of protecting water quality, operation and maintenance standards, inspection procedures, selecting appropriate BMPs, ways to perform their job activities to prevent or minimize impacts to water quality, and procedures for reporting water quality concerns. Follow-up training shall be provided as needed to address changes in procedures, techniques, requirements, or staffing. Permittees shall document and maintain records of training provided and the staff trained.

h. Implement a Stormwater Pollution Prevention Plan (SWPPP) for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the Permittee in areas subject to this Permit that are not required to have coverage under the *General NPDES Permit for Stormwater Discharges Associated with Industrial Activities* or another NPDES permit that authorizes stormwater discharges associated with the activity. A schedule for implementation of structural BMPs shall be included in the SWPPP. Generic SWPPPs that can be applied at multiple sites may be used to comply with this requirement. The SWPPP shall include periodic visual observation of discharges from the facility to evaluate the effectiveness of the BMP.

i. Maintain records of inspections and maintenance or repair activities conducted by the Permittee.

S6. STORMWATER MANAGEMENT PROGRAM FOR SECONDARY PERMITTEES

A. This section applies to all Secondary Permittees and all New Secondary Permittees, whether coverage under this Permit is obtained individually or as a Co-Permittee with a city, town, county or another Secondary Permittee.

New Secondary Permittees subject to this Permit shall fully meet the requirements of this section as modified in footnotes in S6.D below, or as established as a condition of coverage by Ecology.

1. To the extent allowable under state, federal or local law, all components are mandatory for each Secondary Permittee covered under this Permit, whether covered as an individual Permittee or as a Co-Permittee.

2. Each Secondary Permittee shall develop and implement a stormwater management program (SWMP). A SWMP is a set of actions and activities comprising the components listed in S6 and any additional actions necessary to meet the requirements of applicable TMDLs pursuant to S7 Compliance with TMDL Requirements, and S8 Monitoring and Assessment. The SWMP shall be designed to reduce the discharge of pollutants from regulated small MS4s to the MEP and protect water quality.

3. Unless an alternate implementation schedule is established by Ecology as a condition of permit coverage, the SWMP shall be developed and implemented in accordance with the schedules contained in this section and shall be fully developed and implemented no later than four and one-half years from the initial permit coverage date. Secondary Permittees that are already implementing some or all of the required SWMP components shall continue implementation of those components.

4. Secondary Permittees may implement parts of their SWMP in accordance with the schedule for cities, towns, and counties in S5, provided they have signed a memorandum of understanding or other agreement to jointly implement the activity or activities with one or more jurisdictions listed in S1.D.2.a or S1.D.2.b, and submitted a copy of the agreement to Ecology.

5. Each Secondary Permittee shall prepare written documentation of the SWMP, called the SWMP Plan. The SWMP Plan shall include a description of program activities for the upcoming calendar year.

B. Coordination

Secondary Permittees shall coordinate stormwater-related policies, programs and projects within a watershed and interconnected MS4s. Where relevant and appropriate, the SWMP shall coordinate among departments of the Secondary Permittee to ensure compliance with the terms of this Permit.

C. Legal Authority

To the extent allowable under state law and federal law, each Secondary Permittee shall be able to demonstrate that they can operate pursuant to legal authority which authorizes or enables the Secondary Permittee to control discharges to and from MS4s owned or operated by the Secondary Permittee.

This legal authority may be a combination of statutes, ordinances, permits, contracts, orders, interagency agreements, or similar instruments.

D. Stormwater Management Program for Secondary Permittees

The SWMP for Secondary Permittees shall include the following components:

1. **Public Education and Outreach**

Each Secondary Permittee shall implement the following stormwater education strategies:

a. Storm drain inlets owned or operated by the Secondary Permittee that are located in maintenance yards, in parking lots, along sidewalks, and at pedestrian access points shall be clearly labeled with a message similar to "Dump no waste – Drains to water body".[31]

As identified during visual inspection and regular maintenance of storm drain inlets per the requirements of S6.D.3.d and S6.D.6.a.i below, or as otherwise reported to the Secondary Permittee, any inlet having a label that is no longer clearly visible and/or easily readable shall be re-labeled within 90 days.

b. Each year beginning no later than three years from the initial date of permit coverage, public ports, colleges, and universities shall distribute educational information to tenants and residents on the impact of stormwater discharges on receiving waters, and steps that can be taken to reduce pollutants in stormwater runoff. Distribution may be by hard copy or electronic means. Appropriate topics may include:

i. How stormwater runoff affects local water bodies.

ii. Proper use and application of pesticides and fertilizers.

iii. Benefits of using well-adapted vegetation.

iv. Alternative equipment washing practices, including cars and trucks, that minimize pollutants in stormwater.

v. Benefits of proper vehicle maintenance and alternative transportation choices; proper handling and disposal of vehicle wastes, including the location of hazardous waste collection facilities in the area.

[31] New Secondary Permittees shall label all inlets as described in S6.D.1.a no later than four years from the initial date of permit coverage.

vi. Hazards associated with illicit connections and illicit discharges.

vii. Benefits of litter control of pet waste.

2. **Public Involvement and Participation**

Each year, no later than May 31, each Secondary Permittee shall:

a. Make the annual report available on the Permittee's website.

b. Make available on the Permittee's website the latest updated version of the SWMP Plan.

c. A Secondary Permittee that does not maintain a website may submit the updated SWMP Plan and annual report in electronic format to Ecology for posting on Ecology's website.

3. **Illicit Discharge Detection and Elimination**

Each Secondary Permittee shall:

a. From the initial date of permit coverage, comply with all relevant ordinances, rules, and regulations of the local jurisdiction(s) in which the Secondary Permittee is located that govern non-stormwater discharges.

b. Implement appropriate policies prohibiting illicit discharges,[32] and an enforcement plan to ensure compliance with illicit discharge policies.[33] These policies shall address, at a minimum: illicit connections, non-stormwater discharges, including spills of hazardous materials, and improper disposal of pet waste and litter.

i. Allowable discharges: The policies do not need to prohibit the following categories of non-stormwater discharges:

- Diverted stream flows
- Rising ground waters
- Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(b)(20))

[32] New Secondary Permittees shall develop and implement appropriate policies prohibiting illicit discharges, and identify possible enforcement mechanisms as described in S6.D.3.b no later than one year from the initial date of permit coverage.

[33] New Secondary Permittees shall develop and implement an enforcement plan as described in S6.D.3.b no later than 18 months from the initial date of permit coverage.

- Uncontaminated pumped ground water
- Foundation drains.
- Air conditioning condensation
- Irrigation water from agricultural sources that is commingled with urban stormwater
- Springs
- Uncontaminated water from crawl space pumps
- Footing drains
- Flows from riparian habitats and wetlands
- Discharges from emergency fire fighting activities in accordance with S2 Authorized Discharges
- Non-stormwater discharges authorized by another NPDES or state waste discharge permit

ii. Conditionally allowable discharges: The policies may allow the following categories of non-stormwater discharges only if the stated conditions are met and such discharges are allowed by local codes:

- Discharges from potable water sources, including but not limited to water line flushing, hyperchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be dechlorinated to a total residual chlorine concentration of 0.1 ppm or less, pH-adjusted if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the MS4.
- Discharges from lawn watering and other irrigation runoff. These discharges shall be minimized through, at a minimum, public education activities and water conservation efforts conducted by the Secondary Permittee and/or the local jurisdiction.
- Dechlorinated swimming pool, spa and hot tub discharges. The discharges shall be dechlorinated to a total residual chlorine concentration of 0.1 ppm or less, pH-adjusted and reoxygenated if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the MS4. Discharges shall be thermally controlled to prevent an increase

in temperature of the receiving water. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4.

- Street and sidewalk wash water, water used to control dust, and routine external building washdown that does not use detergents. The Secondary Permittee shall reduce these discharges through, at a minimum, public education activities and/or water conservation efforts conducted by the Secondary Permittee and/or the local jurisdiction. To avoid washing pollutants into the MS4, the Secondary Permittee shall minimize the amount of street wash and dust control water used.
- Other non-stormwater discharges shall be in compliance with the requirements of a pollution prevention plan reviewed by the Permittee which addresses control of such discharges.

iii. The Secondary Permittee shall address any category of discharges in (i) or (ii) above if the discharge is identified as a significant source of pollutants to waters of the State.

c. Maintain a storm sewer system map showing the locations of all known storm drain outfalls and discharge points, labeling the receiving waters (other than ground water) and delineating the areas contributing runoff to each outfall and discharge point. Make the map (or completed portions of the map) available on request to Ecology and to the extent appropriate, to other Permittees. The preferred format for mapping is an electronic format with fully described mapping standards. An example description is provided on Ecology's website.[34]

d. Conduct field inspections and visually inspect for illicit discharges at all known MS4 outfalls and discharge points. Visually inspect at least one third (on average) of all known outfalls and discharge points each year beginning no later than two years from the initial date of permit coverage. Implement procedures to identify and remove any illicit discharges. Keep records of inspections and follow-up activities.

[34] New Secondary Permittees shall meet the requirements of S6.D.3.c no later than four and one-half years from the initial date of permit coverage.

e. Implement a spill response plan that includes coordination with a qualified spill responder.[35]

f. No later than two years from initial date of permit coverage, provide staff training or coordinate with existing training efforts to educate staff on proper BMPs for preventing illicit discharges, including spills. Train all Secondary Permittee staff who, as part of their normal job responsibilities, have a role in preventing such illicit discharges.

4. **Construction Site Stormwater Runoff Control**

From the initial date of permit coverage, each Secondary Permittee shall:

a. Comply with all relevant ordinances, rules, and regulations of the local jurisdiction(s) in which the Secondary Permittee is located that govern construction phase stormwater pollution prevention measures.

b. Ensure that all construction projects under the functional control of the Secondary Permittee which require a construction stormwater permit obtain coverage under the *NPDES General Permit for Stormwater Discharges Associated with Construction Activitie*s or an individual NPDES permit prior to discharging construction related stormwater.

c. Coordinate with the local jurisdiction regarding projects owned or operated by other entities which discharge into the Secondary Permittee's MS4, to assist the local jurisdiction with achieving compliance with all relevant ordinances, rules, and regulations of the local jurisdiction(s).

d. Provide training or coordinate with existing training efforts to educate relevant staff in erosion and sediment control BMPs and requirements, or hire trained contractors to perform the work.

e. Coordinate as requested with Ecology or the local jurisdiction to provide access for inspection of construction sites or other land disturbances which are under the functional control of the Secondary Permittee during land disturbing activities and/or construction period.

5. Post-Construction Stormwater Management for New Development and Redevelopment

From the initial date of permit coverage, each Secondary Permittee shall:

[35] New Secondary Permittees shall develop and implement a spill response plan as described in S6.D.3.e no later than four and one-half years from the initial date of permit coverage.

a. Comply with all relevant ordinances, rules and regulations of the local jurisdiction(s) in which the Secondary Permittee is located that govern post-construction stormwater pollution prevention measures.

b. Coordinate with the local jurisdiction regarding projects owned or operated by other entities which discharge into the Secondary Permittee's MS4, to assist the local jurisdiction with achieving compliance with all relevant ordinances, rules and regulations of the local jurisdiction(s).

6. Pollution Prevention and Good Housekeeping for Municipal Operations

Each Secondary Permittee shall:

a. Implement a municipal operation and maintenance (O&M) plan to minimize stormwater pollution from activities conducted by the Secondary Permittee. The O&M Plan shall include appropriate pollution prevention and good housekeeping procedures for all of the following operations, activities, and/or types of facilities that are present within the Secondary Permittee's boundaries and under the functional control of the Secondary Permittee.[36]

i. **Stormwater collection and conveyance systems**, including catch basins, stormwater pipes, open channels, culverts, and stormwater treatment and flow control BMPs/facilities. The O&M Plan shall address, at a minimum: scheduled inspections and maintenance activities, including cleaning and proper disposal of waste removed from the system. Secondary Permittees shall properly maintain stormwater collection and conveyance systems owned or operated by the Secondary Permittee and regularly inspect and maintain all stormwater facilities to ensure facility function.

Secondary Permittees shall establish maintenance standards that are as protective or more protective of facility function than those specified in Chapter 4 Volume V of the *Stormwater Management Manual for Western Washington*. Secondary Permittees shall review their maintenance standards to ensure they are consistent with the requirements of this section.

Secondary Permittees shall conduct spot checks of potentially damaged permanent stormwater treatment and flow control

[36] New Secondary Permittees shall develop and implement the operation and maintenance plan described in S6.D.6.a no later than three years from initial date of permit coverage.

BMPs/facilities following major storm events (24 hour storm event with a 10 year or greater recurrence interval).

ii. **Roads, highways, and parking lots**. The O&M Plan shall address, but is not limited to: deicing, anti-icing, and snow removal practices; snow disposal areas; material (e.g. salt, sand, or other chemical) storage areas; all-season BMPs to reduce road and parking lot debris and other pollutants from entering the MS4.

iii. **Vehicle fleets**. The O&M Plan shall address, but is not limited to: storage, washing, and maintenance of Secondary Permittee vehicle fleets; and fueling facilities. Secondary Permittees shall conduct all vehicle and equipment washing and maintenance in a self-contained covered building or in designated wash and/or maintenance areas.

iv. **External building maintenance**. The O&M Plan shall address, building exterior cleaning and maintenance including cleaning, washing, painting; and maintenance and management of dumpsters; and other maintenance activities.

v. **Parks and open space**. The O&M Plan shall address, but is not limited to: proper application of fertilizer, pesticides, and herbicides; sediment and erosion control; BMPs for landscape maintenance and vegetation disposal; and trash and pet waste management.

vi. **Material storage facilities and heavy equipment maintenance or storage yards**. Secondary Permittees shall develop and implement a Stormwater Pollution Prevention Plan to protect water quality at each of these facilities owned or operated by the Secondary Permittee and not covered under the *General NPDES Permit for Stormwater Discharges Associated with Industrial Activities* or under another NPDES permit that authorizes stormwater discharges associated with the activity.

vii. **Other facilities that would reasonably be expected to discharge contaminated runoff**. The O&M Plan shall address proper stormwater pollution prevention practices for each facility.

b. From the initial date of permit coverage, Secondary Permittees shall also have permit coverage for all facilities operated by the Secondary Permittee that are required to be covered under the *General NPDES Permit for Stormwater Discharges Associated with Industrial Activities* or another NPDES permit that authorizes discharges associated with the activity.

c. The O&M Plan shall include sufficient documentation and records as necessary to demonstrate compliance with the O&M Plan requirements in S6.D.6.a.(i) through (vii) above.

d. No later than three years from the initial date of permit coverage, Secondary Permittees shall implement a program designed to train all employees whose primary construction, operations, or maintenance job functions may impact stormwater quality. The training shall address:

i. The importance of protecting water quality.

ii. The requirements of this Permit.

iii. Operation and maintenance requirements.

iv. Inspection procedures.

v. Ways to perform their job activities to prevent or minimize impacts to water quality.

vi. Procedures for reporting water quality concerns, including potential illicit discharges (including spills).

S7. COMPLIANCE WITH TOTAL MAXIMUM DAILY LOAD REQUIREMENTS

The following requirements apply if an applicable TMDL is approved for stormwater discharges from MS4s owned or operated by the Permittee. Applicable TMDLs are TMDLs which have been approved by EPA on or before the issuance date of this Permit or prior to the date that Ecology issues coverage under this permit, whichever is later.

A. For applicable TMDLs listed in Appendix 2, affected Permittees shall comply with the specific requirements identified in Appendix 2. Each Permittee shall keep records of all actions required by this Permit that are relevant to applicable TMDLs within their jurisdiction. The status of the TMDL implementation shall be included as part of the annual report submitted to Ecology. Each annual report shall include a summary of relevant SWMP and Appendix 2 activities conducted in the TMDL area to address the applicable TMDL parameter(s).

B. For applicable TMDLs not listed in Appendix 2, compliance with this Permit shall constitute compliance with those TMDLs.

C. For TMDLs that are approved by EPA after this Permit is issued, Ecology may establish TMDL related permit requirements through future permit modification if Ecology determines implementation of actions, monitoring or reporting necessary to demonstrate reasonable further progress toward achieving TMDL waste load allocations, and other targets, are not occurring and shall be implemented during the term of this Permit or when this Permit is reissued. Permittees are encouraged to

participate in development of TMDLs within their jurisdiction and to begin implementation.

S8. MONITORING AND ASSESSMENT

A. All Permittees including Secondary Permittees shall provide, in each annual report, a description of any stormwater monitoring or stormwater-related studies conducted by the Permittee during the reporting period. If other stormwater monitoring or stormwater-related studies were conducted on behalf of the Permittee during the reporting period, or if stormwater-related investigations conducted by other entities were reported to the Permittee during the reporting period, a brief description of the type of information gathered or received shall be included in the annual report.

Permittees are not required to provide descriptions of any monitoring, studies, or analyses conducted as part of the Regional Stormwater Monitoring Program (RSMP) in annual reports. If a Permittee conducts independent monitoring in accordance with requirements in S8.B or S8.C below, annual reporting of such monitoring must follow the requirements specified in those sections.

B. Status and trends monitoring. By December 1, 2013, each city and county Permittee listed in S1.D.2.a(i) and S1.D.2.a(ii) located in Clallam, Island, King, Kitsap, Pierce, Skagit, Snohomish, Thurston, or Whatcom County shall notify Ecology in writing which of the following two options for status and trends monitoring the Permittee chooses to carry out during this permit cycle. Either option will fully satisfy the Permittee's obligations under this section (S8.B). Each Permittee shall select a single option for the duration of this permit term.

1. **Status and Trends Monitoring Option #1**: Each Permittee that chooses this option shall pay into a collective fund to implement RSMP small streams and marine nearshore status and trends monitoring in Puget Sound. The payments into the collective fund are due to Ecology annually beginning August 15, 2014. The payment amounts are (Permittees are listed alphabetically, by county):

Permittee	Annual payment amount	Permittee	Annual payment amount
Clallam Co.	N/A	Pierce Co.	N/A
Port Angeles	$4,732	Bonney Lake	$4,075
Island Co.	N/A	Buckley	$1,129
Oak Harbor	$5,719	DuPont	$1,936
King Co.	N/A	Edgewood	$2,350
Algona	$678	Fife	$2,005

Auburn	$16,914	Fircrest	$1,549
Bellevue	$30,009	Gig Harbor	$1,836
Black Diamond	$1,023	Lakewood	$14,367
Bothell	$8,163	Milton	$1,597
Burien	$11,238	Orting	$1,525
Clyde Hill	$695	Puyallup	$9,498
Covington	$4,307	Steilacoom	$1,538
Des Moines	$7,152	Sumner	$2,217
Duvall	$1,463	University Place	$7,704
Enumclaw	$2,806	Skagit Co.	$1,257
Federal Way	$21,673	Burlington	$2,194
Issaquah	$6,632	Anacortes	$4,102
Kenmore	$5,042	Mount Vernon	$7,574
Kent	$27,441	Sedro Woolley	$2,452
Kirkland	$12,116	Snohomish Co.	N/A
Lake Forest Park	$3,135	Arlington	$4,219
Maple Valley	$5,648	Brier	$1,585
Medina	$728	Edmonds	$9,987
Mercer Island	$5,589	Everett	$25,419
Newcastle	$2,431	Granite Falls	$824
Normandy Park	$1,597	Lake Stevens	$6,512
Pacific	$1,540	Lynnwood	$8,829
Redmond	$13,143	Marysville	$14,172
Renton	$21,055	Mill Creek	$4,566
Sammamish	$10,028	Monroe	$4,073
SeaTac	$6,322	Mountlake Terrace	$5,118
Shoreline	$13,327	Mukilteo	$4,920
Tukwila	$4,444	Snohomish	$2,276
Woodinville	$2,771	Thurston Co.	$12,841
Kitsap Co.	$17,133	Lacey	$9,799
Bainbridge Island	$5,709	Olympia	$11,110
Bremerton	$8,837	Tumwater	$4,095
Port Orchard	$2,664	Whatcom Co.	$3,714

Poulsbo	$2,187	Bellingham	$18,936
		Ferndale	$2,737

Or

2. **Status and Trends Monitoring Option #2**: Each Permittee that chooses this option shall conduct status and trends monitoring as follows:

   a. Beginning no later than October 31, 2014, conduct wadeable stream water quality, benthos, habitat, and sediment chemistry monitoring according to the Ecology-approved Quality Assurance Project Plan (QAPP) for RSMP Small Streams Status and Trends Monitoring.

      i. Permittees with population less than 10,000 in the permit coverage area shall conduct this monitoring at the first two qualified monitoring locations (as listed sequentially among the potential monitoring locations defined in the RSMP QAPP) that are located within the jurisdiction's boundaries. Counties shall monitor the first location inside UGA boundaries and the first location outside UGA boundaries.

      ii. Permittees with population equal to or greater than 10,000 and fewer than 50,000 in the permit coverage area shall conduct this monitoring at the first four qualified monitoring locations (as listed sequentially among the potential monitoring locations defined in the RSMP QAPP) that are located within the jurisdiction's boundaries. Counties shall monitor the first two locations inside UGA boundaries and the first two locations outside UGA boundaries.

      iii. Permittees with population equal to or greater than 50,000 in the permit coverage area shall conduct this monitoring at the first eight qualified monitoring locations (as listed sequentially among the potential monitoring locations defined in the RSMP QAPP) that are located within the jurisdiction's boundaries. Counties shall monitor the first four locations inside UGA boundaries and the first four locations outside UGA boundaries.

      Permittees with population equal to or greater than 50,000 in the permit coverage area and located entirely inland (*i.e.*, having no Puget Sound shoreline boundary) shall conduct this monitoring at an additional four monitoring locations (as listed sequentially among the potential monitoring locations defined in the RSMP QAPP), for a total of 12 monitoring locations.

      If fewer than the total required number (8 or 12) of monitoring locations located in the Permittees' coverage area meet the criteria for

sampling defined in the RSMP QAPP, then the Permittee shall conduct this monitoring at all of the monitoring locations that meet the criteria.

And

b. Beginning no later than October 1, 2015, Permittees with Puget Sound shoreline shall conduct sediment chemistry, mussel, and bacteria monitoring according to the Ecology-approved QAPPs for RSMP Marine Nearshore Status and Trends Monitoring.

   i. Permittees with population less than 10,000 shall conduct this monitoring at the first two qualified monitoring locations each, for sediment and for mussels and bacteria (as listed sequentially among the potential monitoring locations defined in the RSMP QAPPs), that are located adjacent to the jurisdiction's Puget Sound shoreline boundary.

   ii. Permittees with population equal to or greater than 10,000 and fewer than 50,000 in the permit coverage area shall conduct this monitoring at the first four qualified monitoring locations each, for sediment and for mussels and bacteria (as listed sequentially among the potential monitoring locations defined in the RSMP QAPPs), that are located adjacent to the jurisdiction's Puget Sound shoreline boundary.

   iii. Permittees with population equal to or greater than 50,000 in the permit coverage area shall conduct this monitoring at the first six qualified monitoring locations each, for sediment and for mussels and bacteria (as listed sequentially among the potential monitoring locations defined in the RSMP QAPPs), that are located adjacent to the jurisdiction's Puget Sound shoreline boundary.

And

c. Data and analyses shall be reported annually in accordance with the Ecology-approved QAPPs.

C. Stormwater management program effectiveness studies. By December 1, 2013, each city and county Permittee listed in S1.D.2.a(i) and S1.D.2.a(ii) shall notify Ecology in writing which of the following two options for effectiveness studies the Permittee chooses to carry out during this permit cycle. Either option will fully satisfy the Permittee's obligations under this section (S8.C). Each Permittee shall select a single option for the duration of this permit term.

1. **Effectiveness Studies Option #1**: Each Permittee that chooses this option shall pay into a collective fund to implement RSMP effectiveness studies. The payments into the collective fund are due to Ecology annually beginning August

15, 2014. The payment amounts are (Permittees are listed alphabetically, by county):

Permittee	Annual payment amount	Permittee	Annual payment amount
Clallam Co.	N/A	Lewis Co.	N/A
Port Angeles	$7,885	Centralia	$6,334
Clark Co.	N/A	Pierce Co.	N/A
Battle Ground	$7,079	Bonney Lake	$6,790
Camas	$7,002	Buckley	$1,882
Vancouver	$67,335	DuPont	$3,226
Washougal	$5,716	Edgewood	$3,916
Cowlitz Co.	$1,384	Fife	$3,340
Kelso	$4,793	Fircrest	$2,581
Longview	$14,687	Gig Harbor	$3,059
Grays Harbor Co.	N/A	Lakewood	$23,938
Aberdeen	$6,693	Milton	$2,661
Island Co.	N/A	Orting	$2,541
Oak Harbor	$9,528	Puyallup	$15,826
King Co.	N/A	Steilacoom	$2,563
Algona	$1,129	Sumner	$3,694
Auburn	$28,182	University Place	$12,836
Bellevue	$50,001	Skagit Co.	$2,094
Black Diamond	$1,705	Burlington	$3,655
Bothell	$13,601	Anacortes	$6,835
Burien	$18,724	Mount Vernon	$12,620
Clyde Hill	$1,157	Sedro Woolley	$4,085
Covington	$7,177	Snohomish Co.	N/A
Des Moines	$11,916	Arlington	$7,030
Duvall	$2,437	Brier	$2,640
Enumclaw	$4,675	Edmonds	$16,640

Federal Way	$36,111	Everett	$42,352
Issaquah	$11,050	Granite Falls	$1,373
Kenmore	$8,401	Lake Stevens	$10,850
Kent	$45,721	Lynnwood	$14,711
Kirkland	$20,187	Marysville	$23,613
Lake Forest Park	$5,224	Mill Creek	$7,608
Maple Valley	$9,410	Monroe	$6,786
Medina	$1,212	Mountlake Terrace	$8,527
Mercer Island	$9,313	Mukilteo	$8,198
Newcastle	$4,050	Snohomish	$3,792
Normandy Park	$2,661	Thurston Co.	$21,395
Pacific	$2,565	Lacey	$16,326
Redmond	$21,899	Olympia	$18,511
Renton	$35,082	Tumwater	$6,823
Sammamish	$16,709	Whatcom Co.	$6,188
SeaTac	$10,533	Bellingham	$31,550
Shoreline	$22,205	Ferndale	$4,561
Tukwila	$7,405		
Woodinville	$4,618		
Kitsap Co.	$28,547		
Bainbridge Island	$9,512		
Bremerton	$14,724		
Port Orchard	$4,439		
Poulsbo	$3,643		

Or

2. **Effectiveness Studies Option #2**: Each Permittee that chooses this option shall conduct stormwater discharge monitoring in accordance with Appendix 9 and the following:

   a. By February 2, 2014, each Permittee shall submit to Ecology a draft stormwater discharge monitoring QAPP for review and approval. If Ecology does not request changes within 90 days, the draft QAPP is considered

approved. Final QAPPs shall be submitted to Ecology as soon as possible following finalization.

i. Each Permittee with population fewer than 10,000 in the permit coverage area shall conduct stormwater discharge monitoring at one discharge monitoring location.

ii. Each Permittee with population equal to or greater than 10,000 but fewer than 50,000 in the permit coverage area shall conduct stormwater discharge monitoring at two discharge monitoring locations.

iii. Each Permittee with population equal to or greater than 50,000 but fewer than 100,000 in the permit coverage area shall conduct stormwater discharge monitoring at three discharge monitoring locations.

iv. Each Permittee with population 100,000 or more in the permit coverage area shall conduct stormwater discharge monitoring at four discharge monitoring locations.

b. Permittees shall document in the QAPP why selected discharge monitoring locations are of interest for long term stormwater discharge monitoring and associated stormwater management program effectiveness evaluations. Permittees are encouraged to monitor at locations chosen and submitted in the annual reports that were due March 31, 2011.

c. Flow monitoring at discharge monitoring locations shall be implemented beginning no later than October 1, 2014. Stormwater discharge monitoring shall be fully implemented no later than October 1, 2015. All monitoring shall be conducted in accordance with an Ecology-approved QAPP.

D. Source identification and diagnostic monitoring. Each city and county Permittee listed in S1.D.2.a(i) and S1.D.2.a(ii) shall pay into a collective fund to implement the RSMP Source Identification Information Repository (SIDIR). The payments into the collective fund are due to Ecology annually beginning August 15, 2014. The payment amounts are (Permittees are listed alphabetically, by county):

Permittee	Annual payment amount	Permittee	Annual payment amount
Clallam Co.	N/A	Lewis Co.	N/A
Port Angeles	$731	Centralia	$587
Clark Co.	N/A	Pierce Co.	N/A

Battle Ground	$657	Bonney Lake	$630
Camas	$649	Buckley	$175
Vancouver	$6,245	DuPont	$299
Washougal	$530	Edgewood	$363
Cowlitz Co.	$128	Fife	$310
Kelso	$444	Fircrest	$239
Longview	$1,362	Gig Harbor	$284
Grays Harbor Co.	N/A	Lakewood	$2,220
Aberdeen	$621	Milton	$247
Island Co.	N/A	Orting	$236
Oak Harbor	$884	Puyallup	$1,468
King Co.	N/A	Steilacoom	$238
Algona	$105	Sumner	$343
Auburn	$2,614	University Place	$1,190
Bellevue	$4,637	Skagit Co.	$194
Black Diamond	$158	Burlington	$339
Bothell	$1,261	Anacortes	$634
Burien	$1,736	Mount Vernon	$1,170
Clyde Hill	$107	Sedro Woolley	$379
Covington	$666	Snohomish Co.	N/A
Des Moines	$1,105	Arlington	$652
Duvall	$226	Brier	$245
Enumclaw	$434	Edmonds	$1,543
Federal Way	$3,349	Everett	$3,928
Issaquah	$1,025	Granite Falls	$127
Kenmore	$779	Lake Stevens	$1,006
Kent	$4,240	Lynnwood	$1,364
Kirkland	$1,872	Marysville	$2,190
Lake Forest Park	$484	Mill Creek	$706
Maple Valley	$873	Monroe	$629
Medina	$112	Mountlake Terrace	$791

Mercer Island	$864	Mukilteo	$760
Newcastle	$376	Snohomish	$352
Normandy Park	$247	Thurston Co.	$1,984
Pacific	$238	Lacey	$1,514
Redmond	$2,031	Olympia	$1,717
Renton	$3,253	Tumwater	$633
Sammamish	$1,550	Whatcom Co.	$574
SeaTac	$977	Bellingham	$2,926
Shoreline	$2,059	Ferndale	$423
Tukwila	$687		
Woodinville	$428		
Kitsap Co.	$2,647		
Bainbridge Island	$882		
Bremerton	$1,365		
Port Orchard	$412		
Poulsbo	$338		

S9. REPORTING REQUIREMENTS

A. No later than March 31 of each year beginning in 2015, each Permittee shall submit an annual report. The reporting period for the first annual report will be from January 1, 2014 through December 31, 2014. The reporting period for all subsequent annual reports will be the previous calendar year unless otherwise specified.

Permittees must submit annual reports electronically using Ecology's Water Quality Permitting Portal (WQWebPortal) available on Ecology's website at: http://www.ecy.wa.gov/programs/wq/permits/paris/portal.html unless otherwise directed by Ecology.

Permittees unable to submit electronically through Ecology's WQWebPortal must contact Ecology to request a waiver and obtain instructions on how to submit an annual report in an alternative format.

B. Each Permittee is required to keep all records related to this permit and the SWMP for at least five years.

C. Each Permittee shall make all records related to this permit and the Permittee's SWMP available to the public at reasonable times during business hours. The

Permittee will provide a copy of the most recent annual report to any individual or entity, upon request.

1. A reasonable charge may be assessed by the Permittee for making photocopies of records.

2. The Permittee may require reasonable advance notice of intent to review records related to this Permit.

D. The annual report for cities, towns, and counties

Each annual report shall include the following:

1. A copy of the Permittee's current SWMP Plan as required by S5.A.2.

2. Submittal of the annual report form as provided by Ecology pursuant to S9.A, describing the status of implementation of the requirements of this permit during the reporting period.

3. Attachments to the annual report form including summaries, descriptions, reports, and other information as required, or as applicable, to meet the requirements of this permit during the reporting period. Refer to Appendix 3 for annual report questions.

4. If applicable, notice that the MS4 is relying on another governmental entity to satisfy any of the obligations under this permit.

5. Certification and signature pursuant to G19.D, and notification of any changes to authorization pursuant to G19.C.

6. A notification of any annexations, incorporations or jurisdictional boundary changes resulting in an increase or decrease in the Permittee's geographic area of permit coverage during the reporting period.

E. Annual report for Secondary Permittees

Each annual report shall include the following:

1. Submittal of the annual report form as provided by Ecology pursuant to S9.A, describing the status of implementation of the requirements of this permit during the reporting period.

2. Attachments to the annual report form including summaries, descriptions, reports, and other information as required, or as applicable, to meet the requirements of

this permit during the reporting period. Refer to Appendix 4 for annual report questions.

3. If applicable, notice that the MS4 is relying on another governmental entity to satisfy any of the obligations under this permit.

4. Certification and signature pursuant to G19.D, and notification of any changes to authorization pursuant to G19.C.

5. A notification of any jurisdictional boundary changes resulting in an increase or decrease in the Secondary Permittee's geographic area of permit coverage during the reporting period.

GENERAL CONDITIONS

G1. DISCHARGE VIOLATIONS

All discharges and activities authorized by this Permit shall be consistent with the terms and conditions of this Permit.

G2. PROPER OPERATION AND MAINTENANCE

The Permittee shall at all times properly operate and maintain all facilities and systems of collection, treatment, and control (and related appurtenances) which are installed or used by the Permittee for pollution control to achieve compliance with the terms and conditions of this Permit.

G3. NOTIFICATION OF DISCHARGE, INCLUDING SPILLS

If a Permittee has knowledge of a discharge, including spills, into or from a MS4 which could constitute a threat to human health, welfare, or the environment, the Permittee shall

A. Take appropriate action to correct or minimize the threat to human health, welfare and/or the environment.

B. Notify the Ecology regional office and other appropriate spill response authorities immediately but in no case later than within 24 hours of obtaining that knowledge. Ecology's Northwest Regional Office 24-hour number is 425-649-7000 and Ecology's Southwest Regional Office the number is 360-407-6300.

C. Immediately report spills or other discharges which might cause bacterial contamination of marine waters, such as discharges resulting from broken sewer lines and failing onsite septic systems, to the Ecology regional office and to the Department of Health, Shellfish Program. The Department of Health's shellfish number is 360-236-3330 (business hours) or 360-789-8962 (24-hours).

D. Immediately report spills or discharges of oils or hazardous substances to the Ecology regional office and to the Washington Emergency Management Division at 1-800-258-5990.

G4. BYPASS PROHIBITED

The intentional bypass of stormwater from all or any portion of a stormwater treatment BMP whenever the design capacity of the treatment BMP is not exceeded, is prohibited unless the following conditions are met:

A. Bypass is: (1) unavoidable to prevent loss of life, personal injury, or severe property damage; or (2) necessary to perform construction or maintenance-related activities essential to meet the requirements of the Clean Water Act (CWA); and

B. There are no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated stormwater, or maintenance during normal dry

periods.

"Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass.

G5. RIGHT OF ENTRY

The Permittee shall allow an authorized representative of Ecology, upon the presentation of credentials and such other documents as may be required by law at reasonable times:

A. To enter upon the Permittee's premises where a discharge is located or where any records must be kept under the terms and conditions of this Permit;

B. To have access to, and copy at reasonable cost and at reasonable times, any records that must be kept under the terms of the Permit;

C. To inspect at reasonable times any monitoring equipment or method of monitoring required in the Permit;

D. To inspect at reasonable times any collection, treatment, pollution management, or discharge facilities; and

E. To sample at reasonable times any discharge of pollutants.

G6. DUTY TO MITIGATE

The Permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this Permit which has a reasonable likelihood of adversely affecting human health or the environment.

G7. PROPERTY RIGHTS

This permit does not convey any property rights of any sort, or any exclusive privilege.

G8. COMPLIANCE WITH OTHER LAWS AND STATUTES

Nothing in the Permit shall be construed as excusing the Permittee from compliance with any other applicable federal, state, or local statutes, ordinances, or regulations.

G9. MONITORING

A. Representative Sampling:

Samples and measurements taken to meet the requirements of this Permit shall be representative of the volume and nature of the monitored discharge, including

representative sampling of any unusual discharge or discharge condition, including bypasses, upsets, and maintenance-related conditions affecting effluent quality.

B. Records Retention:

The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, copies of all reports required by this Permit, and records of all data used to complete the application for this permit, for a period of at least five years. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the Permittee or when requested by the Ecology. On request, monitoring data and analysis shall be provided to Ecology.

C. Recording of Results:

For each measurement or sample taken, the Permittee shall record the following information: (1) the date, exact place and time of sampling; (2) the individual who performed the sampling or measurement; (3) the dates the analyses were performed; (4) who performed the analyses; (5) the analytical techniques or methods used; and (6) the results of all analyses.

D. Test Procedures:

All sampling and analytical methods used to meet the monitoring requirements in this Permit shall conform to the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136, unless otherwise specified in this permit or approved in writing by Ecology.

E. Flow Measurement:

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements is consistent with the accepted industry standard for that type of device. Frequency of calibration shall be in conformance with manufacturer's recommendations or at a minimum frequency of at least one calibration per year. Calibration records should be maintained for a minimum of three years.

F. Lab Accreditation:

All monitoring data, except for flow, temperature, conductivity, pH, total residual chlorine, and other exceptions approved by Ecology, shall be prepared by a laboratory registered or accredited under the provisions of, Accreditation of Environmental Laboratories, chapter 173-50 WAC. Soils and hazardous waste data are exempted

from this requirement pending accreditation of laboratories for analysis of these media by Ecology. Quick methods of field detection of pollutants including nutrients, surfactants, salinity, and other parameters are exempted from this requirement when the purpose of the sampling is identification and removal of a suspected illicit discharge.

G. Additional Monitoring:

Ecology may establish specific monitoring requirements in addition to those contained in this permit by administrative order or permit modification.

G10. REMOVED SUBSTANCES

With the exception of decant from street waste vehicles, the Permittee shall not allow collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of stormwater to be resuspended or reintroduced to the storm sewer system or to waters of the state. Decant from street waste vehicles resulting from cleaning stormwater facilities may be reintroduced only when other practical means are not available and only in accordance with the Street Waste Disposal Guidelines in Appendix 6. Solids generated from maintenance of the MS4 may be reclaimed, recycled, or reused when allowed by local codes and ordinances. Soils that are identified as contaminated pursuant to chapter 173-350 WAC shall be disposed at a qualified solid waste disposal facility (see Appendix 6).

G11. SEVERABILITY

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Permit shall not be affected thereby.

G12. REVOCATION OF COVERAGE

The director may terminate coverage under this General Permit in accordance with chapter 43.21B RCW and chapter 173-226 WAC. Cases where coverage may be terminated include, but are not limited to the following:

A. Violation of any term or condition of this general permit;

B. Obtaining coverage under this general permit by misrepresentation or failure to disclose fully all relevant facts;

C. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;

D. A determination that the permitted activity endangers human health or the environment, or contributes significantly to water quality standards violations;

E. Failure or refusal of the Permittee to allow entry as required in chapter 90.48.090 RCW;

F. Nonpayment of permit fees assessed pursuant to chapter 90.48.465 RCW;

Revocation of coverage under this general permit may be initiated by Ecology or requested by any interested person.

G13. TRANSFER OF COVERAGE

The director may require any discharger authorized by this General Permit to apply for and obtain an individual permit in accordance with chapter 43.21B RCW and chapter 173-226 WAC.

G14. GENERAL PERMIT MODIFICATION AND REVOCATION

This General Permit may be modified, revoked and reissued, or terminated in accordance with the provisions of WAC 173-226-230. Grounds for modification, revocation and reissuance, or termination include, but are not limited to the following:

A. A change occurs in the technology or practices for control or abatement of pollutants applicable to the category of dischargers covered under this General Permit;

B. Effluent limitation guidelines or standards are promulgated pursuant to the CWA or chapter 90.48 RCW, for the category of dischargers covered under this General Permit;

C. A water quality management plan containing requirements applicable to the category of dischargers covered under this General Permit is approved; or

D. Information is obtained which indicates that cumulative effects on the environment from dischargers covered under this General Permit are unacceptable.

E. Changes in state law that reference this permit.

G15. REPORTING A CAUSE FOR MODIFICATION OR REVOCATION

A Permittee who knows or has reason to believe that any activity has occurred or will occur which would constitute cause for modification or revocation and reissuance under Condition G12, G14, or 40 CFR 122.62 must report such plans, or such information, to Ecology so that a decision can be made on whether action to modify, or revoke and reissue this Permit will be required. Ecology may then require submission of a new or amended application. Submission of such application does not relieve the Permittee of the duty to comply with this Permit until it is modified or reissued.

G16. APPEALS

A. The terms and conditions of this General Permit, as they apply to the appropriate class of dischargers, are subject to appeal within thirty days of issuance of this General Permit, in accordance with chapter 43.21B RCW, and chapter 173-226 WAC.

B. The terms and conditions of this General Permit, as they apply to an individual discharger, are appealable in accordance with chapter 43.21B RCW within thirty days of the effective date of coverage of that discharger. Consideration of an appeal of General Permit coverage of an individual discharger is limited to the General Permit's applicability or nonapplicability to that individual discharger.

C. The appeal of General Permit coverage of an individual discharger does not affect any other dischargers covered under this General Permit. If the terms and conditions of this General Permit are found to be inapplicable to any individual discharger(s), the matter shall be remanded to Ecology for consideration of issuance of an individual permit or permits.

D. Modifications of this Permit are appealable in accordance with chapter 43.21B RCW and chapter 173-226 WAC.

G17. PENALTIES

40 CFR 122.41(a)(2) and (3), 40 CFR 122.41(j)(5), and 40 CFR 122.41(k)(2) are hereby incorporated into this Permit by reference.

G18. DUTY TO REAPPLY

The Permittee shall apply for permit renewal at least 180 days prior to the specified expiration date of this permit.

G19. CERTIFICATION AND SIGNATURE

All formal submittals to Ecology shall be signed and certified.

A. All permit applications shall be signed by either a principal executive officer or ranking elected official.

B. All formal submittals required by this Permit shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to Ecology, and

2. The authorization specifies either an individual or a position having responsibility for the overall development and implementation of the stormwater management program. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

C. Changes to authorization. If an authorization under condition G19.B.2 is no longer accurate because a different individual or position has responsibility for the overall development and implementation of the stormwater management program, a new authorization satisfying the requirements of condition G19.B.2 must be submitted to Ecology prior to or together with any reports, information, or applications to be signed by an authorized representative.

D. Certification. Any person signing a formal submittal under this Permit shall make the following certification:

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

G20. NON-COMPLIANCE NOTIFICATION

In the event a Permittee is unable to comply with any of the terms and conditions of this Permit, the Permittee must:

A. Notify Ecology of the failure to comply with the permit terms and conditions in writing within 30 days of becoming aware that the non-compliance has occurred. The written notification must include all of the following:

1. A description of the non-compliance, including dates.

2. Beginning and end dates of the non-compliance, and if the compliance has not been corrected, the anticipated date of correction.

3. Steps taken or planned to reduce, eliminate, or prevent reoccurrence of the non-compliance.

B. Take appropriate action to stop or correct the condition of non-compliance.

G21. UPSETS

Permittees must meet the conditions of 40 CFR 122.41(n) regarding "Upsets." The conditions are as follows:

A. Definition. “Upset” means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

B. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph (C) of this condition are met. Any determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, will not constitute final administrative action subject to judicial review.

C. Conditions necessary for demonstration of upset. A Permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and that the Permittee can identify the cause(s) of the upset;

2. The permitted facility was at the time being properly operated; and

3. The Permittee submitted notice of the upset as required in 40 CFR 122.41(l)(6)(ii)(B) (24-hour notice of noncompliance).

4. The Permittee complied with any remedial measures required under 40 CFR 122.41(d) (Duty to Mitigate).

D. Burden of proof. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof.

DEFINITIONS AND ACRONYMS

This section includes definitions for terms used in the body of the permit and in all the appendices except Appendix 1. Terms defined in Appendix 1 are necessary to implement requirements related to Appendix 1.

40 CFR means Title 40 of the Code of Federal Regulations, which is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government.

AKART means all known, available, and reasonable methods of prevention, control and treatment. See also State Water Pollution Control Act, chapter 90.48.010 RCW and chapter 90.48.520 RCW.

All known, available and reasonable methods of prevention, control and treatment refers to the State Water Pollution Control Act, chapter 90.48.010 RCW and chapter 90.48.520 RCW.

Applicable TMDL means a TMDL which has been approved by EPA on or before the issuance date of this Permit, or prior to the date that Ecology issues coverage under this Permit, whichever is later.

Beneficial Uses means uses of waters of the state, which include but are not limited to use for domestic, stock watering, industrial, commercial, agricultural, irrigation, mining, fish and wildlife maintenance and enhancement, recreation, generation of electric power and preservation of environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters of the state.

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

BMP means Best Management Practice.

Bypass means the diversion of stormwater from any portion of a stormwater treatment facility.

Census defined urban area means Urbanized Area.

Circuit means a portion of a MS4 discharging to a single point or serving a discrete area determined by traffic volumes, land use, topography or the configuration of the MS4.

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, S7 Compliance with Total Maximum Daily Load Requirements, or S8 Monitoring of this permit.

Conveyance system means that portion of the municipal separate storm sewer system designed or used for conveying stormwater.

Co-Permittee means an owner or operator of an MS4 which is in a cooperative agreement with at least one other applicant for coverage under this permit. A Co-Permittee is an owner or operator of a regulated MS4 located within or in proximity to another regulated MS4. A Co-Permittee is only responsible for permit conditions relating to discharges from the MS4 the Co-Permittee owns or operates. See also 40 CFR 122.26(b)(1)

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*.).

Director means the Director of the Washington State Department of Ecology, or an authorized representative.

Discharge Point means the location where a discharge leaves the permittee's MS4 to another permittee's MS4 or a private or public stormwater conveyance. "Discharge point" also includes the location where a discharge leaves the permittee's MS4 and discharges to ground, except where such discharge occurs via an outfall.

Entity means a governmental body, or a public or private organization.

EPA means the U.S. Environmental Protection Agency.

General Permit means a permit which covers multiple dischargers of a point source category within a designated geographical area, in lieu of individual permits being issued to each discharger.

Ground water means water in a saturated zone or stratum beneath the surface of the land or below a surface water body. Refer to chapter 173-200 WAC.

Hazardous substance means any liquid, solid, gas, or sludge, including any material, substance, product, commodity, or waste, regardless of quantity, that exhibits any of the physical, chemical, or biological properties described in WAC 173-303-090 or WAC 173-303-100.

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 on a long-term basis.

Highway means a main public road connecting towns and cities.

Hydraulically near means runoff from the site discharges to the sensitive feature without significant natural attenuation of flows that allows for suspended solids removal. See Appendix 7 Determining Construction Site Sediment Damage Potential for a more detailed definition.

Hyperchlorinated means water that contains more than 10 mg/Liter chlorine.

Illicit connection means any infrastructure connection to the MS4 that is not intended, permitted or used for collecting and conveying stormwater or non-stormwater discharges allowed as specified in this permit (S5.C.3 and S6.D.3). Examples include sanitary sewer connections,

floor drains, channels, pipelines, conduits, inlets, or outlets that are connected directly to the MS4.

Illicit discharge means any discharge to a MS4 that is not composed entirely of stormwater or of non-stormwater discharges allowed as specified in this permit (S5.C.3 and S6.D.3).

Impervious surface means a non-vegetated surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A non-vegetated surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or stormwater areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater.

Land disturbing activity means any activity that results in a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land disturbing activities include, but are not limited to clearing, grading, filling and excavation. Compaction that is associated with stabilization of structures and road construction shall also be considered land disturbing activity. Vegetation maintenance practices, including landscape maintenance and gardening, are not considered land disturbing activity. Stormwater facility maintenance is not considered land disturbing activity if conducted according to established standards and procedures.

LID means Low Impact Development.

LID BMP means low impact development best management practices.

LID Principles means land use management strategies that emphasize conservation, use of on-site natural features, and site planning to minimize impervious surfaces, native vegetation loss, and stormwater runoff.

Low Impact Development means a stormwater and land use management strategy that strives to mimic pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration by emphasizing conservation, use of on-site natural features, site planning, and distributed stormwater management practices that are integrated into a project design.

Low impact development best management practices means distributed stormwater management practices, integrated into a project design, that emphasize pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration. LID BMPs include, but are not limited to, bioretention,rain gardens, permeable pavements, roof downspout controls, dispersion, soil quality and depth, vegetated roofs, minimum excavation foundations, and water re-use.

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 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.

MS4 means municipal separate storm sewer system.

Municipal Separate Storm Sewer System 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, stormwater, 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 Washington State.

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

(iii) Which is not a combined sewer;

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

(v) Which is defined as "large" or "medium" or "small" or otherwise designated by Ecology pursuant to 40 CFR 122.26.

National Pollutant Discharge Elimination System 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.

Native vegetation means vegetation comprised of plant species, other than noxious weeds, that are indigenous to the coastal region of the Pacific Northwest and which reasonably could have been expected to naturally occur on the site. Examples include trees such as Douglas Fir, western hemlock, western red cedar, alder, big-leaf maple; shrubs such as willow, elderberry, salmonberry, and salal; and herbaceous plants such as sword fern, foam flower, and fireweed.

New development means land disturbing activities, including Class IV General Forest Practices that are conversions from timber land to other uses; structural development, including construction or installation of a building or other structure; creation of hard surfaces; and subdivision, short subdivision and binding site plans, as defined and applied in chapter 58.17

RCW. Projects meeting the definition of redevelopment shall not be considered new development. Refer to Appendix 1 for a definition of hard surfaces.

New Permittee means a city, town, or county that is subject to the *Western Washington Municipal Stormwater General Permit* and was not subject to the permit prior to August 1, 2013.

New Secondary Permittee means a Secondary Permittee that is covered under a municipal stormwater general permit and was not covered by the permit prior to August 1, 2013.

NOI means Notice of Intent.

Notice of Intent means the application for, or a request for coverage under a General Permit pursuant to WAC 173-226-200.

Notice of Intent for Construction Activity means the application form for coverage under the *Construction Stormwater General Permit.*

Notice of Intent for Industrial Activity means the application form for coverage under the *General Permit for Stormwater Discharges Associated with Industrial Activities*.

NPDES means National Pollutant Discharge Elimination System.

Outfall means a point source as defined by 40 CFR 122.2 at the point where a discharge leaves the permittee's MS4 and enters a receiving waterbody or receiving waters. Outfall also includes the permittee's MS4 facilities/BMPs designed to infiltrate stormwater.**Permittee** unless otherwise noted, the term "Permittee" includes city, town, or county Permittee, Co-Permittee, New Permittee, Secondary Permittee, and New Secondary Permittee.

Physically Interconnected means that one MS4 is connected to another storm sewer system in such a way that it allows for direct discharges to the second system. For example, the roads with drainage systems and municipal streets of one entity are physically connected directly to a storm sewer system belonging to another entity.

Project site means that portion of a property, properties, or right-of-ways subject to land disturbing activities, new hard surfaces, or replaced hard surfaces. Refer to Appendix 1 for a definition of hard surfaces.

QAPP means Quality Assurance Project Plan.

Qualified Personnel means someone who has had professional training in the aspects of stormwater management for which they are responsible and are under the functional control of the Permittee. Qualified Personnel may be staff members, contractors, or volunteers.

Quality Assurance Project Plan means a document that describes the objectives of an environmental study and the procedures to be followed to achieve those objectives.

RCW means the Revised Code of Washington State.

Receiving waterbody or **receiving waters** means naturally and/or reconstructed naturally occurring surface water bodies, such as creeks, streams, rivers, lakes, wetlands, estuaries, and marine waters, to which a discharge occurs via an outfall or via sheet/dispersed flow.

Receiving waters also include ground water to which a discharge occurs via facilities/BMPs designed to infiltrate stormwater.

Redevelopment means, on a site that is already substantially developed (i.e., has 35% or more of existing hard surface coverage), the creation or addition of hard surfaces; the expansion of a building footprint or addition or replacement of a structure; structural development including construction, installation or expansion of a building or other structure; replacement of hard surface that is not part of a routine maintenance activity; and land disturbing activities. Refer to Appendix 1 for a definition of hard surfaces.

Regional Stormwater Monitoring Program means, for all of western Washington, a stormwater-focused monitoring and assessment program consisting of these components: status and trends monitoring in small streams and marine nearshore areas, stormwater management program effectiveness studies, and a source identification information repository (SIDIR). The priorities and scope for the RSMP are set by a formal stakeholder group. For this permit term, RSMP status and trends monitoring will be conducted in the Puget Sound basin only.

Regulated Small Municipal Separate Storm Sewer System means a Municipal Separate Storm Sewer System which is automatically designated for inclusion in the Phase II stormwater permitting program by its location within an Urbanized Area, or by designation by Ecology and is not eligible for a waiver or exemption under S1.C.

RSMP means Regional Stormwater Monitoring Program.

Runoff is water that travels across the land surface and discharges to water bodies either directly or through a collection and conveyance system. See also "Stormwater."

Secondary Permittee is an operator of a regulated small MS4 which is not a city, town or county. Secondary Permittees include special purpose districts and other public entities that meet the criteria in S1.B.

Sediment/Erosion-Sensitive Feature means an area subject to significant degradation due to the effect of construction runoff, or areas requiring special protection to prevent erosion. See Appendix 7 Determining Construction Site Sediment Transport Potential for a more detailed definition.

Shared water bodies means water bodies, including downstream segments, lakes and estuaries that receive discharges from more than one Permittee.

SIDIR means Source Identification Information Repository.

Significant contributor means a discharge that contributes a loading of pollutants considered to be sufficient to cause or exacerbate the deterioration of receiving water quality or instream habitat conditions.

Small Municipal Separate Storm Sewer System means an MS4 that is 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).

Source control BMP means a structure or operation that is intended to prevent pollutants from coming into contact with stormwater through physical separation of areas or careful management of activities that are sources of pollutants. The *SWMMWW* separates source control BMPs into two types. Structural Source Control BMPs are physical, structural, or mechanical devices, or facilities that are intended to prevent pollutants from entering stormwater. Operational BMPs are non-structural practices that prevent or reduce pollutants from entering stormwater. See Volume IV of the *SWMMWW* for details.

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

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 Program means a set of actions and activities designed to reduce the discharge of pollutants from the MS4 to the MEP and to protect water quality, and comprising the components listed in S5 (for cities, towns, and counties) or S6 (for Secondary Permittees) of this Permit and any additional actions necessary to meet the requirements of applicable TMDLs pursuant to S7 *Compliance with TMDL Requirements,* and S8 *Monitoring and Assessment*.

Stormwater Treatment and Flow Control BMPs/Facilities means detention facilities, treatment BMPs/facilities, bioretention, vegetated roofs, and permeable pavements that help meet Appendix 1 Minimum Requirements #6 (treatment), #7 (flow control), or both.

SWMMWW or Stormwater Management Manual for Western Washington means *Stormwater Management Manual for Western Washington (as amended in 2014)*

SWMP means Stormwater Management Program.

TMDL means Total Maximum Daily Load.

Total Maximum Daily Load means a water cleanup plan. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The calculation must include a margin of safety to ensure that the water body can be used for the purposes the state has designated. The calculation must also account for seasonable variation in water quality. Water quality standards are set by states, territories, and tribes. They identify the uses for each water body, for example, drinking water supply, contact recreation (swimming), and aquatic life support (fishing), and the scientific criteria to support that use. The Clean Water Act, section 303, establishes the water quality standards and TMDL programs.

Tributary conveyance means pipes, ditches, catch basins, and inlets owned or operated by the Permittee and designed or used for collecting and conveying stormwater.

UGA means Urban Growth Area.

Urban Growth Area means those areas designated by a county pursuant to RCW 36.70A.110.

Urbanized Area is a federally-designated land area comprising one or more places and the adjacent densely settled surrounding area that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile. Urbanized Areas are designated by the U.S. Census Bureau based on the most recent decennial census.

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.

Water Quality Standards means Surface Water Quality Standards, chapter 173-201A WAC, Ground Water Quality Standards, chapter 173-200 WAC, and Sediment Management Standards, chapter 173-204 WAC.

Waters of the State includes those waters as defined as "waters of the United States" in 40 CFR Subpart 122.2 within the geographic boundaries of Washington State and "waters of the state" as defined in chapter 90.48 RCW which includes lakes, rivers, ponds, streams, inland waters, underground waters, salt waters and all other surface waters and water courses within the jurisdiction of the State of Washington.

Waters of the United States refers to the definition in 40 CFR 122.2.

APPENDIX 1 – Minimum Technical Requirements for New Development and Redevelopment

Section 1. Exemptions

Unless otherwise indicated in this Section 1, the practices described in this section are exempt from the Minimum Requirements, even if such practices meet the definition of new development or redevelopment.

Forest practices:

Forest practices regulated under Title 222 WAC, except for Class IV General forest practices that are conversions from timberland to other uses, are exempt from the provisions of the minimum requirements.

Commercial agriculture:

Commercial agriculture practices involving working the land for production are generally exempt. However, the conversion from timberland to agriculture, and the construction of impervious surfaces are not exempt.

Oil and Gas Field Activities or Operations:

Construction of drilling sites, waste management pits, and access roads, as well as construction of transportation and treatment infrastructure such as pipelines natural gas treatment plants, natural gas pipeline compressor stations, and crude oil pumping stations are exempt. Operators are encouraged to implement and maintain Best Management Practices to minimize erosion and control sediment during and after construction activities to help ensure protection of surface water quality during storm events.

Pavement Maintenance:

The following pavement maintenance practices are exempt: pothole and square cut patching, overlaying existing asphalt or concrete pavement with asphalt or concrete without expanding the area of coverage, shoulder grading, reshaping/regrading drainage systems, crack sealing, resurfacing with in-kind material without expanding the road prism, pavement preservation activities that do not expand the road prism, and vegetation maintenance.

The following pavement maintenance practices are not categorically exempt. The extent to which this Appendix applies is explained for each circumstance.

- Removing and replacing a paved surface to base course or lower, or repairing the pavement base: If impervious surfaces are not expanded, Minimum Requirements #1 - #5 apply.
- Extending the pavement edge without increasing the size of the road prism, or paving graveled shoulders: These are considered new impervious surfaces and are subject to the minimum requirements that are triggered when the thresholds identified for new or redevelopment projects are met.
- Resurfacing by upgrading from dirt to gravel, asphalt, or concrete; upgrading from gravel to asphalt, or concrete; or upgrading from a bituminous surface treatment ("chip seal") to asphalt or concrete: These are considered new impervious surfaces and are subject to the minimum requirements that are triggered when the thresholds identified for new or redevelopment projects are met.

Underground utility projects:

Underground utility projects that replace the ground surface with in-kind material or materials with similar runoff characteristics are only subject to Minimum Requirement #2, Construction Stormwater Pollution Prevention.

Section 2. Definitions Related to Minimum Requirements

Arterial – A road or street primarily for through traffic. The term generally includes roads or streets considered collectors. It does not include local access roads which are generally limited to providing access to abutting property. See also RCW 35.78.010, RCW 36.86.070, and RCW 47.05.021.

Bioretention – Engineered facilities that treat stormwater by passing it through a specified soil profile, and either retain or detain the treated stormwater for flow attenuation. Refer to the *Stormwater Management Manual for Western Washington (SWMMWW)*, Chapter 7 of Volume V for Bioretention BMP types and design specifications.

Certified Erosion and Sediment Control Lead (CESCL) – means an individual who has current certification through an approved erosion and sediment control training program that meets the minimum training standards established by the Washington Department of Ecology (Ecology) (see BMP C160 in the *Stormwater Management Manual* for *Western Washington (SWMMWW)*). A CESCL is knowledgeable in the principles and practices of erosion and sediment control. The CESCL must have the skills to assess site conditions and construction activities that could impact the quality of stormwater and, the effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges. Certification is obtained through an Ecology approved erosion and sediment control course. Course listings are provided online at Ecology's website.

Commercial Agriculture – means those activities conducted on lands defined in RCW 84.34.020(2) and activities involved in the production of crops or livestock for commercial trade.

An activity ceases to be considered commercial agriculture when the area on which it is conducted is proposed for conversion to a nonagricultural use or has lain idle for more than five years, unless the idle land is registered in a federal or state soils conservation program, or unless the activity is maintenance of irrigation ditches, laterals, canals, or drainage ditches related to an existing and ongoing agricultural activity.

***Converted vegetation (areas)* –** The surfaces on a project site where native vegetation, pasture, scrub/shrub, or unmaintained non-native vegetation (e.g., Himalayan blackberry, scotch broom) are converted to lawn or landscaped areas, or where native vegetation is converted to pasture.

***Discharge Point* –** the location where a discharge leaves the permittee's MS4 to another permittee's MS4 or a private or public stormwater conveyance. "Discharge point" also includes the location where a discharge leaves the permittee's MS4 and discharges to ground, except where such discharge occurs via an outfall.

***Effective Impervious surface* –** Those impervious surfaces that are connected via sheet flow or discrete conveyance to a drainage system. Impervious surfaces are considered ineffective if: 1) the runoff is dispersed through at least one hundred feet of native vegetation in accordance with BMP T5.30 – "Full Dispersion" as described in Chapter 5 of Volume V of the *Stormwater Management Manual for Western Washington (SWMMWW)*; 2) residential roof runoff is infiltrated in accordance with Downspout Full Infiltration Systems in BMP T5.10A in Volume III of the *SWMMWW*; or 3) approved continuous runoff modeling methods indicate that the entire runoff file is infiltrated.

***Erodible or leachable materials* –** Wastes, chemicals, or other substances that measurably alter the physical or chemical characteristics of runoff when exposed to rainfall. Examples include erodible soils that are stockpiled, uncovered process wastes, manure, fertilizers, oily substances, ashes, kiln dust, and garbage dumpster leakage.

***Hard Surface* –** An impervious surface, a permeable pavement, or a vegetated roof.

***Highway* –** A main public road connecting towns and cities

***Impervious surface* –** A non-vegetated surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A non-vegetated surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or storage areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether the thresholds for application of minimum requirements are exceeded. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling.

***Land disturbing activity* –** Any activity that results in a change in the existing soil cover (both vegetative and non-vegetative) and/or the existing soil topography. Land disturbing activities

include, but are not limited to clearing, grading, filling, and excavation. Compaction that is associated with stabilization of structures and road construction shall also be considered a land disturbing activity. Vegetation maintenance practices, including landscape maintenance and gardening, are not considered land-disturbing activity. Stormwater facility maintenance is not considered land disturbing activity if conducted according to established standards and procedures.

Low Impact Development (LID) – A stormwater and land use management strategy that strives to mimic pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration by emphasizing conservation, use of on-site natural features, site planning, and distributed stormwater management practices that are integrated into a project design.

LID Best Management Practices – Distributed stormwater management practices, integrated into a project design, that emphasize pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration. LID BMPs include, but are not limited to, bioretention,rain gardens, permeable pavements, roof downspout controls, dispersion, soil quality and depth, minimal excavation foundations, vegetated roofs, and water re-use.

LID Principles – Land use management strategies that emphasize conservation, use of on-site natural features, and site planning to minimize impervious surfaces, native vegetation loss, and stormwater runoff.

Maintenance – Repair and maintenance includes activities conducted on currently serviceable structures, facilities, and equipment that involves no expansion or use beyond that previously existing and results in no significant adverse hydrologic impact. It includes those usual activities taken to prevent a decline, lapse, or cessation in the use of structures and systems. Those usual activities may include replacement of dysfunctional facilities, including cases where environmental permits require replacing an existing structure with a different type structure, as long as the functioning characteristics of the original structure are not changed. One example is the replacement of a collapsed, fish blocking, round culvert with a new box culvert under the same span, or width, of roadway. In regard to stormwater facilities, maintenance includes assessment to ensure ongoing proper operation, removal of built up pollutants (i.e. sediments), replacement of failed or failing treatment media, and other actions taken to correct defects as identified in the maintenance standards of Chapter 4, Volume V of the *Stormwater Management Manual for Western Washington (SWMMWW).* See also Pavement Maintenance exemptions in Section 1 of this Appendix.

Native vegetation – Vegetation comprised of plant species, other than noxious weeds, that are indigenous to the coastal region of the Pacific Northwest and which reasonably could have been expected to naturally occur on the site. Examples include trees such as Douglas Fir, western hemlock, western red cedar, alder, big-leaf maple, and vine maple; shrubs such as willow, elderberry, salmonberry, and salal; and herbaceous plants such as sword fern, foam flower, and fireweed.

New development – Land disturbing activities, including Class IV -general forest practices that are conversions from timber land to other uses; structural development, including construction or installation of a building or other structure; creation of hard surfaces; and subdivision, short

subdivision and binding site plans, as defined and applied in Chapter 58.17 RCW. Projects meeting the definition of redevelopment shall not be considered new development.

Outfall – a point source as defined by 40 CFR 122.2 at the point where a discharge leaves the permittee's MS4 and enters a receiving waterbody or receiving waters. Outfall also includes the permittee's MS4 facilities/BMPs designed to infiltrate stormwater.

On-site Stormwater Management BMPs: As used in this appendix, a synonym for Low Impact Development BMPs.

Permeable pavement – Pervious concrete, porous asphalt, permeable pavers or other forms of pervious or porous paving material intended to allow passage of water through the pavement section. It often includes an aggregate base that provides structural support and acts as a stormwater reservoir.

Pervious Surface – Any surface material that allows stormwater to infiltrate into the ground. Examples include lawn, landscape, pasture, native vegetation areas, and permeable pavements.

Pollution-generating hard surface (PGHS) – Those hard surfaces considered to be a significant source of pollutants in stormwater runoff. See the listing of surfaces under pollution-generating impervious surface.

Pollution-generating impervious surface (PGIS) – Those impervious surfaces considered to be a significant source of pollutants in stormwater runoff. Such surfaces include those which are subject to: vehicular use; industrial activities (as further defined in the glossary of the *Stormwater Management Manual for Western Washington* (SWMMWW)); storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall; metal roofs unless they are coated with an inert, non-leachable material (e.g., baked-on enamel coating); or roofs that are subject to venting significant amounts of dusts, mists, or fumes from manufacturing, commercial, or other indoor activities.

Pollution-generating pervious surfaces (PGPS) – Any non-impervious surface subject to vehicular use, industrial activities (as further defined in the glossary of the *Stormwater Management Manual for Western Washington* ***(****SWMMWW*); or storage of erodible or leachable materials, wastes, or chemicals, and that receive direct rainfall or run-on or blow-in of rainfall, use of pesticides and fertilizers, or loss of soil. Typical PGPS include permeable pavement subject to vehicular use, lawns, and landscaped areas including: golf courses, parks, cemeteries, and sports fields (natural and artificial turf).

Pre-developed condition – The native vegetation and soils that existed at a site prior to the influence of Euro-American settlement. The pre-developed condition shall be assumed to be a forested land cover unless reasonable, historic information is provided that indicates the site was prairie prior to settlement.

Project site – That portion of a property, properties, or right of way subject to land disturbing activities, new hard surfaces, or replaced hard surfaces.

Rain Garden – A non-engineered shallow landscaped depression, with compost-amended native soils and adapted plants. The depression is designed to pond and temporarily store stormwater runoff from adjacent areas, and to allow stormwater to pass through the amended soil profile. Refer to the Rain Garden Handbook for Western Washington Homeowners (2013[1]) for guidance on rain garden specifications and the construction process.

Receiving waterbody or Receiving waters – Naturally and/or reconstructed naturally occurring surface water bodies, such as creeks, streams, rivers, lakes, wetlands, estuaries, and marine waters, to which a discharge occurs via an outfall or via sheet/dispersed flow. Receiving waters also include ground water to which a discharge occurs via facilities/BMPs designed to infiltrate stormwater.

Redevelopment – On a site that is already substantially developed (i.e., has 35% or more of existing hard surface coverage), the creation or addition of hard surfaces; the expansion of a building footprint or addition or replacement of a structure; structural development including construction, installation or expansion of a building or other structure; replacement of hard surface that is not part of a routine maintenance activity; and land disturbing activities.

Replaced hard surface – For structures, the removal and replacement of hard surfaces down to the foundation. For other hard surfaces, the removal down to bare soil or base course and replacement.

Replaced impervious surface – For structures, the removal and replacement of impervious surfaces down to the foundation. For other impervious surfaces, the removal down to bare soil or base course and replacement.

Site – The area defined by the legal boundaries of a parcel or parcels of land that is (are) subject to new development or redevelopment. For road projects, the length of the project site and the right-of-way boundaries define the site.

Source control BMP – A structure or operation that is intended to prevent pollutants from coming into contact with stormwater through physical separation of areas or careful management of activities that are sources of pollutants. The *Stormwater Management Manual for Western Washington* (S*WMMWW)* separates source control BMPs into two types. *Structural Source Control BMPs* are physical, structural, or mechanical devices, or facilities that are intended to prevent pollutants from entering stormwater. *Operational BMPs* are non-structural practices that prevent or reduce pollutants from entering stormwater. See Volume IV of the *SWMMWW* for details.

Threshold Discharge Area – An on-site area draining to a single natural discharge location or multiple natural discharge locations that combine within one-quarter mile downstream (as determined by the shortest flowpath). The examples in Figure 2.1 below illustrate this definition. The purpose of this definition is to clarify how the thresholds of this appendix are applied to project sites with multiple discharge points.

[1] Washington State University, Extension. Hinman, Curtis. Rain Garden Handbook for Western Washington. June 2013. Available at: https://fortress.wa.gov/ecy/publications/SummaryPages/1310027.html

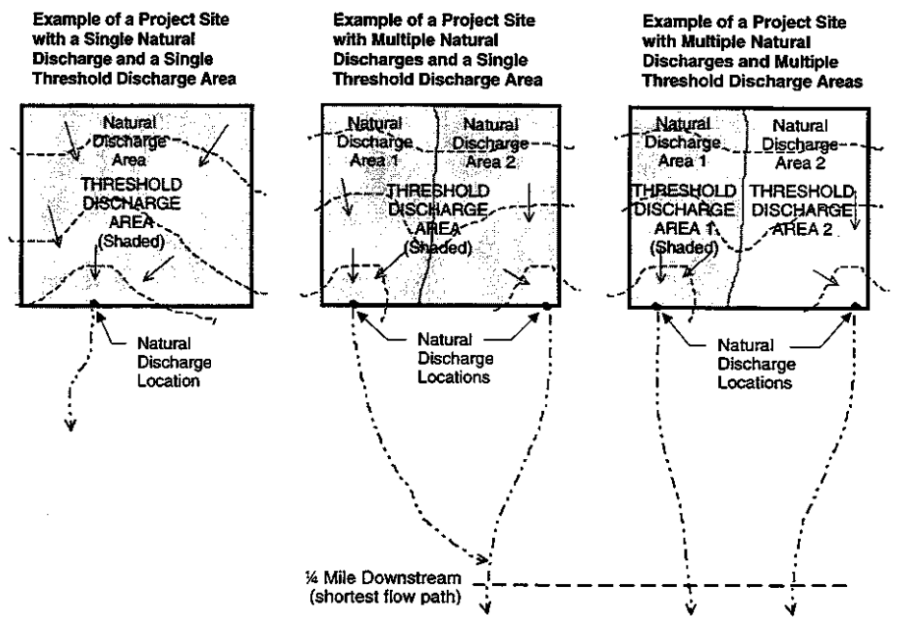

Figure 2.1 Threshold Discharge Areas

Vehicular Use **–** Regular use of an impervious or pervious surface by motor vehicles. The following are subject to regular vehicular use: roads, un-vegetated road shoulders, bike lanes within the traveled lane of a roadway, driveways, parking lots, unrestricted access fire lanes, vehicular equipment storage yards, and airport runways.

The following are not considered subject to regular vehicular use: paved bicycle pathways separated from and not subject to drainage from roads for motor vehicles, restricted access fire lanes, and infrequently used maintenance access roads.

Wetland **–** Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from non-wetland areas to mitigate the conversion of wetlands.

Section 3. Applicability of the Minimum Requirements

3.1 Thresholds

Not all of the Minimum Requirements apply to every development or redevelopment project. The applicability varies depending on the project type and size. This section identifies thresholds that determine the applicability of the Minimum Requirements to projects. Use the flow charts in Figures 3.1, 3.2 and 3.3 to determine which of the Minimum Requirements apply. The Minimum Requirements themselves are presented in Section 4 of this Appendix.

Use the thresholds in sections 3.2 and 3.3 at the time of application for a subdivision, plat, short plat, building permit, or other construction permit. The plat or short plat approval shall identify all stormwater BMPs that are required for each lot. For projects involving only land disturbing activities, (e.g., clearing or grading), the thresholds apply at the time of application for the permit allowing or authorizing that activity. Note the exemption in Section 1 for forest practices other than Class IV General.

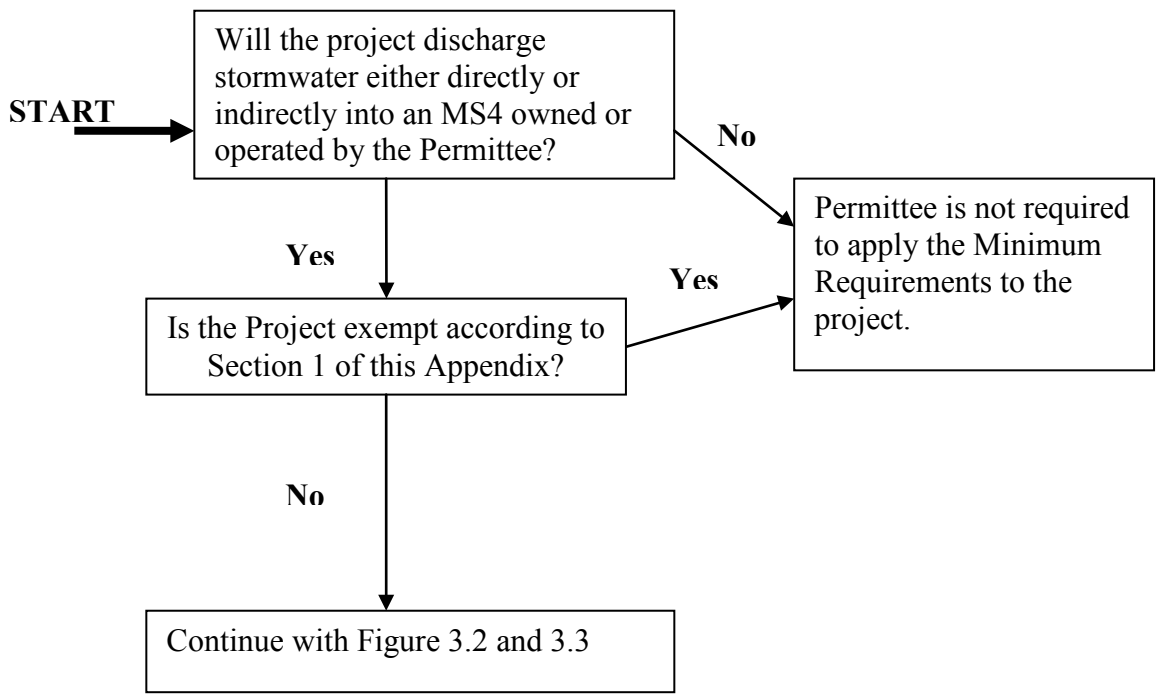

Figure 3.1 Flow Chart for Determining Whether the Permittee Must Regulate the Project

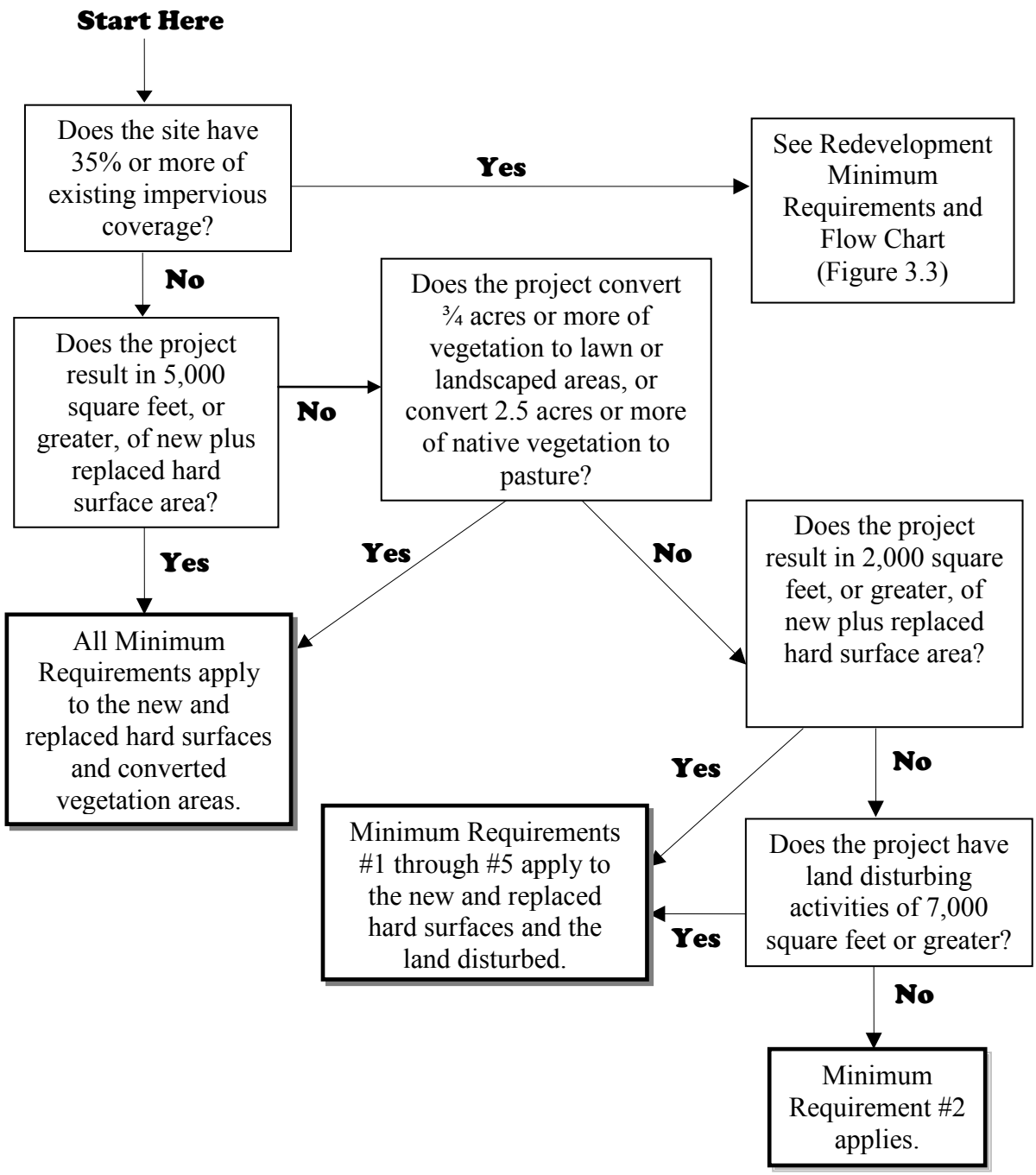

Figure 3.2 Flow Chart for Determining Requirements for New Development

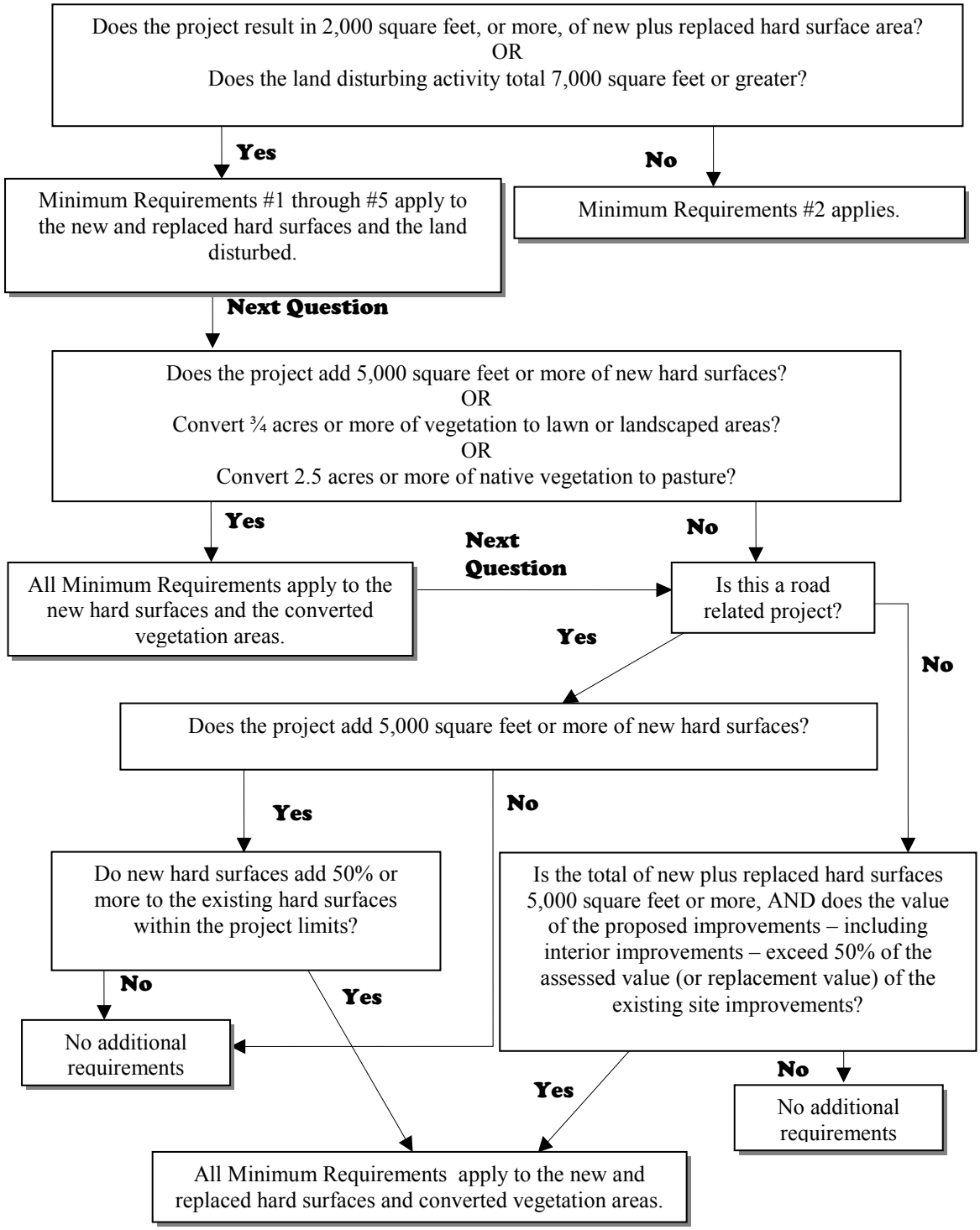

Figure 3.3 Flow Chart for Determining Requirements for Redevelopment

3.2 New Development

All new development shall be required to comply with Minimum Requirement #2.

The following new development shall comply with Minimum Requirements #1 through #5 for the new and replaced hard surfaces and the land disturbed:

- Results in 2,000 square feet, or greater, of new plus replaced hard surface area, or
- Has land disturbing activity of 7,000 square feet or greater.

The following new development shall comply with Minimum Requirements #1 through #9 for the new and replaced hard surfaces and the converted vegetation areas:

- Results in 5,000 square feet, or greater, of new plus replaced hard surface area, or
- Converts ¾ acres, or more, of vegetation to lawn or landscaped areas, or
- Converts 2.5 acres, or more, of native vegetation to pasture.

3.3 Redevelopment

All redevelopment shall be required to comply with Minimum Requirement #2.

The following redevelopment shall comply with Minimum Requirements #1 through #5 for the new and replaced hard surfaces and the land disturbed:

- Results in 2,000 square feet, or more, of new plus replaced hard surface area, or
- Has land disturbing activity of 7,000 square feet or greater.

The following redevelopment shall comply with Minimum Requirements #1 through #9 for the new hard surfaces and converted vegetation areas:

- Adds 5,000 square feet or more of new hard surfaces or,
- Converts ¾ acres, or more, of vegetation to lawn or landscaped areas, or
- Converts 2.5 acres, or more, of native vegetation to pasture.

The local government may allow the Minimum Requirements to be met for an equivalent (flow and pollution characteristics) area within the same site. For public road projects, the equivalent area does not have to be within the project limits, but must drain to the same receiving water.

3.4 Additional Requirements for Re-development Project Sites

For road-related projects, runoff from the replaced and new hard surfaces (including pavement, shoulders, curbs, and sidewalks) and the converted vegetation areas shall meet all the Minimum Requirements if the new hard surfaces total 5,000 square feet or more and total 50% or more of the existing hard surfaces within the project limits. The project limits shall be defined by the length of the project and the width of the right-of-way.

Other types of redevelopment projects shall comply with Minimum Requirements #1 through #9 for the new and replaced hard surfaces and the converted vegetation areas if the total of new plus replaced hard surfaces is 5,000 square feet or more, and the valuation of proposed improvements – including interior improvements – exceeds 50% of the assessed value of the existing site improvements.

The Permittee may exempt or institute a stop-loss provision for redevelopment projects from compliance with Minimum Requirement #5 On-site Stormwater Management, Minimum Requirement #6 Runoff Treatment, Minimum Requirement #7 Flow Control and/or Minimum Requirement #8 Wetlands Protection as applied to the replaced hard surfaces if the Permittee has adopted a plan and a schedule that fulfills those requirements in regional facilities.

The Permittee may grant a variance/exception to the application of the flow control requirements to replaced impervious surfaces if such application imposes a severe economic hardship. See Section 6 of this Appendix.

3.5 Modification of the Minimum Requirements

Basin Planning is encouraged and may be used to tailor Minimum Requirement #5 On-site Stormwater Management, Minimum Requirement #6 Runoff Treatment, Minimum Requirement #7 Flow Control, and/or Minimum Requirement #8 Wetlands Protection. Basin planning may also be used to demonstrate an equivalent level of treatment, flow control, and/or wetland protection through the construction and use of regional stormwater facilities. See Section 7 of this Appendix for details on Basin Planning and how Permittees may use basin planning to modify the Minimum Requirements in Section 4.

Section 4. Minimum Requirements

This Section describes the Minimum Requirements for stormwater management at new development and redevelopment sites. Section 3 of this Appendix should be consulted to determine which of the minimum requirements below apply to any given project. Figures 3.2 and 3.3 should be consulted to determine whether the minimum requirements apply to new surfaces, replaced surfaces, or new and replaced surfaces.

4.1 Minimum Requirement #1: Preparation of Stormwater Site Plans

The permittee shall require a Stormwater Site Plan from all projects meeting the thresholds in Section 3.1 of this Appendix. Stormwater Site Plans shall use site-appropriate development principles, as required and encouraged by local development codes, to retain native vegetation and minimize impervious surfaces to the extent feasible.

Stormwater Site Plans shall be prepared in accordance with Chapter 3 of Volume 1 of the *Stormwater Management Manual for Western Washington (SWMMWW).*

4.2 Minimum Requirement #2: Construction Stormwater Pollution Prevention Plan (SWPPP)

Permittees may choose to allow compliance with this Minimum Requirement to be achieved for an individual site if the site is covered under Ecology's *General NPDES Permit for Stormwater Discharges Associated with Construction Activities* and fully implementing the requirements of that permit.

Thresholds

All new development and redevelopment projects are responsible for preventing erosion and discharge of sediment and other pollutants into receiving waters.

Permittees must require a Construction Stormwater Pollution Prevention Plan (SWPPP) for all projects which result in 2,000 sq. ft. or more of new plus replaced hard surface area, or which disturb 7,000 sq. ft. or more of land.

Projects below those thresholds are not required to prepare a Construction SWPPP, but must consider all of the Elements listed below for Construction SWPPPs and develop controls for all elements that pertain to the project site. The Permittee may develop an abbreviated SWPPP format to meet the SWPPP requirement under this permit for project sites that will disturb less than 1 acre.

General Requirements

The SWPPP shall include a narrative and drawings. All BMPs shall be clearly referenced in the narrative and marked on the drawings. The SWPPP narrative shall include documentation to explain and justify the pollution prevention decisions made for the project. Each of the thirteen elements listed below must be considered and included in the SWPPP unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the narrative of the SWPPP.

Clearing and grading activities for developments shall be permitted only if conducted pursuant to an approved site development plan (e.g., subdivision approval) that establishes permitted areas of clearing, grading, cutting, and filling. These permitted clearing and grading areas and any other areas required to preserve critical or sensitive areas, buffers, native growth protection easements, or tree retention areas as may be required by local jurisdictions, shall be delineated on the site plans and the development site.

The SWPPP shall be implemented beginning with initial land disturbance and until final stabilization. Sediment and Erosion control BMPs shall be consistent with the BMPs contained in chapter 4 of Volume II of the *Stormwater Management Manual for Western Washington* (SWMMWW).

Seasonal Work Limitations - From October 1 through April 30, clearing, grading, and other soil disturbing activities may only be authorized by the Permittee if silt-laden runoff will be prevented from leaving the site through a combination of the following:

1. Site conditions including existing vegetative coverage, slope, soil type and proximity to receiving waters; and
2. Limitations on activities and the extent of disturbed areas; and
3. Proposed erosion and sediment control measures.

Based on the information provided and/or local weather conditions, the Permittee may expand or restrict the seasonal limitation on site disturbance. The following activities are exempt from the seasonal clearing and grading limitations:

1. Routine maintenance and necessary repair of erosion and sediment control BMPs,
2. Routine maintenance of public facilities or existing utility structures that do not expose the soil or result in the removal of the vegetative cover to soil, and
3. Activities where there is one hundred percent infiltration of surface water runoff within the site in approved and installed erosion and sediment control facilities.

Construction Stormwater Pollution Prevention Plan (SWPPP) Elements

1. Preserve Vegetation/Mark Clearing Limits:

a. Before beginning land disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.

b. Retain the duff layer, native top soil, and natural vegetation in an undisturbed state to the maximum degree practicable.

2. Establish Construction Access:

a. Limit construction vehicle access and exit to one route, if possible.

b. Stabilize access points with a pad of quarry spalls, crushed rock, or other equivalent BMPs, to minimize tracking of sediment onto public roads.

c. Locate wheel wash or tire baths on-site, if the stabilized constructions entrance is not effective in preventing tracking sediment onto roads.

d. If sediment is tracked off site, clean the affected roadways thoroughly at the end of each day, or more frequently as necessary (for example, during wet weather). Remove sediment from roads by shoveling, sweeping, or pick up and transport the sediment to a controlled sediment disposal area.

e. Conduct street washing only after sediment is removed in accordance with 2.d, above.

f. Control street wash wastewater by pumping back on-site, or otherwise prevent it from discharging into systems tributary to waters of the State.

3. Control Flow Rates:

a. Protect properties and waterways downstream of development sites from erosion and the associated discharge of turbid waters due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site.

b. Where necessary to comply with 3.a, above, construct stormwater retention or detention facilities as one of the first steps in grading. Assure that detention facilities function properly before constructing site improvements (e.g., impervious surfaces).

c. If permanent infiltration ponds are used for flow control during construction, protect these facilities from siltation during the construction phase.

4. Install Sediment Controls:

a. Design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants.

b. Construct sediment control BMPs (sediment ponds, traps, filters, etc.) as one of the first steps in grading. These BMPs shall be functional before other land disturbing activities take place.

c. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site.

d. Direct stormwater runoff from disturbed areas through a sediment pond or other appropriate sediment removal BMP, before the runoff leaves a construction site or before discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must meet the flow control performance standard in 3.a, above.

e. Locate BMPs intended to trap sediment on-site in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages.

f. Where feasible, design outlet structures that withdraw impounded stormwater from the surface to avoid discharging sediment that is still suspended lower in the water column.

5. **Stabilize Soils:**
   a. Stabilize exposed and unworked soils by application of effective BMPs that prevent erosion. Applicable BMPs include, but are not limited to: temporary and permanent seeding, sodding, mulching, plastic covering, erosion control fabrics and matting, soil application of polyacrylamide (PAM), the early application of gravel base early on areas to be paved, and dust control.
   b. Control stormwater volume and velocity within the site to minimize soil erosion.
   c. Control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion.
   d. Soils must not remain exposed and unworked for more than the time periods set forth below to prevent erosion:
      - During the dry season (May 1 – September 30): 7 days
      - During the wet season (October 1 – April 30): 2 days
   e. Stabilize soils at the end of the shift before a holiday or weekend if needed based on the weather forecast.
   f. Stabilize soil stockpiles from erosion, protect with sediment trapping measures, and where possible, locate away from storm drain inlets, waterways and drainage channels.
   g. Minimize the amount of soil exposed during construction activity.
   h. Minimize the disturbance of steep slopes.
   i. Minimize soil compaction and, unless infeasible, preserve topsoil.
6. **Protect Slopes:**
   a. Design and construct cut-and-fill slopes in a manner to minimize erosion. Applicable practices include, but are not limited to, reducing continuous length of slope with terracing and diversions, reducing slope steepness, and roughening slope surfaces (for example, track walking).
   b. Divert off-site stormwater (run-on) or ground water away from slopes and disturbed areas with interceptor dikes, pipes and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.
   c. At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion.
      - Temporary pipe slope drains must handle the peak volumetric flow rate calculated using a 10-minute time step from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year 1-hour flow rate predicted by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis must use the

temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the Western Washington Hydrology Model to predict flows, bare soil areas should be modeled as "landscaped area."

d. Place excavated material on the uphill side of trenches, consistent with safety and space considerations.

e. Place check dams at regular intervals within constructed channels that are cut down a slope.

7. Protect Drain Inlets:

a. Protect storm drain inlets made operable during construction so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.

b. Clean or remove and replace inlet protection devices when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).

8. Stabilize Channels and Outlets:

a. Design, construct, and stabilize all on-site conveyance channels to prevent erosion from the following expected peak flows:

- Channels must handle the peak volumetric flow rate calculated using a 10-minute time step from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis shall use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the Western Washington Hydrology Model to predict flows, bare soil areas should be modeled as "landscaped area."

b. Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches at the outlets of all conveyance systems.

9. Control Pollutants:

a. Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants.

b. Handle and dispose all pollutants, including waste materials and demolition debris that occur on-site in a manner that does not cause contamination of stormwater.

c. Provide cover, containment, and protection from vandalism for all chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment. On-site fueling tanks must include secondary containment. Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the

volume contained in the largest tank within the containment structure. Double-walled tanks do not require additional secondary containment.

d. Conduct maintenance, fueling and repair of heavy equipment and vehicles using spill prevention and control measures. Clean contaminated surfaces immediately following any spill incident.

e. Discharge wheel wash or tire bath wastewater to a separate on-site treatment system that prevents discharge to surface water, such as closed-loop recirculation or upland application, or to the sanitary sewer, with local sewer district approval.

f. Apply fertilizers and pesticides in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturers' label requirements for application rates and procedures.

g. Use BMPs to prevent contamination of stormwater runoff by pH modifying sources. The sources for this contamination include, but are not limited to: bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters.

h. Adjust the pH of stormwater if necessary to prevent violations of water quality standards.

i. Assure that washout of concrete trucks is performed off-site or in designated concrete washout areas only. Do not wash out concrete trucks onto the ground, or into storm drains, open ditches, streets, or streams. Do not dump excess concrete on-site, except in designated concrete washout areas. Concrete spillage or concrete discharge to surface waters of the State is prohibited.

j. Obtain written approval from Ecology before using chemical treatment other than CO2 or dry ice to adjust pH.

10. Control De-Watering:

a. Discharge foundation, vault, and trench de-watering water, which have similar characteristics to stormwater runoff at the site, into a controlled conveyance system before discharge to a sediment trap or sediment pond.

b. Discharge clean, non-turbid de-watering water, such as well-point ground water, to systems tributary to, or directly into surface waters of the State, as specified in 8, above, provided the de-watering flow does not cause erosion or flooding of receiving waters. Do not route clean dewatering water through stormwater sediment ponds. Note that "surface waters of the State" may exist on a construction site as well as off site; for example, a creek running through a site.

c. Handle highly turbid or otherwise contaminated dewatering water separately from stormwater.

d. Other treatment or disposal options may include:

(i) Infiltration

(ii) Transport off-site in vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters.

(iii) Ecology-approved on-site chemical treatment or other suitable treatment technologies.

(iv) Sanitary or combined sewer discharge with local sewer district approval, if there is no other option.

(v) Use of a sedimentation bag with a discharge point to a ditch or swale for small volumes of localized dewatering.

11. Maintain BMPs:

a. Maintain and repair all temporary and permanent erosion and sediment control BMPs as needed to assure continued performance of their intended function in accordance with BMP specifications.

b. Remove all temporary erosion and sediment control BMPs within 30 days after achieving final site stabilization or after the temporary BMPs are no longer needed.

12. Manage the Project:

a. Phase development projects to the maximum degree practicable and take into account seasonal work limitations.

b. Inspection and monitoring – Inspect, maintain, and repair all BMPs as needed to assure continued performance of their intended function.

c. Maintaining an updated construction SWPPP – Maintain, update, and implement the SWPPP.

d. Projects that disturb one or more acres must have site inspections conducted by a Certified Erosion and Sediment Control Lead (CESCL). Project sites disturbing **less than one acre may have a** CESCL or a **person without CESCL certification conduct inspections. By the initiation of construction, the SWPPP must identify the CESCL or inspector, who must be present on-site or on-call at all times.**

13. Protect Low Impact Development BMPs

a. Protect all Bioretention and Rain Garden BMPs from sedimentation through installation and maintenance of erosion and sediment control BMPs on portions of the site that drain into the Bioretention and/or Rain Garden BMPs. Restore the BMPs to their fully functioning condition if they accumulate sediment during construction. Restoring the BMP must include removal of sediment and any sediment-laden Bioretention/rain garden soils, and replacing the removed soils with soils meeting the design specification.

b. Prevent compacting Bioretention and Rain Garden BMPs by excluding construction equipment and foot traffic. Protect completed lawn and landscaped areas from compaction due to construction equipment.

c. Control erosion and avoid introducing sediment from surrounding land uses onto permeable pavements. Do not allow muddy construction equipment on the base material or pavement. Do not allow sediment-laden runoff onto permeable pavements or base materials.

d. Pavements fouled with sediments or no longer passing an initial infiltration test must be cleaned using procedures from the local stormwater manual or the manufacturer's procedures.

e. Keep all heavy equipment off existing soils under LID BMPs that have been excavated to final grade to retain the infiltration rate of the soils.

4.3 Minimum Requirement #3: Source Control of Pollution

All known, available and reasonable source control BMPs must be required for all projects approved by the Permittee. Source control BMPs must be selected, designed, and maintained in accordance with Volume IV of the *Stormwater Management Manual for Western Washington* or an approved equivalent manual approved by Ecology.

4.4 Minimum Requirement #4: Preservation of Natural Drainage Systems and Outfalls

Natural drainage patterns shall be maintained, and discharges from the project site shall occur at the natural location, to the maximum extent practicable. The manner by which runoff is discharged from the project site must not cause a significant adverse impact to downstream receiving waters and down gradient properties. All outfalls require energy dissipation.

4.5 Minimum Requirement #5: On-site Stormwater Management

Applicability

Except as provided below, the Permittee must require On-site Stormwater Management BMPs in accordance with the following project thresholds, standards, and lists to infiltrate, disperse, and retain stormwater runoff on-site to the extent feasible without causing flooding or erosion impacts.

Projects qualifying as flow control exempt in accordance with Section 4.7 of this Appendix do not have to achieve the LID performance standard, nor consider bioretention, rain gardens, permeable pavement, and full dispersion if using List #1 or List #2. However, those projects must implement BMP T5.13; BMPs T5.10A, B, or C; and BMP T5.11or T5.12, if feasible.

Project Thresholds

1. Projects triggering only Minimum Requirements #1 through #5 shall either:

a. Use On-site Stormwater Management BMPs from List #1 for all surfaces within each type of surface in List #1; or

b. Demonstrate compliance with the LID Performance Standard. Projects selecting this option cannot use Rain Gardens. They may choose to use Bioretention BMPs as described in the *SWMMWW*[2].

2. Projects triggering Minimum Requirements #1 through #9 must meet the requirements in Table 4.1

[2] All references to the *Stormwater Management Manual for Western Washington* are to the 2014 amended version.

Table 4.1: On-site Stormwater Management Requirements for Projects Triggering Minimum Requirements #1 - #9

Project Type and Location	Requirement
New development on any parcel inside the UGA, or new development outside the UGA on a parcel less than 5 acres	Low Impact Development Performance Standard and BMP T5.13; or List #2 (applicant option).
New development outside the UGA on a parcel of 5 acres or larger	Low Impact Development Performance Standard and BMP T5.13.
Redevelopment on any parcel inside the UGA, or redevelopment outside the UGA on a parcel less than 5 acres	Low Impact Development Performance Standard and BMP T5.13; or List #2 (applicant option).
Redevelopment outside the UGA on a parcel of 5 acres or larger	Low Impact Development Performance Standard and BMP T5.13.

NOTE: This table refers to the Urban Growth Area (UGA) as designated under the Growth Management Act (GMA) (chapter 36.70A RCW) of the State of Washington. If the Permittee is located in a county that is not subject to planning under the GMA, the city limits shall be used instead.

Low Impact Development Performance Standard

Stormwater discharges shall match developed discharge durations to pre-developed durations for the range of pre-developed discharge rates from 8% of the 2-year peak flow to 50% of the 2-year peak flow. Refer to the Standard Flow Control Requirement section in Minimum Requirement #7 for information about the assignment of the pre-developed condition. Project sites that must also meet minimum requirement #7 shall match flow durations between 8% of the 2-year flow through the full 50-year flow.

List #1: On-site Stormwater Management BMPs for Projects Triggering Minimum Requirements #1 through #5

For each surface, consider the BMP's in the order listed for that type of surface. Use the first BMP that is considered feasible. No other On-site Stormwater Management BMP is necessary for that surface. Feasibility shall be determined by evaluation against:

1. Design criteria, limitations, and infeasibility criteria identified for each BMP in the *SWMMWW*; and

2. Competing Needs Criteria listed in Chapter 5 of Volume V of the *SWMMWW*.

Lawn and landscaped areas:

- Post-Construction Soil Quality and Depth in accordance with BMP T5.13 in Chapter 5 of Volume V of the *SWMMWW*

Roofs:

1. Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V of the *SWMMWW*, or Downspout Full Infiltration Systems in accordance with BMP T5.10A in Section 3.1.1 of Volume III of the *SWMMWW.*
2. Rain Gardens in accordance with BMP T5.14 in Chapter 5 of Volume V, or Bioretention in accordance with Chapter 7 of Volume V of the *SWMMWW.* The rain garden or bioretention facility must have a minimum horizontal projected surface area below the overflow which is at least 5% of the area draining to it.
3. Downspout Dispersion Systems in accordance with BMP T5.10B in Section 3.1.2 of Volume III of the *SWMMWW.*
4. Perforated Stub-out Connections in accordance with BMP T5.10C in Section 3.1.3 of Volume III of the *SWMMWW.*

Other Hard Surfaces:

1. Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V of the *SWMMWW.*
2. Permeable pavement[3] in accordance with BMP T5.15 in Chapter 5 of Volume V of the *SWMMWW,* or Rain Gardens in accordance with BMP T5.14 in Chapter 5 of Volume V, or Bioretention in accordance with Chapter 7 of Volume V of the *SWMMWW.* The rain garden or bioretention facility must have a minimum horizontal projected surface area below the overflow which is at least 5% of the area draining to it.
3. Sheet Flow Dispersion in accordance with BMP T5.12, or Concentrated Flow Dispersion in accordance with BMP T5.11 in Chapter 5 of Volume V of the *SWMMWW.*

List #2: On-site Stormwater Management BMPs for Projects Triggering Minimum Requirements #1 through #9

For each surface, consider the BMPs in the order listed for that type of surface. Use the first BMP that is considered feasible. No other On-site Stormwater Management BMP is necessary for that surface. Feasibility shall be determined by evaluation against:

1. Design criteria, limitations, and infeasibility criteria identified for each BMP in the *SWMMWW*; and

[3] This is not a requirement to pave these surfaces. Where pavement is proposed, it must be permeable to the extent feasible unless full dispersion is employed.

2. Competing Needs Criteria listed in Chapter 5 of Volume V of the *SWMMWW*.

Lawn and landscaped areas:

- Post-Construction Soil Quality and Depth in accordance with BMP T5.13 in Chapter 5 of Volume V of the *SWMMWW*

Roofs:

1. Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V of the *SWMMWW*, or Downspout Full Infiltration Systems in accordance with BMP T5.10A in Section 3.1.1 of Volume III of the *SWMMWW*
2. Bioretention (See Chapter 7 of Volume V of the *SWMMWW*) facilities that have a minimum horizontally projected surface area below the overflow which is at least 5% of the of the total surface area draining to it
3. Downspout Dispersion Systems in accordance with BMP T5.10B in Section 3.1.2 of Volume III of the *SWMMWW*
4. Perforated Stub-out Connections in accordance with BMP T5.10C in Section 3.1.3 of Volume III of the *SWMMWW*.

Other Hard Surfaces:

1. Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V of the *SWMMWW*
2. Permeable pavement[2] in accordance with BMP T5.15 in Chapter 5 of Volume V of the *SWMMWW*
3. Bioretention (See Chapter 7, Volume V of the *SWMMWW*) facilities that have a minimum horizontally projected surface area below the overflow which is at least 5% of the of the total surface area draining to it**.**
4. Sheet Flow Dispersion in accordance with BMP T5.12, or Concentrated Flow Dispersion in accordance with BMP T5.11 in Chapter 5 of Volume V of the *SWMMWW*

4.6 Minimum Requirement #6: Runoff Treatment

Project Thresholds

When assessing a project against the following thresholds, only consider those hard and pervious surfaces that are subject to this minimum requirement as determined in Section 3 of this Appendix.

The following require construction of stormwater treatment facilities:

- Projects in which the total of pollution-generating hard surface (PGHS) is 5,000 square feet or more in a threshold discharge area of the project, or

- Projects in which the total of pollution-generating pervious surfaces (PGPS) – not including permeable pavements - is three-quarters (3/4) of an acre or more in a threshold discharge area, and from which there will be a surface discharge in a natural or man-made conveyance system from the site.

Treatment-Type Thresholds

1. **Oil Control:**

   Treatment to achieve Oil Control applies to projects that have "high-use sites." High-use sites are those that typically generate high concentrations of oil due to high traffic turnover or the frequent transfer of oil. High-use sites include:

   a. An area of a commercial or industrial site subject to an expected average daily traffic (ADT) count equal to or greater than 100 vehicles per 1,000 square feet of gross building area;

   b. An area of a commercial or industrial site subject to petroleum storage and transfer in excess of 1,500 gallons per year, not including routinely delivered heating oil;

   c. An area of a commercial or industrial site subject to parking, storage or maintenance of 25 or more vehicles that are over 10 tons gross weight (trucks, buses, trains, heavy equipment, etc.);

   d. A road intersection with a measured ADT count of 25,000 vehicles or more on the main roadway and 15,000 vehicles or more on any intersecting roadway, excluding projects proposing primarily pedestrian or bicycle use improvements.

2. **Phosphorus Treatment:**

   The requirement to provide phosphorous control is determined by the local government with jurisdiction (e.g., through a lake management plan), or the Department of Ecology (e.g, through a waste load allocation). The local government may have developed a management plan and implementing ordinances or regulations for control of phosphorus from new/redevelopment for the receiving water(s) of the stormwater drainage. The local government can use the following sources of information for pursuing plans and implementing ordinances and/or regulations:

   a. Those waterbodies reported under section 305(b) of the Clean Water Act, and designated as not supporting beneficial uses due to phosphorous;

   b. Those listed in Washington State's Nonpoint Source Assessment required under section 319(a) of the Clean Water Act due to nutrients.

3. **Enhanced Treatment:**

Except where specified below under "4. Basic Treatment", Enhanced treatment for reduction in dissolved metals is required for the following project sites that: 1) discharge directly to fresh waters or conveyance systems tributary to fresh waters designated for aquatic life use or that have an existing aquatic life use; or 2) use infiltration strictly for flow control – not treatment – and the discharge is within ¼ mile of a fresh water designated for aquatic life use or that has an existing aquatic life use:

Industrial project sites,
Commercial project sites,
Multi-family project sites, and
High AADT roads as follows:

Within Urban Growth Management Areas:

- Fully controlled and partially controlled limited access highways with Annual Average Daily Traffic (AADT) counts of 15,000 or more
- All other roads with an AADT of 7,500 or greater

Outside of Urban Growth Management Areas:

- Roads with an AADT of 15,000 or greater unless discharging to a 4th Strahler order stream or larger;
- Roads with an AADT of 30,000 or greater if discharging to a 4th Strahler order stream or larger (as determined using 1:24,000 scale maps to delineate stream order).

Any areas of the above-listed project sites that are identified as subject to Basic Treatment requirements (below), are not also subject to Enhanced Treatment requirements. For developments with a mix of land use types, the Enhanced Treatment requirement shall apply when the runoff from the areas subject to the Enhanced Treatment requirement comprise 50% or more of the total runoff within a threshold discharge area.

4. **Basic Treatment:**

Basic Treatment is required in the following circumstances:

- Project sites that discharge to the ground, UNLESS:

  1) The soil suitability criteria for infiltration treatment are met (See Chapter 3, Volume III of the *SWMMWW*), and alternative pretreatment is provided (see Chapter 6,Volume V of the *SWMMWW)*; or

2) The project site uses infiltration strictly for flow control – not treatment - and the discharge is within ¼-mile of a phosphorus sensitive lake (use a Phosphorus Treatment facility), or

3) The project site is industrial, commercial, multi-family residential, or a high AADT road (consistent with the Enhanced Treatment-type thresholds listed above) and is within ¼ mile of a fresh water designated for aquatic life use or that has an existing aquatic life use.(use an Enhanced Treatment facility).

- Residential projects not otherwise needing phosphorus control as designated by USEPA, the Department of Ecology, or by the Permittee;
- Project sites discharging directly (or indirectly through a municipal separate storm sewer system) to Basic Treatment Receiving Waters (Appendix I-C of the *SWMMWW*),
- Project sites that drain to fresh water that is not designated for aquatic life use, and does not have an existing aquatic life use; and project sites that drain to waters not tributary to waters designated for aquatic life use or that have an existing aquatic life use. ;
- Landscaped areas of industrial, commercial, and multi-family project sites, and parking lots of industrial and commercial project sites that do not involve pollution-generating sources (e.g., industrial activities, customer parking, storage of erodible or leachable material, wastes or chemicals) other than parking of employees' private vehicles. For developments with a mix of land use types, the Basic Treatment requirement shall apply when the runoff from the areas subject to the Basic Treatment requirement comprise 50% or more of the total runoff within a threshold discharge area.

Treatment Facility Sizing

Size stormwater treatment facilities for the entire area that drains to them, even if some of those areas are not pollution-generating, or were not included in the project site threshold decisions (Section 3 of this appendix) or the treatment threshold decisions of this minimum requirement.

Water Quality Design Storm Volume: The volume of runoff predicted from a 24-hour storm with a 6-month return frequency (a.k.a., 6-month, 24-hour storm). Wetpool facilities are sized based upon the volume of runoff predicted through use of the Natural Resource Conservation Service curve number equations in Chapter 2 of Volume III of the *SWMMWW*), for the 6-month, 24-hour storm. Alternatively, when using an approved continuous runoff model, the water quality design storm volume shall be equal to the simulated daily volume that represents the upper limit of the range of daily volumes that accounts for 91% of the entire runoff volume over a multi-decade period of record.

Water Quality Design Flow Rate

1. **Preceding Detention Facilities or when Detention Facilities are not required:**

   The flow rate at or below which 91% of the runoff volume, as estimated by an approved continuous runoff model, will be treated. Design criteria for treatment facilities are assigned to achieve the applicable performance goal (e.g., 80% TSS removal) at the water quality design flow rate. At a minimum, 91% of the total runoff volume, as estimated by an approved continuous runoff model, must pass through the treatment facility(ies) at or below the approved hydraulic loading rate for the facility(ies).

2. **Downstream of Detention Facilities:**

   The water quality design flow rate must be the full 2-year release rate from the detention facility.

Treatment Facility Selection, Design, and Maintenance

Stormwater treatment facilities shall be:

- Selected in accordance with the process identified in Chapter 4 of Volume I, and Chapter 2 of Volume Vof the *SWMMWW*,
- Designed in accordance with the design criteria in Volume V of the *SWMMWW*, and
- Maintained in accordance with the maintenance schedule in Volume V of the *SWMMWW*.

Additional Requirements

The discharge of untreated stormwater from pollution-generating hard surfaces to ground water must not be authorized by the Permittee, except for the discharge achieved by infiltration or dispersion of runoff through use of On-site Stormwater Management BMPs in accordance with Chapter 5, Volume V and Chapter 7, Volume V of the *SWMMWW*; or by infiltration through soils meeting the soil suitability criteria in Chapter 3 of Volume III of the *SWMMWW*.

4.7 Minimum Requirement #7: Flow Control

Applicability

Except as provided below, the Permittee must require all projects provide flow control to reduce the impacts of stormwater runoff from hard surfaces and land cover conversions. The requirement below applies to projects that discharge stormwater directly, or indirectly through a conveyance system, into a fresh water body.

Flow control is not required for projects that discharge directly to, or indirectly through an MS4 to a water listed in Appendix I-E of the *SMMWW* (2012) subject to the following restrictions:

- Direct discharge to the exempt receiving water does not result in the diversion of drainage from any perennial stream classified as Types 1, 2, 3, or 4 in the State of Washington Interim Water Typing System, or Types "S", "F", or "Np" in the Permanent Water Typing System, or from any category I, II, or III wetland; and
- Flow splitting devices or drainage BMP's are applied to route natural runoff volumes from the project site to any downstream Type 5 stream or category IV wetland:
    - Design of flow splitting devices or drainage BMP's will be based on continuous hydrologic modeling analysis. The design will assure that flows delivered to Type 5 stream reaches will approximate, but in no case exceed, durations ranging from 50% of the 2-year to the 50-year peak flow.
    - Flow splitting devices or drainage BMP's that deliver flow to category IV wetlands will also be designed using continuous hydrologic modeling to preserve pre-project wetland hydrologic conditions unless specifically waived or exempted by regulatory agencies with permitting jurisdiction; and
- The project site must be drained by a conveyance system that is comprised entirely of manmade conveyance elements (e.g., pipes, ditches, outfall protection, etc.) and extends to the ordinary high water line of the exempt receiving water; and
- The conveyance system between the project site and the exempt receiving water shall have sufficient hydraulic capacity to convey discharges from future build-out conditions (under current zoning) of the site, and the existing condition from non-project areas from which runoff is or will be collected; and
- Any erodible elements of the manmade conveyance system must be adequately stabilized to prevent erosion under the conditions noted above.

If the discharge is to a stream that leads to a wetland, or to a wetland that has an outflow to a stream, both this minimum requirement (Minimum Requirement #7) and Minimum Requirement #8 apply.

Permittees may petition Ecology to exempt projects in additional areas. A petition must justify the proposed exemption based upon a hydrologic analysis that demonstrates that the potential stormwater runoff from the exempted area will not significantly increase the erosion forces on the stream channel nor have near-field impacts.

Thresholds

When assessing a project against the following thresholds, consider only those impervious, hard, and pervious surfaces that are subject to this minimum requirement as determined in Section 3 of this Appendix.

The following circumstances require achievement of the standard flow control requirement for western Washington :

- Projects in which the total of effective impervious surfaces is 10,000 square feet or more in a threshold discharge area, or
- Projects that convert ¾ acres or more of vegetation to lawn or landscape, or convert 2.5 acres or more of native vegetation to pasture in a threshold discharge area, and from which there is a surface discharge in a natural or man-made conveyance system from the site, or
- Projects that through a combination of hard surfaces and converted vegetation areas cause a 0.10 cubic feet per second (cfs) increase or greater in the 100-year flow frequency from a threshold discharge area as estimated using the Western Washington Hydrology Model or other approved model and one-hour time steps (or a 0.15 cfs increase or greater using 15-minute time steps).[4]

Standard Flow Control Requirement

Stormwater discharges shall match developed discharge durations to pre-developed durations for the range of pre-developed discharge rates from 50% of the 2-year peak flow up to the full 50-year peak flow. The pre-developed condition to be matched shall be a forested land cover unless:

- Reasonable, historic information is available that indicates the site was prairie prior to settlement (modeled as "pasture" in the Western Washington Hydrology Model); or
- The drainage area of the immediate stream and all subsequent downstream basins have had at least 40% total impervious area since 1985. In this case, the pre-developed condition to be matched shall be the existing land cover condition. The map in Appendix I-G of the *SMMWW* (2012) depicts those areas which meet this criterion. Where basin-specific studies determine a stream channel to be unstable, even though the above criterion is met, the pre-developed condition assumption shall be the "historic" land cover condition, or a land cover condition commensurate with achieving a target flow regime identified by an approved basin study.

This standard requirement is waived for sites that will reliably infiltrate all the runoff from hard surfaces and converted vegetation areas.

Western Washington Alternative Requirement

An alternative requirement may be established through application of watershed-scale hydrological modeling and supporting field observations. Possible reasons for an alternative flow control requirement include:

[4] The 0.10 cfs (one-hour time steps) or 0.15 cfs (15-minute time steps) increase should be a comparison of the post-project runoff to the existing condition runoff. For the purpose of applying this threshold, the existing condition is either the pre-project land cover, or the land cover that existed at the site as of a date when the local jurisdiction first adopted flow control requirements into code or rules.

- Establishment of a stream–specific threshold of significant bedload movement other than the assumed 50% of the 2-year peak flow;
- Zoning and Land Clearing Ordinance restrictions that, in combination with an alternative flow control standard, maintain or reduce the naturally occurring erosive forces on the stream channel; or
- A duration control standard is not necessary for protection, maintenance, or restoration of designated and existing beneficial uses or Clean Water Act compliance.

See Section 7 Basin/Watershed Planning of this Appendix for details on how alternative flow control requirements may be established.

Additional Requirement

Flow Control BMPs shall be selected, designed, and maintained in accordance with Volume III of the *SWMMWW* or an approved equivalent.

4.8 Minimum Requirement #8: Wetlands Protection

Applicability

The requirements below apply only to projects whose stormwater discharges into a wetland, either directly or indirectly through a conveyance system.

Thresholds

The thresholds identified in Minimum Requirement #6 – Runoff Treatment, and Minimum Requirement #7 – Flow Control shall also be applied to determine the applicability of this requirement to discharges to wetlands.

Standard Requirement

Projects shall comply with Guide Sheets #1 through #3 in Appendix I-D of the *SWMMWW*. The hydrologic analysis shall use the existing land cover condition to determine the existing hydrologic conditions unless directed otherwise by a regulatory agency with jurisdiction.

Additional Requirements

Stormwater treatment and flow control facilities shall not be built within a natural vegetated buffer, except for:

- Necessary conveyance systems as approved by the Permittee; or
- As allowed in wetlands approved for hydrologic modification and/or treatment in accordance with Guide Sheet 2 in Appendix I-D of the *SWMMWW*.

An adopted and implemented basin plan prepared in accordance with the provisions of Section 7 of this Appendix may be used to develop requirements for wetlands that are tailored to a specific basin.

4.9 Minimum Requirement #9: Operation and Maintenance

Permittees must require an operation and maintenance manual that is consistent with the provisions in Volume V of the *SWMMWW* for proposed stormwater facilities and BMPs. The party (or parties) responsible for maintenance and operation shall be identified in the operation and maintenance manual. For private facilities approved by the Permittee, a copy of the operation and maintenance manual shall be retained on-site or within reasonable access to the site, and shall be transferred with the property to the new owner. For public facilities, a copy of the operation and maintenance manual shall be retained in the appropriate department. A log of maintenance activity that indicates what actions were taken shall be kept and be available for inspection by the local government.

Section 5. Adjustments

Adjustments to the Minimum Requirements may be granted by the Permittee provided that a written finding of fact is prepared, that addresses the following:

- The adjustment provides substantially equivalent environmental protection.
- Based on sound Engineering practices, the objectives of safety, function, environmental protection and facility maintenance, are met.

Section 6. Exceptions/Variances

Exceptions/variances (exceptions) to the Minimum Requirements may be granted by the Permittee following legal public notice of an application for an exception or variance, legal public notice of the Permittee's decision on the application, and written findings of fact that documents the Permittees determination to grant an exception. Permittees shall keep records, including the written findings of fact, of all local exceptions to the Minimum Requirements.

Project-specific design exceptions based on site-specific conditions do not require prior approval of Ecology. The Permittee must seek prior approval by Ecology for any jurisdiction-wide exception.

The Permittee may grant an exception to the minimum requirements if such application imposes a severe and unexpected economic hardship. To determine whether the application imposes a severe and unexpected economic hardship on the project applicant, the Permittee must consider and document with written findings of fact the following:

- The current (pre-project) use of the site, and

- How the application of the minimum requirement(s) restricts the proposed use of the site compared to the restrictions that existed prior to the adoption of the minimum requirements; and
- The possible remaining uses of the site if the exception were not granted; and
- The uses of the site that would have been allowed prior to the adoption of the minimum requirements; and
- A comparison of the estimated amount and percentage of value loss as a result of the minimum requirements versus the estimated amount and percentage of value loss as a result of requirements that existed prior to adoption of the minimum requirements; and
- The feasibility for the owner to alter the project to apply the minimum requirements.

In addition any exception must meet the following criteria:

- The exception will not increase risk to the public health and welfare, nor be injurious to other properties in the vicinity and/or downstream, and to the quality of waters of the state; and
- The exception is the least possible exception that could be granted to comply with the intent of the Minimum Requirements.

Section 7. Basin/Watershed Planning

Basin/Watershed planning may be used by the Permittee to tailor Minimum Requirement #5 On-site Stormwater Management, Minimum Requirement #6 Runoff Treatment, Minimum Requirement #7 Flow Control, and/or Minimum Requirement #8 Wetlands Protection. Basin planning may also be used to demonstrate an equivalent level of treatment, flow control, and/or wetland protection through the construction and use of regional stormwater facilities.

Basin planning provides a mechanism by which the minimum requirements and implementing BMP's can be evaluated and refined based on an analysis of a basin or watershed. Basin plans may be used to develop control strategies to address impacts from future development and to correct specific problems whose sources are known or suspected. Basin plans can be effective at addressing both long-term cumulative impacts of pollutant loads and short-term acute impacts of pollutant concentrations, as well as hydrologic impacts to streams, wetlands, and ground water resources.

Basin planning will require the use of continuous runoff computer models and field work to verify and support the models. Permittees who are considering the use of basin/watershed plans to modify or tailor one or more of the minimum requirements are encouraged to contact Ecology early in the planning stage.

Some examples of how Basin Planning can alter the minimum requirements are given in Appendix I-A from the *SWMMWW*.

In order for a basin plan to serve as a means of modifying the minimum requirements the following conditions must be met:

- The plan must be formally adopted by all jurisdictions with responsibilities under the plan; and
- All ordinances or regulations called for by the plan must be in effect; and
- The basin plan must be reviewed and approved by Ecology.

APPENDIX 2 – Total Maximum Daily Load (TMDL) Requirements

Additional permit requirements are based on applicable TMDLs in accordance with Special Condition S7 *Compliance with Total Maximum Daily Load Requirements.*

1. WRIA 1 - Nooksack River Watershed Bacteria	Page 2
4. WRIA 5 – Stillaguamish River	Page 3
5. WRIA 7 – Snohomish River Tributaries	Page 5
6. WRIA 8 – North Creek	Page 7
7. WRIA 8 - Swamp Creek	Page 9
8. WRIA 8 - Bear-Evans Creek	Page 11
9. WRIA 8 – Cottage Lake	Page 12
10. WRIA 8 – Issaquah Creek Basin	Page 12
11. WRIA 8 – Little Bear Creek	Page 13
12. WRIA 10 – Puyallup River	Page 15
11. WRIA 10 Clarks Creek (Fecal Coliform)	Page 17
13. WRIA 10 - South Prairie Creek	Page 18
14. WRIA 11 – Nisqually River	Page 19
15. WRIA 13 – Henderson Inlet Watershed	Page 20
16. WRIA 15 – Sinclair-Dyes Inlet	Page 23
18. WRIA 22 – Grays Harbor/Chehalis River	Page 26

Name of TMDL	**Nooksack River Watershed Bacteria TMDL**
Document(s) for TMDL	*Nooksack River Watershed Bacteria Total Maximum Daily Load*, June 2000. Ecology Publication No. 00-10-036 EPA approval date: 8-Aug. 2000 Nooksack River Watershed Bacteria Total Maximum Daily Load Detailed Implementation Plan, January 2002. Ecology Publication No. 01-10-060 http://www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyWria/TMDLbyWria.html
Location of Original 303(d) Listings	WA-01-1010, WA-01-1012, WA-01-1014, WA-01-1015, WA-01-1016, WA-01-1110, WA-01-1111, WA-01-1115, WA-01-1116, WA-01-1117, WA-01-1118, WA-01-1119, WA-01-1120, WA-01-1125, AR42TO, BX84LO, UZ70KA, LLPL
Area Where TMDL Requirements Apply	TMDL coverage includes areas served by an MS4 draining to the Nooksack River and its tributaries, Fishtrap Creek, Bertrand Creek, Double Ditch drain, Duffner Ditch, Bender road ditch, between Nugents Corner and Marine Drive.
Parameter(s)	Fecal Coliform.
EPA Approval Date	August 8, 2000
MS4 Permittee:	**Phase II Permit: City of Ferndale WAR04-5552** **Phase II Permit: City of Lynden**

Actions Required

City of Ferndale

Continue bacteria sampling under Ecology-approved *Stormwater Quality Monitoring for Fecal Coliform bacteria QAPP* dated 6/19/2009.

- Once the City of Ferndale reduces fecal coliform bacteria below state water quality standards in the current outfall sampling area, the City of Ferndale should designate a new representative area for continued fecal coliform sampling at MS4 outfalls.
- With each annual report, the City of Ferndale shall submit an up to date Stormwater Capital Improvement plan to address existing deficiencies in the stormwater treatment and conveyance system.

City of Lynden

The City of Lynden shall designate a high priority area discharging to its MS4 system for fecal coliform sampling at a representative outfall location, and submit a Stormwater Capital Improvement Plan with each annual report.

- City of Lynden shall designate a high priority sampling location from an MS4 outfall.
- City of Lynden shall submit a fecal coliform Quality Assurance Project Plan (QAPP) to Ecology for review and approval by December 1, 2013. Monitoring shall be ongoing from March 2014 to the end of the permit term.
- With each annual report, City of Lynden shall submit the monitoring results and an up to date Stormwater Capital Improvement Plan to address existing deficiencies in the stormwater treatment and conveyance system.

Name of TMDL	**Stillaguamish River**
EPA Approved Document(s) for TMDL	*Stillaguamish River Watershed Fecal Coliform, Dissolved Oxygen, pH, Arsenic, and Mercury Total Maximum Daily Load (Water Cleanup Plan) - Submittal Report*, May 2005, Ecology Publication No. 05-10-044. http://www.ecy.wa.gov/biblio/0510044.html *Stillaguamish River Watershed Fecal Coliform, Dissolved Oxygen, pH, Arsenic, and Mercury Total Maximum Daily Load (Water Cleanup Plan) - Water Quality Implementation Plan*, June 2007, Ecology Publication No. 07-10-033. http://www.ecy.wa.gov/biblio/0710033.html
Location of Original 303(d) Listings	QJ28UC, HD76OJ, JU33JU, GH05SX, IJ55EP, VJ74AO, 390KRD, OT80TY, QE93BW, ZO73WL, WO38NV, SN06ZT, LU17DC
Area Where TMDL Requirements Apply	Requirements apply in all areas regulated under the Permittees' municipal stormwater permit and draining to fresh or marine waters within Water Resource Inventory Area (WRIA) 5
Parameter	Fecal Coliform, Dissolved Oxygen
EPA Approval Date	June 21, 2005
MS4 Permittee	Phase I Permit: Snohomish County Phase II Permit: Arlington

Actions Required

Business Inspections: Each Permittee shall inspect commercial animal handling areas and commercial composting facilities to ensure implementation of source control BMPs for bacteria. *Commercial animal handling areas* are associated with Standard Industrial Code (SIC) 074 and 075 and include veterinary and pet care/boarding services, animal slaughtering, and support activities for animal production. Facilities where the degradation and transformation of organic

solid waste takes place under controlled conditions designed to promote aerobic decomposition are considered *composting facilities* (definition in accordance with Chapter 173-350 WAC). All qualifying facilities shall be inspected by August 1, 2016 Permittees shall implement an ongoing inspection program to re-inspect facilities with bacteria source control problems a minimum of every three years.

Public Education and Outreach: Each Permittee shall conduct public education and outreach activities to increase awareness of bacterial pollution problems and promote proper pet waste management behavior.

Operations & Maintenance: Each Permittee shall install and maintain animal waste collection and/or education stations at municipal parks and other Permittee owned and operated lands reasonably expected to have substantial domestic animal (dog and horse) use and the potential for pollution of stormwater.

IDDE Field Screening: Each Permittee shall conduct illicit discharge detection and elimination (IDDE) field screening for bacteria sources in MS4 subbasins which discharge to surface waters in the area where these TMDL requirements apply. Phase II cities shall screen 100% of these MS4 subbasins by the expiration date of the permit. Snohomish County shall screen 50% of rural MS4 basins in the TMDL area by the expiration date of the permit unless the option to combine this requirement with the surface water monitoring requirement is selected below. Permittees shall implement the schedules and activities identified in S5.C.8 of the Phase I permit or S5.C.3 of the Western Washington Phase II permit in response to any illicit discharges found.

Surface Water Monitoring: Each Permittee shall select surface water monitoring location(s) as appropriate for characterization and long term trends evaluation of fecal coliform. Each Permittee shall submit a draft QAPP to Ecology for review and approval, no later than February 2, 2015. If Ecology does not request changes within 60 days, the draft QAPP is considered approved. At a minimum, the monitoring program shall:

- Begin by August 1, 2015.
- Collect 12 samples in at least one location per calendar year.
- Submit available data to the Environmental Information Management (EIM) database by May 31 of each year.
- Provide a data summaries and narrative evaluation of the data in each annual report's TMDL summary.
- Be documented in a QAPP which follows *Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies*, July 2004, Ecology Publication No. 04-03-030

Permittees shall follow Ecology-approved QAPPs unless changes are approved by Ecology. Permittees subject to multiple TMDL monitoring requirements may conduct an integrated monitoring program in accordance with an Ecology-approved QAPP. Snohomish County may combine the targeted IDDE field screening requirement, above, with the surface water monitoring requirement as documented in the County's microbial water quality assessment (MWQA), or similar, program per an Ecology-approved QAPP.

Name of TMDL	**Snohomish River Tributaries**
EPA Approved Document(s) for TMDL	*Water Quality Assessment of Tributaries to the Snohomish River and Nonpoint Source Pollution TMDL*, September 1997, Ecology Publication No. 97-334. www.ecy.wa.gov/biblio/97334.html *Snohomish River Tributaries Fecal Coliform Total Maximum Daily Load Submittal Report*, June 2001, Ecology publication No. 00-10-087. www.ecy.wa.gov/biblio/0010087.html *Lower Snohomish River Tributaries Fecal Coliform Bacterial Total Maximum Daily Load: Detailed Implementation Plan*, June 2003, Ecology Publication No. 03-10-031. www.ecy.wa.gov//biblio/0310031.html
Location of Original 303(d) Listings	WA-07-1012, WA-07-015, WA-07-1052, WA-07-1163WA-07-1163, WA-07-1030 and WA-07-040
Area Where TMDL Requirements Apply	Requirements apply in all areas regulated under the Permittees' municipal stormwater permit and draining to the WASWIS segment number, and all upstream tributaries within the jurisdiction of the Permittee and within the geographic area covered by this permit contributing to waterbodies: Allen Creek, YT94RF: Quilceda Creek, TH58TS: French Creek, XZ24XU: Woods Creek, FZ74HO: Pilchuck River, NF79WA: Marshland Watershed, XW79FQ.
Parameter	Fecal Coliform
EPA Approval Date	August 9, 2001
MS4 Permittee	Phase I Permit: Snohomish County Phase II Permit: Granite Falls, Lake Stevens, Monroe, Snohomish, Marysville, Arlington, Everett

Actions Required

Business Inspections: Each Permittee shall inspect commercial animal handling areas and commercial composting facilities to ensure implementation of source control BMPs for bacteria. *Commercial animal handling areas* are associated with Standard Industrial Code (SIC) 074 and 075 and include veterinary and pet care/boarding services, animal slaughtering, and support activities for animal production. Facilities where the degradation and transformation of organic solid waste takes place under controlled conditions designed to promote aerobic decomposition are considered *composting facilities* (definition in accordance with Chapter 173-350 WAC). All qualifying facilities shall be inspected by August 1, 2016. Permittees shall implement an ongoing inspection program to re-inspect facilities with bacteria source control problems a minimum of every three years.

Public Education and Outreach: Each Permittee shall conduct public education and outreach activities to increase awareness of bacterial pollution problems and promote proper pet waste management behavior.

Operations & Maintenance: Each Permittee shall install and maintain animal waste collection and/or education stations at municipal parks and other Permittee owned and operated lands reasonably expected to have substantial domestic animal (dog and horse) use and the potential for pollution of stormwater.

IDDE: Permittees conducting IDDE-related field screening under S5.C.8 of the Phase I permit or S5.C.3 of the Western Washington Phase II permit shall screen for bacteria sources in any screened MS4 subbasins which discharge to surface waters in the TMDL area.

Targeted Source Identification & Elimination: By February 2, 2014, each Permittee shall review the fecal coliform data collected per approved QAPPs under the 2007 Permit. The purpose of this review is to identify a minimum of one high priority area (such as a tributary or a stream segment) that will be the focus of source identification and elimination efforts during this permit cycle. Each Permittee shall prepare written documentation of this review and the identified high priority area; documentation shall be submitted with the Annual Report for 2014. Permittees shall begin to implement source identification and elimination efforts in the MS4 subbasins discharging to the identified high priority area no later than August 1, 2014. Permittees are encouraged to address potential bacteria pollution sources not associated with the MS4. Stormwater quality sampling for bacteria sources is required as part of this focused source identification and elimination effort. Permittees shall implement the schedules and activities identified in S5.C.8 of the Phase I permit or S5.C.3 of the Western Washington Phase II permit in response to any illicit discharges found. Each annual report's TMDL summary shall include qualitative and quantitative information about the source identification and elimination activities, including procedures followed and sampling results, implemented in the selected high priority area(s).

Surface Water Monitoring: Each Permittee shall review the fecal coliform data collected per approved QAPPs under the 2007 Permit and select surface water monitoring location(s) as appropriate for continued characterization and long term trends evaluation of fecal coliform. Each Permittee shall submit a draft revised QAPP to Ecology for review and approval, no later than February 2, 2015. If Ecology does not request changes within 60 days, the draft QAPP is considered approved. At a minimum, the monitoring program shall:

- Begin by August 1, 2015.
- Collect 12 samples in at least one location per calendar year.
- Submit available data to the Environmental Information Management (EIM) database by May 31 of each year.
- Provide data summaries and narrative evaluation of the data in each annual report's TMDL summary.
- Be documented in a QAPP which follows *Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies*, July 2004, Ecology Publication No. 04-03-030.

Permittees shall follow Ecology-approved QAPPs unless changes are approved by Ecology. Permittees subject to multiple TMDL monitoring requirements may conduct an integrated monitoring program in accordance with an Ecology-approved QAPP. Snohomish County may combine the high priority area source identification and elimination requirement with the surface water monitoring requirement as documented in the County's microbial water quality assessment (MWQA), or similar, program per an Ecology-approved QAPP.

Name of TMDL	**North Creek**
EPA Approved Document(s) for TMDL	*North Creek Watershed: Total Maximum Daily Load Evaluation for Fecal Coliform Bacteria*, June 2001, Ecology Publication No. 01-03-020. http://www.ecy.wa.gov/biblio/0103020.html *North Creek Fecal Coliform Total Maximum Daily Load Submittal Report*, June 2002, Ecology publication No. 02-10-020. http://www.ecy.wa.gov/biblio/0210020.html *North Creek Fecal Coliform Bacteria Total Maximum Daily Load: Detailed Implementation Plan*, October 2003, Ecology Publication No. 03-10-047. http://www.ecy.wa.gov/biblio/0310047.html
Location of Original 303(d) Listings	WA-08-1065
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 North Creek segment of WASWIS SM74QQ.
Parameter	Fecal Coliform
EPA Approval Date	August 2, 2002
MS4 Permittee	Phase I Permit: Snohomish County Phase II Permit: Everett, Bothell, Mill Creek

Actions Required

Business Inspections: Each Permittee shall inspect commercial animal handling areas and commercial composting facilities to ensure implementation of source control BMPs for bacteria. *Commercial animal handling areas* are associated with Standard Industrial Code (SIC) 074 and 075 and include veterinary and pet care/boarding services, animal slaughtering, and support activities for animal production. Facilities where the degradation and transformation of organic solid waste takes place under controlled conditions designed to promote aerobic decomposition are considered *composting facilities* (definition in accordance with Chapter 173-350 WAC). All

qualifying facilities shall be inspected by August 1, 2016. Permittees shall implement an ongoing inspection program to re-inspect facilities with bacteria source control problems a minimum of every three years.

Public Education and Outreach: Each Permittee shall conduct public education and outreach activities to increase awareness of bacterial pollution problems and promote proper pet waste management behavior.

Operations & Maintenance: Each Permittee shall install and maintain animal waste collection and/or education stations at municipal parks and other Permittee owned and operated lands reasonably expected to have substantial domestic animal (dog and horse) use and the potential for pollution of stormwater.

IDDE: Permittees conducting IDDE-related field screening under S5.C.8 of the Phase I permit or S5.C.3 of the Western Washington Phase II permit shall screen for bacteria sources in any screened MS4 subbasins which discharge to surface waters in the TMDL area.

Targeted Source Identification & Elimination: By February 2, 2014, each Permittee shall review the fecal coliform data collected per approved QAPPs under the 2007 Permit. The purpose of this review is to identify a minimum of one high priority area (such as a tributary or a stream segment) that will be the focus of source identification and elimination efforts during this permit cycle. Each Permittee shall prepare written documentation of this review and the identified high priority area; documentation shall be submitted with the Annual Report for 2014. Permittees shall begin to implement source identification and elimination efforts in the MS4 subbasins discharging to the identified high priority area no later than August 1, 2014. Permittees are encouraged to address potential bacteria pollution sources not associated with the MS4. Stormwater quality sampling for bacteria sources is required as part of this focused source identification and elimination effort. Permittees shall implement the schedules and activities identified in S5.C.8 of the Phase I permit or S5.C.3 of the Western Washington Phase II permit in response to any illicit discharges found. Each annual report's TMDL summary shall include qualitative and quantitative information about the source identification and elimination activities, including procedures followed and sampling results, implemented in the selected high priority area(s).

Surface Water Monitoring: Each Permittee shall review the fecal coliform data collected per approved QAPPs under the 2007 Permit and select surface water monitoring location(s) as appropriate for continued characterization and long term trends evaluation of fecal coliform. Each Permittee shall submit a draft revised QAPP to Ecology for review and approval, no later than February 2, 2015. If Ecology does not request changes within 60 days, the draft QAPP is considered approved. At a minimum, the monitoring program shall:

- Begin by August 1, 2015.
- Collect 12 samples in at least one location per calendar year.
- Submit available data to the Environmental Information Management (EIM) database by May 31 of each year.

- Provide data summaries and narrative evaluation of the data in each annual report's TMDL summary.
- Be documented in a QAPP which follows *Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies*, July 2004, Ecology Publication No. 04-03-030.

Permittees shall follow Ecology-approved QAPPs unless changes are approved by Ecology. Permittees subject to multiple TMDL monitoring requirements may conduct an integrated monitoring program in accordance with an Ecology-approved QAPP. Snohomish County may combine the high priority area source identification and elimination requirement with the surface water monitoring requirement as documented in the County's microbial water quality assessment (MWQA), or similar, program per an Ecology-approved QAPP.

Name of TMDL	**Swamp Creek**
EPA Approved Document(s) for TMDL	*Swamp Creek Fecal Coliform Bacteria Total Maximum Daily Load: Water Quality Improvement Report and Implementation Plan*, 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

Actions Required

Business Inspections: Each Permittee shall inspect commercial animal handling areas and commercial composting facilities to ensure implementation of source control BMPs for bacteria. *Commercial animal handling areas* are associated with Standard Industrial Code (SIC) 074 and 075 and include veterinary and pet care/boarding services, animal slaughtering, and support activities for animal production. Facilities where the degradation and transformation of organic solid waste takes place under controlled conditions designed to promote aerobic decomposition are considered *composting facilities* (definition in accordance with Chapter 173-350 WAC). All qualifying facilities shall be inspected by August 1, 2016. Permittees shall implement an ongoing inspection program to re-inspect facilities with bacteria source control problems a minimum of every three years.

Public Education and Outreach: Each Permittee shall conduct public education and outreach activities to increase awareness of bacterial pollution problems and promote proper pet waste management behavior.

Operations & Maintenance: Each Permittee shall install and maintain animal waste collection and/or education stations at municipal parks and other Permittee owned and operated lands reasonably expected to have substantial domestic animal (dog and horse) use and the potential for pollution of stormwater.

IDDE: Permittees conducting IDDE-related field screening under S5.C.8 of the Phase I permit or S5.C.3 of the Western Washington Phase II permit shall screen for bacteria sources in any screened MS4 subbasins which discharge to surface waters in the TMDL area.

Targeted Source Identification & Elimination: By February 2, 2014, each Permittee shall review the fecal coliform data collected per approved QAPPs under the 2007 Permit. The purpose of this review is to identify a minimum of one high priority area (such as a tributary or a stream segment) that will be the focus of source identification and elimination efforts during this permit cycle. Each Permittee shall prepare written documentation of this review and the identified high priority area; documentation shall be submitted with the Annual Report for 2014. Permittees shall begin to implement source identification and elimination efforts in the MS4 subbasins discharging to the identified high priority area no later than August 1, 2014. Permittees are encouraged to address potential bacteria pollution sources not associated with the MS4. Stormwater quality sampling for bacteria sources is required as part of this focused source identification and elimination effort. Permittees shall implement the schedules and activities identified in S5.C.8 of the Phase I permit or S5.C.3 of the Western Washington Phase II permit in response to any illicit discharges found. Each annual report's TMDL summary shall include qualitative and quantitative information about the source identification and elimination activities, including procedures followed and sampling results, implemented in the selected high priority area(s).

Surface Water Monitoring: Each Permittee shall review the fecal coliform data collected per approved QAPPs under the 2007 Permit and select surface water monitoring location(s) as appropriate for continued characterization and long term trends evaluation of fecal coliform. Each Permittee shall submit a draft revised QAPP to Ecology for review and approval, no later than February 2, 2015. If Ecology does not request changes within 60 days, the draft QAPP is considered approved. At a minimum, the monitoring program shall:

- Begin by August 1, 2015.
- Collect 12 samples in at least one location per calendar year.
- Submit available data to the Environmental Information Management (EIM) database by May 31 of each year.
- Provide data summaries and narrative evaluation of the data in each annual report's TMDL summary.
- Be documented in a QAPP which follows *Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies*, July 2004, Ecology Publication No. 04-03-030.

Permittees shall follow Ecology-approved QAPPs unless changes are approved by Ecology. Permittees subject to multiple TMDL monitoring requirements may conduct an integrated monitoring program in accordance with an Ecology-approved QAPP. Snohomish County may combine the high priority area source identification and elimination requirement with the surface water monitoring requirement as documented in the County's microbial water quality assessment (MWQA), or similar, program per an Ecology-approved QAPP.

Name of TMDL	**Bear-Evans Watershed**
Document(s) for TMDL	*Bear-Evans Watershed Fecal Coliform Bacteria Total Maximum Daily Load, Water Quality Improvement Report*, June 2008, Ecology Publication No. 08-10-026. https://fortress.wa.gov/ecy/publications/summarypages/0810026.html *Bear-Evans Watershed Temperature, Dissolved Oxygen and Fecal Coliform Bacteria Total Maximum Daily Load, Water Quality Implementation Plan*, March 2011, Ecology Publication No. 11-10-024. http://www.ecy.wa.gov/biblio/1110024.html
Location of Original 303(d) Listings	Bear Creek (EW54VY, BA64JJ, WR69YU)) Cottage Lake Creek (NO74J5) Unnamed Tributary to Bear Creek (EU47RU) Evans Creek (MI67EG)
Area Where TMDL Requirements Apply	Bear Creek and Evans Creek watersheds (includes Cottage Lake watershed)
Parameter	Fecal Coliform
EPA Approval Date	August 11, 2008
MS4 Permittee	Phase I: King County Phase II: No actions identified for Phase II Permittees

Actions Required

King County

- Install and maintain animal waste education and/or collection stations at municipal parks and other Permittee owned and operated lands reasonably expected to have substantial domestic animal (dog and horse) use and the potential for pollution of stormwater.
- Designate areas discharging via the MS4 to the TMDL area as high priority areas for illicit discharge detection and elimination. Complete IDDE field screening for bacteria sources in 50 percent of MS4 subbasins, including rural MS4 subbasins, by February 2, 2017 and implement the schedules and activities identified in S5.C.8 of the Phase I permit for response to any illicit discharges found.

Name of TMDL	**Cottage Lake**
EPA Approved Document(s) for TMDL	*Cottage Lake, Total Phosphorus, Total Maximum Daily Load Analysis, Submittal Report*, June 2004, Ecology Publication No. 03-10-085. http://www.ecy.wa.gov/biblio/0310085.html *Cottage Lake, Total Phosphorus, Total Maximum Daily Load, Water Quality Implementation Plan*, March 2007, Ecology Publication No. 06-10-066. http://www.ecy.wa.gov/biblio/0610066.html
Location of Original 303(d) Listings	WA-08-9070 & 49ITVC
Area Where TMDL Requirements Apply	Cottage Lake and tributaries to Cottage Lake
Parameter	Total Phosphorus
EPA Approval Date	September 2004
MS4 Permittee	Phase I: King County

Action Required

King County shall apply phosphorus control treatment requirements to new and redevelopment projects, as applicable, throughout the Cottage Lake watershed, including all tributaries to Cottage Lake. King County's Department of Development and Environmental Services (DDES) shall not rely on the quarter mile/15 percent distance downstream clause in King County's Surface Water Design Manual.

Name of TMDL	**Issaquah Creek Basin Water Cleanup Plan for Fecal Coliform Bacteria**
Document(s) for TMDL	*Issaquah Creek Basin Water Cleanup Plan for Fecal Coliform Bacteria: Total Maximum Daily Load Submittal Report*, June 2004. Ecology Publication No. 04-10-055. http://www.ecy.wa.gov/pubs/0410055.pdf
Location of Original 303(d) Listings	Issaquah Creek, TF310B (WA-08-1110) North Fork Issaquah Creek, CZ80NC (WA-08-1110) Tibbetts Creek, MB51QQ, EA48LQ (WA-08-1115)
Area Where TMDL Requirements Apply	These requirements apply to areas served by MS4s within the TMDL coverage area.

Parameter(s)	Fecal Coliform Bacteria
EPA Approval Date	October 1, 2004
MS4 Permittee:	**Phase I Permit:** King County **Phase II Permit:** City of Issaquah, WAR04-5518

Actions Required

City of Issaquah

- Designate areas discharging via the MS4 to Tributary 0170 and to the Lewis Lane Outfall as the highest priority areas for illicit discharge detection and elimination routine field screening efforts. Complete field screening for bacteria sources by December 31, 2014 and implement the schedules and activities identified in S5.C.3 of the Western Washington Phase II permit for response to any illicit discharges found.
- Install and maintain pet waste education and collection stations at municipal parks and other Permittee owned and operated lands adjacent to streams. Focus on locations where people commonly walk their dogs.

King County

- Install and maintain animal waste education and/or collection stations at municipal parks and other Permittee owned and operated lands reasonably expected to have substantial domestic animal (dog and horse) use and the potential for pollution of stormwater.
- Designate areas discharging via MS4 to the TMDL area as high priority areas for illicit discharge detection and elimination. Complete IDDE field screening for bacteria sources in 50 percent of the MS4 subbasins, including rural MS4 subbasins, by August 1, 2018 and implement the schedules and activities identified in S5.C.8 of the Phase I permit for response to any illicit discharges found.

Name of TMDL	**Little Bear Creek Fecal Coliform Water Quality Improvement Project**
Document(s) for TMDL	*Little Bear Creek Fecal Coliform Total Maximum Daily Load (Water Cleanup Plan),* May 2005, Ecology Publication No. 05-10-034. http://www.ecy.wa.gov/biblio/0510034.html
Location of Original 303(d) Listings	Little Bear Creek, UT96KR (WA-08-1085).
Area Where TMDL Requirements Apply	These requirements apply to areas served by MS4s within the TMDL coverage area.

Parameter(s)	Fecal coliform bacteria
EPA Approval Date	July 1, 2005
MS4 Permittee:	Phase I Permit: Snohomish County Phase II Permit: City of Woodinville, WAR04-5545

Actions Required

City of Woodinville

- By December 31, 2014, complete field screening of Little Bear Creek to identify potential illicit discharges or connections. Conduct bacteria sampling from any flowing outfall, in accordance with protocols in *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection*, October 2004, or another methodology of comparable or improved effectiveness. Implement related schedules and activities identified in S5.C.3 of the Western Washington Phase II permit for response to any illicit discharges found.
- Confirm that pet waste collection stations are installed and maintained in all public lands/parks adjacent to Little Bear Creek.

Snohomish County

- Prioritize and conduct bacteria source identification and elimination in high priority MS4 subbasins that discharge to surface waters in the area where these TMDL requirements apply. In order to prioritize bacteria source identification and elimination activities based on surface water quality data, Snohomish County shall incorporate the Little Bear Creek watershed into the County's microbial water quality assessment (MWQA), or similar, monitoring program in accordance with the schedule for QAPP development and approval required for the Snohomish River Tributaries TMDL.
- Inspect commercial animal handling areas and commercial composting facilities to ensure implementation of source control BMPs for bacteria. *Commercial animal handling areas* are associated with Standard Industrial Code (SIC) 074 and 075 and include veterinary and pet care/boarding services, animal slaughtering, and support activities for animal production. Facilities where the degradation and transformation of organic solid waste takes place under controlled conditions designed to promote aerobic decomposition are considered *composting facilities* (definition in accordance with Chapter 173-350 WAC). All qualifying facilities must be inspected by August 1, 2016. Permittees shall implement an ongoing inspection program to re-inspect facilities with bacteria source control problems every three years.
- Conduct public education and outreach activities to increase awareness of bacterial pollution problems and promote proper pet waste management behavior.

- Install and maintain animal waste collection and/or education stations at municipal parks and other Permittee owned and operated lands reasonably expected to have substantial domestic animal (dog and horse) use and the potential for pollution of stormwater.

Name of TMDL	**Puyallup Watershed Water Quality Improvement Project**
Document(s) for TMDL	*Puyallup River Watershed Fecal Coliform Total Maximum Daily Load – Water Quality Improvement Report and Implementation Plan*, June 2011, Ecology Publication No. 11-10-040. http://www.ecy.wa.gov/biblio/1110040.html
Location of Original 303(d) Listings	Puyallup River 16712, 7498, White River 16711, 16708, 16709, Clear Creek 7501, Swan Creek 7514, Boise Creek 16706
Area Where TMDL Requirements Apply	Requirements apply in all areas regulated under the Permittees' municipal stormwater permit and discharging to water bodies listed within the specific requirement in this TMDL section.
Parameter	Fecal Coliform
EPA Approval Date	September 2011
MS4 Permittee	Phase I Permit: King County, Pierce County Phase II Permit: Auburn, Edgewood, Enumclaw, Puyallup, Sumner

Actions Required

City of Auburn

- Beginning no later than October 1, 2013, conduct twice monthly wet weather sampling of stormwater discharges to the White River at Auburn Riverside High School to determine if specific discharges from Auburn's MS4 exceed the water quality criteria for fecal coliform bacteria.
    - Data shall be collected for one wet season.
    - Data shall be collected in accordance with an Ecology-approved QAPP.
    - Data collected since EPA TMDL approval can be used to meet this requirement.
- For any of the outfalls monitored, above showing discharges that exceed water quality criteria for primary contact recreation: designate those areas discharging via the MS4 of concern as high priority areas for illicit discharge detection and elimination efforts and implement the schedules and activities identified in S5.C.3 of the Western Washington Phase II permit for response to any illicit discharges found beginning no later than August 1, 2014.
- Install and maintain pet waste education and collection stations at municipal parks and other Permittee owned and operated lands adjacent to streams. Focus on locations where people commonly walk their dogs.

City of Edgewood

- Designate areas discharging via the MS4 to Jovita Creek as the highest priority areas for illicit discharge detection and elimination routine field screening and implement the schedules and activities identified in S5.C.3 of the Western Washington Phase II permit.

City of Enumclaw

- Designate areas discharging via the MS4 to Boise Creek from creek mile 1.7 to 1.0 as the highest priority areas for illicit discharge detection and elimination routine field screening. Implement the schedules and activities identified in S5.C.3 of the Western Washington Phase II permit, and implement a pet waste education program in this area according to S5.C.1 of the permit.

King County

- Designate areas discharging via the MS4 to Boise Creek as high priority areas for illicit discharge detection and elimination. Complete IDDE field screening for bacteria sources in 100 percent of the MS4 subbasins, including rural subbasins, by February 2, 2016 and implement the schedules and activities identified in S5.C.8 of the Phase I permit for response to any illicit discharges found. Field screening must include activities for both the dry season (May through September) and the wet season (October through April).
- Inventory commercial animal handling areas (associated with Standard Industrial Code 074 and 075) in areas discharging via the MS4 to Boise Creek and conduct inspections of these areas as part of the Source Control program required in S5.C.7 of the Phase I permit. All qualifying facilities must be inspected by August 1, 2016. The Permittee shall implement an ongoing inspection program to re-inspect facilities or areas with bacteria source control problems every three years.
- Designate areas discharging via the MS4 to Jovita Creek as high priority areas for illicit discharge detection and elimination field screening, and implement the schedules and activities identified in S5.C.8 of the Phase I permit.

Pierce County

- Designate areas discharging via MS4 to Swan Creek as high priority areas for illicit discharge detection and elimination efforts. Complete field screening by December 31, 2014 and implement the schedules and activities identified in S5.C.8 of the Phase I permit.
- Designate areas discharging via MS4 to Salmon Creek as high priority areas for illicit discharge detection and elimination field screening and implement the schedules and activities identified in S5.C.8 of the Phase I permit.
- Designate areas discharging via the MS4 to Alderton Creek as high priority areas for illicit discharge detection and elimination field screening and implement the schedules and activities identified in S5.C.8 of the Phase I permit.

- Designate areas discharging via the MS4 to upper Deer Creek as high priority areas for illicit discharge detection and elimination field screening and implement the schedules and activities identified in S5.C.8 of the Phase I permit.

City of Puyallup

- Designate areas discharging via the MS4 to Deer Creek as high priority areas for illicit discharge detection and elimination field screening and implement the schedules and activities identified in S5.C.3 of the Western Washington Phase II permit. Focus investigation on field screening during dry weather (May through September).

City of Sumner

- Designate areas discharging via the MS4 to Salmon Creek as the highest priority areas for illicit discharge detection and elimination routine field screening and implement the schedules and activities identified in S5.C.3 of the Western Washington Phase II permit.

Name of TMDL	**Clarks Creek Fecal Coliform TMDL**
Document(s) for TMDL	*Clarks Creek Watershed Fecal Coliform Bacteria Total Maximum Daily Load (Water Quality Improvement Report)*, May 2008, Ecology Publication No. 07-10-110. http://www.ecy.wa.gov/biblio/0710110.html *Clarks Creek Watershed Fecal Coliform Bacteria Total Maximum Daily Load (Water Quality Implementation Plan)*, December 2009, Ecology Publication No. 09-10-081. http://www.ecy.wa.gov/biblio/0910081.html
Location of Original 303(d) Listings	Clarks Creek 7497, 7501, Meeker Creek 7508, 7507
Area Where TMDL Requirements Apply	Requirements apply in all areas regulated under the Permittees' municipal stormwater permit and discharging to water bodies listed within the specific requirement in this TMDL section.
Parameter	Fecal Coliform
EPA Approval Date	June 4, 2008
MS4 Permittee	Phase II Permit: Puyallup

Actions Required

City of Puyallup

- Designate areas discharging via the MS4 to Meeker Creek as high priority areas for illicit discharge detection and elimination field screening and implement the schedules and activities identified in S5.C.3 of the Western Washington Phase II permit.

Name of TMDL	**South Prairie Creek Water Quality Improvement Project**
Document(s) for TMDL	*South Prairie Creek Bacteria and Temperature Total Maximum Daily Load (Water Cleanup Plan): Submittal Report*, June 2003, Ecology Publication No. 03-10-055. http://www.ecy.wa.gov/biblio/0310055.html *South Prairie Creek Bacteria and Temperature Total Maximum Daily Load (Water Cleanup Plan): Detailed Implementation Plan*, July 2006, Ecology Publication No. 06-10-018. http://www.ecy.wa.gov/biblio/0610018.html
Location of Original 303(d) Listings	South Prairie Creek VC19MO (WA-10-1085), Wilkeson Creek NX07HW (WA-10-1087)
Area Where TMDL Requirements Apply	Requirements apply in all areas regulated under the Permittees' municipal stormwater permit and discharging to water bodies listed within the specific requirement in this TMDL section.
Parameter	Fecal Coliform
EPA Approval Date	August 6, 2003
MS4 Permittee	Phase I Permit: Pierce County Phase II Permit: Buckley

Actions Required

Pierce County

- Designate areas discharging via the MS4 to Tributary 1 upstream of SR162 as high priority areas for illicit discharge detection and elimination efforts. Complete field screening by December 31, 2013 and implement the schedules and activities identified in S5.C.8 of the Phase I permit for response to any illicit discharges found. Investigation must include activities for both the dry season (May through September) and the wet season (October through April).
- Designate areas discharging to Pierce County MS4 outfalls and conveyances upstream of SR165 along Spiketon Road, Mundy Loss Road, and Spiketon Ditch Road as high priority areas for illicit discharge detection and elimination efforts. Complete field screening by

December 31, 2013 and implement the schedules and activities identified in S5.C.8 of the Phase I permit for response to any illicit discharges found. Investigation must include activities for both the dry season (May through September) and the wet season (October through April).

City of Buckley

- Designate areas discharging via the MS4 to Spiketon Creek as the highest priority areas for illicit discharge detection and elimination routine field screening and implement the schedules and activities identified in S5.C.3 of the Western Washington Phase II permit.

Name of TMDL	**Nisqually River Basin Water Quality Improvement Project**
Document(s) for TMDL	*Nisqually Watershed Bacteria and Dissolved Oxygen Total Maximum Daily Load (Water Cleanup Plan): Submittal Report*, June 2005, Ecology Publication No. 05-10-040. http://www.ecy.wa.gov/biblio/0510040.html *Nisqually River Basin Fecal Coliform Bacteria and Dissolved Oxygen Total Maximum Daily Load: Water Quality Implementation Plan (WQIP)*, June 2007, Ecology Publication No. 07-10-016. http://www.ecy.wa.gov/biblio/0710016.html
Location of Original 303(d) Listings	Nisqually Reach 390KRD (WA-PS-0290), Nisqually River OE72JI (WA-11-1010), McAllister Creek LD26OX (WA-11-2000), Ohop Creek MW64EV (WA-11-1024), Red Salmon Creek NoID (WA-PS-0290)
Area Where TMDL Requirements Apply	Requirements apply in all areas regulated under the Permittees' municipal stormwater permit and discharging to water bodies listed within the specific requirement in this TMDL section.
Parameter	Fecal Coliform, Dissolved Oxygen
EPA Approval Date	August 5, 2005
MS4 Permittee	Phase I Permit: Pierce County Phase II Permit: Thurston County

Actions Required

Pierce County

- Designate areas discharging via the MS4 to Ohop Creek and Lynch Creek as high priority areas for illicit discharge detection and elimination efforts. Complete field screening by December 31, 2014 and implement the schedules and activities identified in S5.C.8 of the Phase I permit for response to any illicit discharges found.

Thurston County

- Annually implement the following best management practices for reducing fecal coliform bacteria in areas discharging to the Nisqually Reach via the MS4 in accordance with S5.C.1 and S5.C.5 of the Western Washington Phase II Permit:
    a. Reach households in targeted watershed through mailings, door hangers etc. to increase awareness of the sources of bacteria pollution.
    b. Adequately maintain vegetation around stormwater facilities, ditches, and ponds.

Name of TMDL	**Henderson Inlet Watershed Fecal Coliform Bacteria Water Quality Improvement Project**
Document(s) for TMDL	*Henderson Inlet Watershed Fecal Coliform Bacteria, Dissolved Oxygen, pH, and Temperature Total Maximum Daily Load Study*, March 2006, Ecology Publication No. 06-03-012. http://www.ecy.wa.gov/biblio/0603012.html *Henderson Inlet Watershed Fecal Coliform Bacteria, Dissolved Oxygen, and pH Total Maximum Daily Load: Water Quality Improvement Report Implementation Strategy*, October 2006, Ecology Publication No. 06-10-058. http://www.ecy.wa.gov/biblio/0610058.html *Henderson Inlet Watershed Fecal Coliform Bacteria Total Maximum Daily Load: Water Quality Implementation Plan*, July 2008, Ecology Publication No. 08-10-040. http://www.ecy.wa.gov/biblio/0810040.html
Location of Original 303(d) Listings	Henderson Inlet 390KRD (WA-13-0010), Dobbs Creek UNK000 (WA-13-1400), Sleepy Creek UNK000 (WA-13-1700), Woodard Creek MJ83ZH (WA-13-1600), Woodland Creek JH31LN (WA-13-1500)
Area Where TMDL Requirements Apply	Requirements apply in all areas regulated under the permittees municipal stormwater permit and discharging to water bodies listed within the specific requirement in this TMDL section.
Parameter	Fecal Coliform, Dissolved Oxygen, pH, Temperature
EPA Approval Date	January 8, 2007
MS4 Permittee	Phase II Permit: Lacey, Olympia, Thurston County

Actions Required

Thurston County

1. Annually implement the following best management practices in areas discharging to the Henderson Inlet via the MS4 in accordance with S5.C.4 of the Western Washington Phase II Permit:

   a. Require phosphorus control for new and redevelopment projects that discharge via the MS4 to Woodard Creek and meet the project thresholds in Appendix 1, Minimum Requirement #6: Runoff Treatment of the Western Washington Phase II permit.
2. Annually implement the following best management practices for reducing fecal coliform in areas discharging to the Henderson Inlet via the MS4 in accordance with S5.C.3 of the Western Washington Phase II Permit:
   a. Designate areas discharging via the MS4 to Woodland Creek from river mile 1.6 to 0.2 and Jorgenson Creek upstream of Pleasant Glade Road as high priority areas for illicit discharge detection and elimination field screening. Implement the schedules and activities identified in S5.C.3 of the Western Washington Phase II permit. Investigation shall include stormwater ponds and on-site septic systems as potential fecal coliform sources, and sampling of wet-weather discharges (November through April).
3. Annually implement the following best management practices for reducing fecal coliform in areas discharging to the Henderson Inlet via the MS4 in accordance with S5.C.1 of the Western Washington Phase II Permit.
   a. Continue supporting the Watershed Septic System Operations and Maintenance Program. Develop a targeted educational plan delivering:
      i. Technical assistance to landowners through at least one presentation or workshop annually.
      ii. Technical assistance to landowners through one publication or targeted letter annually.
      iii. A resource webpage on the city's website.
   b. Continue offering public education and outreach efforts for fecal coliform reduction such as brochures, signage and pet waste stations to homeowner associations.

City of Lacey

1. Annually implement the following best management practices in areas discharging to the Henderson Inlet via the MS4 in accordance with S5.C. 1 of the Western Washington Phase II Permit:
   a. Continue the Private Stormwater Facilities Maintenance Program, providing commercial and residential stormwater facility/BMP owners educational resources for facility function and maintenance requirements.
   b. Offer bacteria pollution reduction brochures, signage and pet waste stations to homeowners associations.
   c. Maintain pet waste bag dispenser units in City parks.
   d. Install educational signage at City facilities/property.
   e. Develop a targeted educational plan for septic system owners that includes; goals, target audiences, messages, format, distribution and evaluation methods by December 31, 2016. Permittees may meet requirement individually or through regional efforts.

2. Continue developing and implementing a fecal coliform bacteria wet weather sampling program for the College Regional Stormwater Facility by December 31, 2013 in accordance with the illicit discharge detection and elimination efforts and activities identified in S5.C.3 of the Western Washington Phase II permit.
    a. Submit a plan to Ecology for approval by November 1, 2013. The sampling program shall establish a regularly scheduled sampling schedule (at least two times per year, as feasible and consistent with the city's Wet Weather Discharge Plan) during the wet season (November through April), specific sampling locations, sampling protocols, parameters, analytical methods and timelines for implementation.
    b. If sampling results indicate potential illicit discharges, conduct an investigation in accordance with S5.C.3 of the Western Washington Phase II permit.
    c. Submit a summary of sampling and investigations with each annual report.
3. Develop and implement a coordinated plan with the City of Olympia to monitor and reduce fecal coliform bacteria discharges from the Fones/Taylor wetland treatment facilities by December 31, 2014 in accordance with S5.C.3 of the Western Washington Phase II permit.
    a. Submit a program plan to Ecology that includes a timeline for implementation, sampling frequencies and identifies, at the minimum, who will be responsible for sampling, investigations and enforcement by December 31, 2013.
    b. If sampling results indicate potential illicit discharges, conduct an investigation in accordance with S5.C.3 of the Western Washington Phase II permit.
    c. Submit a summary of the coordinated efforts with sampling, investigation and enforcement actions taken with the annual reports.
4. Annually implement the following best management practices in areas discharging to the Henderson Inlet via the MS4 in accordance with S5.C.5 of the Western Washington Phase II Permit:
    - Continue re-vegetation and nuisance vegetation management along Woodland Creek and its tributaries.

City of Olympia

1. Annually implement the following BMPs in areas discharging to the Henderson Inlet via the MS4 in accordance with S5.C.4 of the Western Washington Phase II permit:
    - Require phosphorus control for new and redevelopment projects that discharge via MS4 to Woodard Creek and meet the project thresholds in Appendix 1, Minimum Requirement #6: Runoff Treatment of the Western Washington Phase II permit.
2. Develop and implement a coordinated plan with the City of Lacey to monitor and reduce fecal coliform bacteria discharges from the Fones/Taylor wetland treatment facilities by December 31, 2014 in accordance with S5.C.3 Illicit Discharge Detection and Elimination of the Western Washington Phase II permit.

a. Submit a program plan to Ecology that includes a timeline for implementation, sampling frequencies and identifies, at the minimum, who will be responsible for sampling, investigations and enforcement by December 31, 2013.
b. If sampling results indicate potential illicit discharges, conduct an investigation in accordance with S5.C.3 of the Western Washington Phase II permit.
c. Submit a summary of the coordinated efforts with sampling, investigation and enforcement actions taken with each annual report.

Name of TMDL	**Sinclair and Dyes Inlets Fecal Coliform Bacteria Total Maximum Daily Load**
Document(s) for TMDL	*Sinclair and Dyes Inlets Fecal Coliform Bacteria Total Maximum Daily Load (TMDL) Water Quality Implementation Plan*, In Draft, Ecology Publication No. 11-10-051. *Fecal Coliform Model Verification Sampling Plan (Winter 2004),* February 19, 2004. http://www.ecy.wa.gov/programs/wq/tmdl/sinclair-dyes_inlets/w2004_fc_sap_final_ecy.pdf *Fecal Coliform Total Maximum Daily Load Study Plan for Sinclair and Dyes Inlet*, October 4, 2002. http://www.ecy.wa.gov/programs/wq/tmdl/sinclair-dyes_inlets/fc_tmdl_studyplan_final_draft_print.pdf
Location of Original 303(d) Listings	Dyes Inlet & Port Washington Narrows (WA-15-0020) Gorst Creek (WA-15-4000) Blackjack Creek (WA-15-4200) Annapolis Creek (WA-15-4400) Beaver Creek (WA-15-4900) Clear Creek (WA-15-5000) Barker Creek (WA-15-5100) Sinclair Inlet (WA-15-0040)
Area Where TMDL Requirements Apply	These requirements apply to areas served by MS4s listed below within the TMDL coverage area.
Parameter(s)	Fecal coliform bacteria
EPA Approval Date	July 5, 2012
MS4 Permittee:	Phase II Permit: City of Bainbridge Island, WAR04-5503; City of Bremerton, WAR04-5507; City of Port Orchard, WAR04-5536; Kitsap County, WAR04-5546

Actions Required

City of Bainbridge Island

- If a minimum of 10 monthly ambient water quality samples collected under a previous monitoring program approved by Ecology in nearshore areas below Lynwood Center between 2011 and 2013 indicate that this area does NOT meet water quality standards, then by December 1, 2014, the City shall designate those areas discharging via MS4 either directly or to creeks that discharge to shoreline areas along Rich Passage as the highest priority areas for illicit discharge detection and elimination field screening. The City shall implement the schedules and activities identified in S5.C.3 of the Western Washington Phase II permit for response to any illicit discharges found.
- By December 31, 2016, review and, if necessary, increase the frequency of inspection and cleanout of catch basins (under S5.C.4 and 5 of the Western Washington Phase II permit) to maintain catch basin sediment levels below 60 percent full. Focus on MS4 areas that drain to nearshore areas along Rich Passage below Lynwood Center and the northern shoreline of Fletcher Bay near DOH site 457.
- Use appropriate investigative tools to ensure that contaminated stormwater is not contributing to the fecal coliform bacteria exceedances at DOH site 457, offshore Fletcher Bay.
- Install and maintain pet waste education and collection stations at Permittee owned and operated lands adjacent to stream and marine shorelines. Focus on locations where people commonly walk their dogs.

City of Bremerton

- Designate areas discharging via MS4 to Phinney and Ostrich Bay Creeks, to the eastern shoreline of Oyster Bay near DOH site 487, and to shorelines along Port Washington Narrows as the highest priority areas for illicit discharge detection and elimination routine field screening and, beginning no later than August 1, 2014 implement the schedules and activities identified in S5.C.3 of the Western Washington Phase II permit for response to any illicit discharges found.
- By December 31, 2016, review and, if necessary, increase the frequency of inspection and cleanout of catch basins (under S5.C.4 and 5 of the Western Washington Phase II permit) to maintain catch basin sediment levels below 60 percent full. Focus on MS4 areas that drain to Phinney and Ostrich Bay Creeks, to the eastern shoreline of Oyster Bay near DOH site 487 and to shorelines along Port Washington Narrows.
- Install and maintain pet waste education and collection stations at municipal parks and other Permittee owned and operated lands adjacent to stream and marine shorelines. Focus on locations where people commonly walk their dogs.

City of Port Orchard

- Designate areas discharging via MS4 to Blackjack, Annapolis, and Karcher Creeks and to shorelines along Sinclair Inlet as the highest priority areas for illicit discharge detection and elimination routine field screening and, beginning August 1, 2014, implement the associated schedules and activities identified in S5.C.3 of the Western Washington Phase II permit for response to any illicit discharges found.
- By December 31, 2016, review and, if necessary, increase the frequency of inspection and cleanout of catch basins (under S5.C.4 and 5 of the Western Washington Phase II permit to maintain catch basin sediment levels below 60% full. Focus on MS4 areas that drain to Blackjack, Annapolis, and Karcher Creeks and to shorelines along Sinclair Inlet.
- Install and maintain pet waste education and collection stations at municipal parks and other Permittee owned and operated lands adjacent to stream and marine shorelines. Focus on locations where people commonly walk their dogs.

Kitsap County

- Designate areas discharging via MS4 to Barker, Clear, Strawberry, Ostrich Bay, and Phinney creeks and shorelines at the head of Dyes Inlet as the highest priority areas for illicit discharge detection and elimination routine field screening (including agricultural land use inventories in rural areas) and, beginning no later than August 1, 2014, implement the associated schedules and activities identified in S5.C.3 of the Western Washington Phase II permit for response to any illicit discharges found. Conduct illicit discharge detection and elimination efforts in MS4 areas that discharge to Beaver, Pahrmann, Sacco, and upper Blackjack creeks and to the western shoreline of Chico Bay near DOH site 471 as resources allow.
- By December 31, 2016, review and, if necessary, increase the frequency of inspection and cleanout of catch basins (in accordance with S5.C.4 and 5 of the Western Washington Phase II permit) to maintain catch basin sediment levels below 60% full. Focus on areas within the Sinclair and Dyes Inlet watershed with closed conveyance systems and catch basins.
- Install and maintain pet waste education and collection stations at municipal parks and other Permittee owned and operated lands adjacent to stream and marine shorelines. Focus on locations where people commonly walk their dogs.

Name of TMDL	**Grays Harbor/Chehalis Watershed Fecal Coliform Bacteria Total Maximum Daily Load**
Document(s) for TMDL	*Grays Harbor/Chehalis Watershed Fecal Coliform Bacteria Total Maximum Daily Load Submittal Report*, December 2001, Ecology Publication No. 01-10-025. http://www.ecy.wa.gov/biblio/0110025.html

	Quality Assurance Project Plan: Grays Harbor Fecal Coliform Bacteria Monitoring to Characterize Water Quality in Urban Stormwater Drains, October 2010, Ecology Publication No. 10-10-066. http://www.ecy.wa.gov/biblio/1010066.html
Location of Original 303(d) Listings	Outer Grays Harbor 390KRD (WA-22-0020), Inner Grays Harbor 390KRD (WA-22-030), Inner Grays Harbor DS29ZH (WA-22-0030), Chehalis River PB33WC (WA-22-4040)
Area Where TMDL Requirements Apply	Requirements apply in all areas regulated under the Permittees' municipal stormwater permit and discharging to water bodies listed within the specific requirement in this TMDL section.
Parameter	Fecal Coliform
EPA Approval Date	December 2002
MS4 Permittee	Phase II Permit: Aberdeen

Actions Required

City of Aberdeen

1. Implement the schedules and activities identified in S5.C.1 of the Western Washington Phase II Permit. No later than February 28, 2015, develop a Public Education and Outreach and Involvement plan. The plan shall target the reduction of fecal coliform pollution by increasing public awareness, effecting behavior changes and shall include: goals, target audiences, messages, format, distribution and evaluation methods.
    a. The plan shall include at least the following elements and be fully implemented prior to the expiration date of the permit:
        i. Target the residents of the three high priority water bodies identified under the 2007-2012 permit.
        ii. Reach households in targeted watersheds through mailings, door hangers or similar outreach tools.
        iii. Reach 4-6th grade students.
    b. Design and implement a program which notifies residents, in a timely manner, when bacteria pollution that poses a public health concern (such as a wastewater overflow) reaches the MS4.
    c. Conduct two public education surveys gauging resident's knowledge of the sources of bacteria and preventing bacteria pollution. One survey should measure resident's knowledge of bacteria pollution before outreach and the other should measure knowledge and likelihood of action after outreach.

d. Design and implement a stream team program where two citizen stream teams are formed to participate in stewardship activities.
e. Install and maintain pet waste bag dispenser units and explanatory signs in public areas with dog usage.
f. By December 31, 2014 develop an inventory of sources that have potential for bacteria runoff such as manure-composting facilities, stables, kennels, etc.
    i. Develop a targeted manure management educational plan for such facility owners delivering at least one presentation or letter annually and developing a resource webpage on the city's website.

2. Designate areas discharging to the MS4 urban drains identified in the TMDL as the highest priority areas for illicit discharge detection and elimination routine field screening efforts and implement the schedules and activities identified in S5.C.3 of the Western Washington Phase II permit. Field screening and source tracing methodology (see S5.C.3.c) must be consistent with the *Quality Assurance Project Plan: Grays Harbor Fecal Coliform Bacteria Monitoring to Characterize Water Quality in Urban Stormwater Drains, October 2010*.
    a. Implement a regulatory mechanism to control pet waste.
    b. Designate areas discharging via MS4 to the following discharge points: 501-ABDN, 510-MST, and 514-MST as high priority areas for illicit discharge detection and elimination efforts.
        i. Complete field screening by December 31, 2014 and implement the schedules and priority area for illicit discharge detection and elimination field screening identified in S5.C.3 of the Western Washington Phase II permit. Investigation must include activities for both the dry season (May through October) and the wet season (November through April).
        ii. Beginning no later than October 31, 2014, conduct twice monthly wet weather sampling of the discharge points 501-ABDN, 510-MST, and 514-MST to determine if specific discharges from Aberdeen's MS4 exceed the water quality criteria for fecal coliform bacteria.
            - Data shall be collected for two wet season.
            - Data shall be collected in accordance with an Ecology-approved QAPP.
            - Samples must be analyzed using an Ecology accredited lab.
            - If sampling results indicate potential illicit discharges, conduct an investigation in accordance with S5.C.3 *Illicit Discharge Detection and Elimination* of the Western Washington Phase II permit.
            - Data shall be submitted to Ecology in an approved format with the annual reports.

Appendix 3 - Annual Report Questions for Cities, Towns and Counties

Permittees are required to submit the following information in an online annual report form, or an alternative format provided by Ecology if requested, pursuant to Special Condition S9.A.

1. **Attach** updated annual Stormwater Management Program Plan (SWMP Plan). (S5.A.2)

2. **Attach** a copy of any annexations, incorporations or boundary changes resulting in an increase or decrease in the Permittee's geographic area of permit coverage during the reporting period per S9.D.5.

3. Implemented an ongoing program to gather, track, and maintain information per S5.A.3, including costs or estimated costs of implementing the SWMP.

4. Coordinated among departments within the jurisdiction to eliminate barriers to permit compliance. (S5.A.5.b)

4b. **Attach** a written description of internal coordination mechanisms. (*Required to be submitted* no later than March 31, 2015, S5.A.5.b)

5. **Attach** description of public education and outreach efforts conducted per S5.C.1.a.i and ii.

6. Created stewardship opportunities (or partnered with others) to encourage resident participation in activities such as those described in S5.C.1.b.

7. Used results of measuring the understanding and adoption of targeted behaviors among at least one audience in at least one subject area to direct education and outreach resources and evaluate changes in adoption of targeted behaviors. (*Required* no later than February 2, 2016, S5.C.1.b)

7b. **Attach** description of how this requirement was met.

8. Describe in *Comments* field the opportunities created for the public to participate in the decision making processes involving the development, implementation and updates of the Permittee's SWMP. (S5.C.2.a)

9. Posted the updated SWMP Plan and latest annual report on your website no later than May 31. (S5.C.2.b)

9b. List the website address in *Comments* field.

10. Maintained a map of the MS4 including the requirements listed in S5.C.3.a.i.-vi.

11. Implemented a compliance strategy, including informal compliance actions as well as enforcement provisions of the regulatory mechanism described in S5.C.3.b. (S5.C.3.b.v)

12. Updated, if necessary, the regulatory mechanism to effectively prohibit illicit discharges into the MS4 per S5.C.3.b.vi. (*Required* no later than February 2, 2018)

12b. If Yes, cite the code reference in *Comments* field

13. Implemented procedures for conducting illicit discharge investigations in accordance with S5.C.3.c.i.

13b. Cite methodology in *Comments* field

14. Percentage of MS4 coverage area screened in reporting year per S5.C.3.c.i. (*Required to screen* 40% of MS4 no later than December 31, 2017 (except no later than June 30, 2018 for the City of Aberdeen) and 12% on average each year thereafter. (S5.C.3)

15. List the hotline telephone number for public reporting of spills and other illicit discharges in the *Comments* field. (S5.C.3.c.ii)

15b. Number of hotline calls received.

16. Implemented an ongoing illicit discharge training program for all municipal field staff per S5.C.3.c.iii.

17. Informed public employees, businesses, and the general public of hazards associated with illicit discharges and improper disposal of waste.

17b. Describe actions in *Comments* field. (S5.C.3.c.iv)

18. Implemented an ongoing program to characterize, trace, and eliminate illicit discharges into the MS4 per S5.C.3.d.

19. Number of illicit discharges, including illicit connections, eliminated during the reporting year. (S5.C.3.d.iv)

20. **Attach** a summary of actions taken to characterize, trace and eliminate each illicit discharge found by or reported to the permittee. For each illicit discharge, include a description of actions according to required timeline per S5.C.3.d.iv

21. Municipal illicit discharge detection staff are trained to conduct illicit discharge detection and elimination activities as described in S5.C.3.e.

22. Implemented an ordinance or other enforceable mechanism to address runoff from new development, redevelopment and construction sites per the requirements of S5.C.4.a.

23. Revised ordinance or other enforceable mechanism to effectively address runoff from new development, redevelopment and construction sites per the requirements of S5.C.4.a.i-iii. (*Required* no later than December 31, 2016, except no later than June 30, 2017 for Permittees in Lewis and Cowlitz counties, and no later than June 30, 2018 for the City of Aberdeen)

23b. Cite code reference in *Comments* field.

24. Number of exceptions granted to the minimum requirements in Appendix 1. (S5.C.4.a.i., and Section 6 of Appendix 1)

25. Number of variances granted to the minimum requirements in Appendix 1. (S5.C.4.a.i., and Section 6 of Appendix 1)

26. Reviewed *Stormwater Site Plans* for all proposed development activities that meet the thresholds adopted pursuant to S5.C.4.a.i. (S5.C.4.b.i)

26b. Number of site plans reviewed during the reporting period.

27. Inspected, prior to clearing and construction, permitted development sites that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7 *Determining Construction Site Sediment Damage Potential*, or alternatively, inspected all construction sites meeting the minimum thresholds adopted pursuant to S5.C.4.a.i. (S5.C.4.b.ii)

27b. Number of construction sites inspected per S5.C.4.b.ii.

28. Inspected permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls. (S5.C.4.b.iii)

28b. Number of construction sites inspected per S5.C.4.b.iii.

29. Number of enforcement actions taken during the reporting period (based on construction phase inspections at new development and redevelopment projects). (S5.C.4.b.ii, iii and v)

30. Inspected all permitted development sites that meet the thresholds in S5.C.4.a.i upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater facilities. (S5.C.4.b.iv)

31. Achieved at least 80% of scheduled construction-related inspections. (S5.C.4.b.ii-iv)

32. Verified a maintenance plan is completed and responsibility for maintenance is assigned for projects. (S5.C.4.b.iv)

33. Implemented provisions to verify adequate long-term operation and maintenance (O&M) of stormwater treatment and flow control BMPs/facilities that are permitted and constructed pursuant to S5.C.4. a and b. (S5.C.4.c)

34. Updated provisions to verify long-term operation and maintenance of stormwater treatment and flow control BMPs/facilities that are permitted pursuant to S5.C.4.a and b. (*Required* no later than December 31, 2016, except no later than June 30, 2017 for Permittees in Lewis and Cowlitz counties, and no later than June 30 2018 for the City of Aberdeen, S5.C.4.c.i and ii

35. Annually inspected stormwater treatment and flow control BMPs/facilities per S5.C.4.c.iii.

35b. If using reduced inspection frequency for the first time during this permit cycle, **attach** documentation per S5.C.4.c.iii

36. Inspected new residential stormwater treatment and flow control BMPs/facilities and catch basins every 6 months per S5.C.4.c.iv to identify maintenance needs and enforce compliance with maintenance standards.

37. Achieved at least 80% of scheduled inspections to verify adequate long-term O&M. (S5.C4.c.v)

38. Verified that maintenance was performed per the schedule in S5.C.4.c.vi when an inspection identified an exceedance of the maintenance standard.

38b. **Attach** documentation of any maintenance delays. (S5.C.4.c.vi)

39. Provided copies of the *Notice of Intent for Construction Activity* and *Notice of Intent for Industrial Activity* to representatives of proposed new development and redevelopment. (S5.C.4.e)

40. 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 are trained to conduct these activities. (S5.C.4.f)

41. Reviewed, revised and made effective the low impact development-related enforceable documents per S5.C.4.f.i. (*Required* by December 31, 2016, except by June 30, 2017 for Permittees in Lewis and Cowlitz counties, and by June 30, 2018 for the City of Aberdeen)

41b. **Attach** a summary of the LID review and revision process that includes the requirements listed in S5.C.4.f.ii. (*Required* with annual report due no later than March 31, 2017, except no later than March 31, 2018 for Permittees in Lewis and Cowlitz counties, and with the Fifth Year annual report for the City of Aberdeen)

42. Where applicable, participated and cooperated with the watershed-scale stormwater planning process led by a Phase I county. (S5.C.4.g)

43. Updated and implemented maintenance standards as protective, or more protective, of facility function as those specified in Chapter 4 of Volume V of the *Stormwater Management Manual for Western Washington (as amended in 2014).* (*Required* no later than December 31, 2016, except no later than June 30, 2017 for Permittees in Lewis and Cowlitz counties, and no later than June 30, 2018 for the City of Aberdeen, S5.C.5.a)

44. Applied a maintenance standard that is not specified in the *Stormwater Management Manual for Western Washington.*

44b. Please note in the *Comments* field what kinds of facilities are covered by this alternative maintenance standard. (S5.C.5.a)

45. Performed timely maintenance per S5.C.5.a.ii.

46. Annually inspected all municipally owned or operated permanent stormwater treatment and flow control BMPs/facilities. (S5.C.5.b)

46b. Number of known municipally owned or operated stormwater treatment and flow control BMPs/facilities. (S5.C.5.b)

46c. Number of facilities inspected during the reporting period. (S5.C.5.b)

46d. Number of facilities for which maintenance was performed during the reporting period. (S5.C.5.b)

47. If using reduced inspection frequency for the first time during this permit cycle, **attach** documentation per S5.C.5.b.

48. Conducted spot checks and inspections (if necessary) of potentially damaged stormwater facilities after major storms as per S5.C.5.c.

49. Inspected all municipally owned or operated catch basins and inlets as per S5.C.5.d, or used an alternative approach. (*Required* once no later than August 1, 2017 and every two years thereafter, except once no later than June 30, 2018 and every two years thereafter for the City of Aberdeen)

49b. Number of known catch basins.

49c. Number of catch basins inspected during the reporting period.

49d. Number of catch basins cleaned during the reporting period.

50. **Attach** documentation of alternative catch basin cleaning approach, if used. (S5.C.5.d.i or ii)

51. Implemented practices, policies and procedures to reduce stormwater impacts associated with runoff from all lands owned or maintained by the Permittee, and road maintenance activities under the functional control of the Permittee. *(*S5.C.5.f)

52. Implemented an ongoing training program for Permittee employees whose primary construction, operations or maintenance job functions may impact stormwater quality. (S5.C.5.g.)

53. Implemented a *Stormwater Pollution Prevention Plan* for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the Permittee in areas subject to this Permit that are not required to have coverage under an NPDES permit that covers stormwater discharges associated with the activity. *(*S5.C.5.h)

54. Complied with the Total Maximum Daily Load (TMDL)-specific requirements identified in Appendix 2. (S7.A)

55. For TMDLs listed in Appendix 2: **Attach** a summary of relevant SWMP and Appendix 2 activities to address the applicable TMDL parameter(s). (S7.A)

56. **Attach** a description of any stormwater monitoring or stormwater-related studies as described in S8.A.

57. Participated in cost-sharing for the regional stormwater monitoring program (RSMP) for status and trends monitoring. (S8.B.1)

57b. If choosing to conduct monitoring in accordance with S8.B.2., **attach** a data report in accordance with the approved QAPP. (*Required* to begin monitoring no later than October 31, 2014)

58. Participated in cost-sharing for the regional stormwater monitoring program (RSMP) for effectiveness studies. (S8.D.1) *(Required* to begin no later than August 15, 2014)

58b. If choosing to conduct discharge monitoring, **attach** an annual stormwater monitoring report in accordance with S8.C.2 and Appendix 9. (*Required to submit reports* beginning March 31, 2016)

59. Contributed to the RSMP for source identification and diagnostic monitoring information repository in accordance with S8.D.1. *(Required* to begin no later than August 15, 2014)

60. Notified Ecology in accordance with G3 of any discharge into or from the Permittees MS4 which could constitute a threat to human health, welfare or the environment. (G3)

61. Number of G3 notifications provided to Ecology.

62. Took appropriate action to correct or minimize the threat to human health, welfare, and/or the environment per G3.A.

63. Notified Ecology within 30 days of becoming aware that a discharge from the Permittee's MS4 caused or contributed to a known or likely violation of water quality standards in the receiving water. (S4.F.1)

64. If requested, submitted an Adaptive Management Response report in accordance with S4.F.3.a.

65. **Attach** a summary of the status of implementation of any actions taken pursuant to S4.F.3 and the status of any monitoring, assessment, or evaluation efforts conducted during the reporting period. (S4.F.3.d)

66. Notified Ecology of the failure to comply with the permit terms and conditions within 30 days of becoming aware of the non-compliance. (G20)

67. Number of non-compliance notifications (G20) provided in reporting year.

67b. List permit conditions described in non-compliance notification(s) in *Comments* field.

APPENDIX 4 – Annual Report Questions for Secondary Permittees

VI. Status Report Covering Calendar Year _____

Secondary Permittees are required to submit annual reports online or in a format provided by Ecology, pursuant to Special Condition S9.A

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1. YES ☐ NO ☐ NA ☐ **Attach** a notification of any jurisdictional boundary changes resulting in an increase or decrease in the Secondary Permittee's geographic area of coverage during the reporting period. (*Required annually,* S9.F.4)

Comments:

S6.D Stormwater Management Program

S6.D.1 Public Education and Outreach

2. YES ☐ NO ☐ Labeled all storm drain inlets owned or operated by the Secondary Permittee that are located in maintenance yards, in parking lots, along sidewalks, and at pedestrian access points. (*Required no later than* 4 years from initial date of permit coverage, S6.D.1.a)

Comments:

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3. YES ☐ NO ☐ Re-labeled all storm drain inlets with labels when no longer clearly visible and/or easily readable within 90 days. (*Required after* four years from initial date of permit coverage, S6.D.1.a)

Comments:

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4. YES ☐ NO ☐ NA ☐ (Public ports, colleges, and universities only) Distributed educational information to tenants and residents about the impact of stormwater discharges on receiving waters and steps that can be taken to reduce pollutants in stormwater runoff. (*Required no later than* 3 years from initial date of permit coverage, S6.D.1.b)

Comments:

S6.D2 Public Involvement and Participation

5. YES ☐ NO ☐ Made the annual report and SWMP Plan available on website. (*Required no later than May 31, annually*, S6.D.2)

Comments:

S6.D.3 Illicit Discharge Detection and Elimination

6. YES ☐ NO ☐	Complied with all relevant ordinances, rules, and regulations of the local jurisdiction(s) that govern non-stormwater discharges. (*Required* after initial date of permit coverage, S6.D.3.a) *Comments:*
7. YES ☐ NO ☐	Implemented policies prohibiting illicit discharges. (*Required no later than* 1 year from initial date of permit coverage, S6.D.3.b) *Comments:*
8. YES ☐ NO ☐	Implemented an enforcement plan to ensure compliance with policies to prohibit illicit discharges. (*Required* 18 months from initial date of permit coverage, S6.D.3.b) *Comments:*
9. YES ☐ NO ☐	Developed a map of the storm sewer system showing the features listed in S6.D.3.c. (*Required no later than* four and one-half years from initial date of permit coverage, S6.D.3.c) *Comments:*
10. YES ☐ NO ☐	Maintained a map of the MS4 showing all the features listed in S6.D.3.c. (*Required* after four and one half years from initial date of permit coverage, S6.D.3.c) *Comments:*
10b. YES ☐ NO ☐	If applicable, made the map available on request to Ecology or others. (*Required* after four and one half years from initial date of permit coverage, S6.D.3.c) *Comments:*
11. YES ☐ NO ☐	Conducted field inspections and visually inspected for illicit discharges at approximately one third of all known MS4 outfalls. (*Required to begin no later than* 2 years from initial date of permit coverage, S6.D.3.d) *Comments:*

12. YES □ NO □	Implemented procedures to identify and remove illicit discharges. (*Required no later than* 2 years from initial date of permit coverage, S6.D.3.d) *Comments:*
13. YES □NO □	Number of illicit discharges, including illicit connections, eliminated during the reporting period: (S6.D.3.d) *Comments:*
13b. YES □ NO □	**Attach** a summary of each illicit discharge discovered and actions taken to eliminate each of the discharges. (S6.D.3.d) *Comments:*
14. YES □NO □	Implemented a spill response plan that includes coordination with a qualified spill responder. (*Required no later than* four and one-half years from initial date of permit coverage, S6.D.3.e) *Comments:*
15. YES □NO □	Provided staff training or coordinated with existing training to educate staff on proper BMPs for preventing illicit discharges, including spills, as described in S6.D.3.f. (*Required no later than* 2 years from initial date of permit coverage) *Comments:*

S6.D.4 Construction Site Stormwater Control

16.	YES ☐ NO ☐ NA ☐	Complied with all relevant ordinances, rules, and regulations of the local jurisdiction(s) that govern construction phase stormwater pollution prevention measures, if applicable. (*Required after* initial date of permit coverage, S6.D.4.a) *Comments:*
17.	YES ☐ NO ☐	Ensured that all applicable construction projects under the functional control of the Secondary Permittee obtained NPDES permit coverage. (*Required after* initial date of permit coverage, S6.D.4.b) *Comments:*
18.	YES ☐ NO ☐ NA ☐	Coordinated with the local jurisdiction on projects owned or operated by other entities that discharge into the Secondary Permittee's MS4 as per S5.D.4.c. (*Required* after initial date of permit coverage) *Comments:*
19.	YES ☐ NO ☐ NA ☐	Provided training for relevant staff in erosion and sediment control BMPs and requirements, or hired trained contractors to perform the work. (*Required after* initial date of permit coverage, S6.D.4.d) *Comments:*
20.	YES ☐ NO ☐ NA ☐	Provided access, as requested, for inspection of construction sites under the control of the Secondary Permittee during the land disturbing activities and/or the construction period. (*Required* after initial date of permit coverage, S6.D.4.e) *Comments*:

S6.D.5 Post-Construction Stormwater Management for New Development and Redevelopment

21. YES ☐ NO ☐ Complied with all relevant ordinances, rules, and regulations of the local jurisdiction(s) that govern post-construction stormwater pollution prevention measures, including proper operation and maintenance of the MS4. (*Required* after initial date of permit coverage, S6.D.5.a)

Comments:

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22. YES ☐NO ☐ Coordinated with local jurisdiction regarding projects owned or operated by other entities which discharge into the Secondary Permittee's MS4. (*Required* after initial date of permit coverage, S6.D.5.b)

Comments:

S6.D.6 Pollution Prevention and Good Housekeeping for Municipal Operations

23. YES ☐ NO ☐ Implemented an Operation and Maintenance program. (*Required no later than* 3 years from initial date of permit coverage, S6.D.6.a)

Comments:

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24. YES ☐ NO ☐ Established and implemented maintenance standards for stormwater collection and conveyance systems as described in S6.D.6.a.i. (*Required no later than* 3 years from initial date of permit coverage, S6.D.6.a.i)

Comments:

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25. YES ☐ NO ☐ Conducted spot checks of potentially damaged permanent stormwater treatment and flow control BMPs/facilities after major storms. (*Required to begin no later than* 3 years from initial date of permit coverage, S6.D.6.a.i)

Comments:

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26. YES ☐ NO ☐ Developed and implemented a Stormwater Pollution Prevention Plan (SWPPP) for material storage facilities, heavy equipment maintenance or storage yards not covered by another NPDES permit that authorizes stormwater discharges associated with the activity. (*Required no later than* 3 years from initial date of permit coverage, S6.D.6.a.vi)

Comments:

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27. YES ☐ NO ☐ NA ☐ Have NPDES permit coverage for *Stormwater Discharges Associated with Industrial Activities* for all applicable industrial facilities operated by the Secondary Permittee, or another NPDES permit that regulates surface water discharges associated with the activity. (*Required after* initial date of permit coverage, S6.D.6.b)

Comments:

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28. YES ☐ NO ☐ Implemented a program designed to train staff to carry out the Operations and Maintenance plan as described in S6.D.6.d. (*Required to begin no later than* 3 years from initial date of permit coverage)

Comments:

S7. Compliance with Total Maximum Daily Load Requirements

29. YES ☐ NO ☐ Is there an approved Total Maximum Daily Load (TMDL) applicable to stormwater discharges from a MS4 owned or operated by the Permittee? (S7)

Comments:

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30. YES ☐ NO ☐ NA ☐ Complied with the specific requirements identified in Appendix 2. (S7.A)

Comments:

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31. YES ☐ NO ☐ NA ☐ Attached status report of TMDL implementation. (S7.A)

Comments:

General Conditions

32. YES ☐ NO ☐ NA ☐ Notified Ecology of the failure to comply with the permit terms and conditions within 30 days of becoming aware of the non-compliance. (G20)

Comments:

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33. YES ☐ NO ☐ Notified Ecology immediately in cases where the Secondary Permittee becomes aware of a discharge into or from the Permittee's MS4 which

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may constitute a threat to human health, welfare, or the environment. (G3)

Comments:

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34. YES ☐ NO ☐ Took appropriate action to correct or minimize discharges into or from the MS4 which could constitute a threat to human health, welfare, or the environment. (G3.A)

Comments:

S4 Compliance with Standards

35. YES ☐ NO ☐ NA ☐ If applicable, attached a summary of the status of implementation of any actions taken pursuant to S4.F, and the status of any monitoring, assessment, or evaluation efforts conducted during the reporting period. (S4.F.3.d)

Comments:

A. Information Collection (S8.B)

List below the results of information collected and analyzed by the MS4 during the reporting period, including monitoring data (if any) or monitoring-related studies and how to contact the MS4 for additional information. In addition, summarize the results of information collected by another entity and indicate how more complete information can be obtained.

APPENDIX 8 – Annual Report Questions for New Permittees

New Permittees that are Cities, Towns or Counties are required to submit the following information in an online annual report form, or an alternative format provided by Ecology if requested, pursuant to Special Condition S9.A.

1.	**Attach** updated annual Stormwater Management Program Plan (SWMP Plan). (S5.A.2)
2.	**Attach** a notification of any annexations, incorporations or boundary changes resulting in an increase or decrease in the Permittee's geographic area of permit coverage during the reporting period per S9.D.5.
3.	Implemented an ongoing program to gather, track, and maintain information per S5.A.3, including costs or estimated costs of developing and implementing the SWMP. (*Required* to begin no later than August 1, 2015*)*
4.	Coordinated among departments within the jurisdiction to eliminate barriers to permit compliance? (S5.A.5.b)
4b.	**Attach** a written description of internal coordination mechanisms. (*Required* to be submitted no later than March 31, 2015, S5.A.5.b)
5.	**Attach** description of public education and outreach efforts conducted per S5.C.1.a. i-ii. *(Required* to begin no later than August 1, 2015)
6.	Provided stewardship opportunities (or partnered with others) to encourage resident participation. (*Required* to begin no later than August 1, 2015, S5.C.1.b)
7.	Used results of measuring the understanding and adoption of targeted behaviors among at least one audience in at least one subject area to direct education and outreach resources and evaluate changes in adoption of targeted behaviors. (*Required* no later than August 1, 2017, S5.C.1.c)

7b.	**Attach** description of how this requirement was met.
8.	Describe in *Comments* field the opportunities created for the public to participate in the decision making processes involving the development, implementation and updates of the Permittee's SWMP. *(Required* to begin no later than August 1, 2014, S5.C.2.a)
9.	Posted the updated SWMP Plan and latest annual report on your website no later than May 31. *(Required* to begin posting no later than May 31, 2015, S5.C.2.b)
9b.	List the website address in *Comments* field.
10.	Developed a map of the MS4 that includes the requirements listed in S5.C.3.a.i.-vi. *(Required* no later than August 1, 2017)
11.	Mapped all connections to the MS4 authorized or allowed by the Permittee. *(Required* to begin no later than August 1, 2013, S5.C.3.a.v)
12.	Adopted and implemented an ordinance or other regulatory mechanism to effectively prohibit illicit discharges per the requirements in S5.C.3.b.i.-iv. *(Required* no later than February 2, 2016)
12b.	Cite reference for ordinance or other regulatory mechanism to meet this requirement in *Comments* field.
13.	Developed and implemented a compliance strategy, including informal compliance actions as well as enforcement provisions of the ordinance (S5.C.3.b.v) *(Required* no later than February 2, 2016)
14.	Developed and implemented procedures for conducting illicit discharge investigations in accordance with S5.C.3.c.i. *(Required* no later than February 2, 2018)
14b.	Cite methodology used in the *Comments* sections.

15.	Screened on average 12% of MS4 within coverage area each year in accordance with S5.C.3.c.i. (*Required* to screen 12% no later than December 31, 2017; 20% on average each year thereafter, S5.C.3.c.i)
16.	Publicized a hotline telephone number for public reporting of spills and other illicit discharges. (*Required* to begin no later than August 1, 2015, S5.C.3.c.ii)
16b.	Number of hotline calls received during the reporting period.
16c.	Provide telephone number in the *Comments* field.
17.	Developed and implemented an ongoing illicit discharge training program for all municipal field staff per S5.C.3.c.iii. *(Required* to begin no later than February 2, 2016)
18.	Informed public employees, businesses, and the general public of hazards associated with illicit discharges and improper disposal of waste? (*Required* to begin no later than February 2, 2017, S5.C.3.c.iv)
18b.	Describe activities in *Comments* field.
19.	Developed and implemented a program to characterize, trace, and eliminate illicit discharges into the MS4 found by or reported to the Permittee. (*Required* to begin no later than February 2, 2018, S5.C.3.d.i)
20.	Number of illicit discharges, including illicit connections, eliminated during the reporting year. *(Required* no later than February 2, 2018, S5.C.3.d.iii and iv)
21.	**Attach** a summary of actions taken to characterize, trace and eliminate each illicit discharge found by or reported to the permittee. For each illicit discharge, include a description of actions according to required timeline per S5.C.3.d.iv. *(Required* no later than February 2, 2018)
22.	Trained municipal illicit discharge detection staff to conduct illicit discharge detection and elimination activities referenced in S5.C.3.e. *(Required* no later than February 2, 2016)

23.	Developed and implemented a program to reduce pollutants in stormwater runoff to the MS4 from new public or private development, redevelopment and construction site activities. *(Required* no later than December 31, 2017, S5.C.4)
24.	Adopted and implemented an ordinance or other enforceable mechanism to address runoff from new development, redevelopment and construction sites per the requirements of S5.C.4.a. *(Required* no later than December 31,2017)
24b.	Cite the jurisdiction code reference used to meet this requirement in *Comments* field.
25.	Number of exceptions granted to the minimum requirements in Appendix 1. *(Required* no later than December 31, 2017, S5.C.4.a.i and Section 6 of Appendix 1)
26.	Number of variances granted to the minimum requirements in Appendix 1. *(Required* no later than December 31, 2017, S5.C.4.a.i and Section 6 of Appendix 1)
27.	Reviewed *Stormwater Site Plans* for all proposed development activities that meet the thresholds adopted pursuant to S5.C.4.a.i. *(Required* no later than December 31, 2017, S5.C.4.b.i)
27b.	Number of site plans reviewed during the reporting period.
28.	Inspected, prior to clearing and construction, all permitted development sites that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7 *Determining Construction Site Sediment Damage Potential,* or alternatively, inspected all construction sites meeting the minimum thresholds adopted pursuant to S5.C.4.a.i. (*Required* no later than December 31, 2017, S5.C.4.b.ii)
28b.	Number of construction sites inspected per S5.C.4.b.ii.

29.	Inspected all permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls. (*Required* no later than December 31, 2017, S5.C.4.b.iii)
29b.	Number of construction sites inspected per S5.C.4.b.iii.
30.	Number of enforcement actions taken during the reporting period based on construction phase inspections at new development and redevelopment projects. (*Required* no later than December 31, 2017, S5.C.4.b.ii, iii and v)
31.	Inspected all permitted development sites that meet the thresholds in S5.C.4.a.i upon completion of construction and prior to final approval or occupancy to ensure proper installation of stormwater facilities. (*Required* no later than December 31, 2017, S5.C.4.b.iv and v)
32.	Verified a maintenance plan is completed and responsibility for maintenance is assigned for projects. (*Required* no later than December 31, 2017, S5.C.4.b.iv)
33	Achieved at least 80% of scheduled construction-related inspections. (*Required* no later than December 31, 2017, S5.C.4.b.ii-iv)
34.	Developed and implemented a program to verify adequate long-term operation and maintenance (O&M) of stormwater flow control and treatment BMPs/facilities that are permitted and constructed pursuant to S5.C.4(b). (*Required* no later than December 31, 2017, S5.C.4.c)
35.	Adopted and implemented an ordinance or other enforceable mechanism that clearly identifies the party responsible for maintenance, requires inspection and establishes enforcement procedures. (*Required* no later than December 31, 2017, S5.C.5.c.i)
36.	Established maintenance standards as described in S5.C.4.c.ii. (*Required* no later than December 31, 2017)

37.	Annually inspected stormwater treatment and flow control BMPs/facilities per S5.C.4.c.iii.*(Required* no later than December 31, 2017)
37b.	If using reduced inspection frequency for the first time during this permit term, **attach** documentation as per S5.C.4.c.iii. *(Required if applicable* no later than December 31, 2017)
38.	Inspected new stormwater treatment and flow control BMPs/facilities and catch basins for new developments every 6 months until 90% of the lots are constructed (or until construction has stopped and the site is fully stabilized) to identify maintenance needs and enforce compliance with maintenance standards as needed? (*Required* no later than December 31, 2017, S5.C4.c.ii)
39.	Achieved at least 80% of scheduled inspections to verify adequate long-term O&M. (*Required* no later than December 31, 2017, S5.C4.c.v)
40.	Verified that maintenance was performed per the schedule in S5.C.4.c.vi when an inspection identified an exceedance of the maintenance standard. *(Required* no later than December 31, 2017)
40b.	**Attach** documentation of any maintenance delays.(S5.C.4.c.vi)
41.	Provided copies of the *Notice of Intent for Construction Activity* and *Notice of Intent for Industrial Activity* to representatives of proposed new development and redevelopment. (*Required* no later than August 1, 2013, S5.C.4.d)
42.	Ensured that all staff responsible for implementing the program to control stormwater runoff from new development, redevelopment, and construction sites are trained to conduct these activities, as per S5.C.4.e. *(Required* to begin no later than December 31, 2017)
43.	Reviewed, revised and made effective the low impact development-related codes, rules, standards and other enforceable documents as per S5.C.4.f.i. (*Required* no later than December 31, 2017)

43b.	**Attach** a summary of the LID review and revision process that includes the requirements listed in S5.C.4.f.ii. (*Required* to be submitted no later than March 31, 2018)
44.	Where applicable, participated and cooperated with the watershed-scale stormwater planning process led by a Phase I county. (S5.C.4.g)
45.	Developed and implemented maintenance standards as protective, or more protective, of facility function as those specified in Chapter 4 of Volume V of the *Stormwater Management Manual for Western Washington.* (*Required* no later than December 31, 2017, S5.C.5.a)
46.	Applied a maintenance standard that is not specified in the *Stormwater Management Manual for Western Washington.* (*Required to report, if applicable,* no later than December 31, 2017, S5.C.5.a)
46b.	Please note in the *Comments* field what kinds of facilities are covered by this alternative maintenance standard.
47.	Performed timely maintenance as per S5.C.5.a.ii. *(Required* no later than December 31, 2017)
47b.	**Attach** documentation of any maintenance delays. *(Required, if applicable*, no later than December 31, 2017, S5.C.5.a.ii)
48.	Annually inspected all municipally owned or operated permanent stormwater treatment and flow control BMPs/facilities. (*Required* no later than December 31, 2017, S5.C.5.b)
48a.	Number of known municipally owned or operated stormwater treatment and flow control BMPs/facilities.
48b.	Number of facilities inspected during the reporting period.

48c.	Number of facilities for which maintenance was performed during the reporting period.
49.	If used a reduced inspection frequency, **attach** documentation as per S5.C.5.b *(Required, if applicable,* no later than December 31, 2017)
50.	Conducted spot checks and inspections (if necessary) of potentially damaged stormwater facilities after major storms. (*Required* no later than December 31, 2017, S5.C.5.c)
51.	Inspected all municipally owned or operated all catch basins and inlets owned or operated by the Permittee at least once during the permit term, or used an alternative approach. (*Required* no later than February 2, 2018, S5.C.5.d)
51b.	Number of known catch basins.
51c.	Number of catch basins inspected.
51d.	Number of catch basins cleaned.
52.	**Attach** documentation of alternative catch basin cleaning approach, if used. (*Required, if applicable,* no later than February 2, 2018, S5.C.5.d.i- iii)
53.	Developed and implemented practices, policies and procedures to reduce stormwater impacts associated with runoff from all lands owned or maintained by the Permittee, and road maintenance activities under the functional control of the Permittee. *(Required* no later than December 31, 2017, S5.C.5.f)
54.	Developed and implemented an ongoing training program for Permittee employees whose primary construction, operations or maintenance job functions may impact stormwater quality. (*Required* no later than December 31, 2017, S5.C.5.g.)
55.	Developed and implemented a Stormwater Pollution Prevention Plan (SWPPP) for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the Permittee in areas subject to this Permit as described in S5.C.6.h. *(Required* no later than December 31, 2017, S5.C.6.h)

56.	Complied with the Total Maximum Daily Load (TMDL) specific requirements identified in Appendix 2, if applicable. (S7.A)
57.	If applicable, for TMDLs listed in Appendix 2 **attach** a summary of relevant SWMP and Appendix 2 activities to address the applicable TMDL parameter. (S7.A)
58.	**Attach** a description of any stormwater monitoring or stormwater-related studies as described in S8.A.
59.	Notified Ecology in accordance with G3 of any discharge into or from the Permittee's MS4 which could constitute a threat to human health, welfare or the environment. (G3)
60.	Number of G3 notifications provided to Ecology.
61.	Took appropriate action to correct or minimize the threat to human health, welfare, and/or the environment per G3.A.
62.	Notified Ecology within 30 days of becoming aware that a discharge from the Permittee's MS4 caused or contributed to a known or likely violation of water quality standards in the receiving water. (S4.F.1)
63.	If requested, submitted an Adaptive Management Response report in accordance with S4.F.3.a.
64.	**Attach** a summary of the status of implementation of any actions taken pursuant to S4.F.3 and the status of any monitoring, assessment, or evaluation efforts conducted during the reporting period? (S4.F.3.d)
65.	Notified Ecology of the failure to comply with the permit terms and conditions within 30 days of becoming aware of the non-compliance? (G20)
66.	Number of non-compliance notifications (G20) provided in reporting year.
66b.	List permit conditions described in non-compliance notification(s) in *Comments* field.

APPENDIX 9 – Stormwater Discharge Monitoring

This Appendix applies to Permittees with stormwater discharge monitoring requirements pursuant to Special Condition S8 Monitoring and Assessment, particularly sections S8.B.2, for Clark County, and S8.C.2, if a Permittee chooses not to participate in the Regional Stormwater Monitoring Program (RSMP) by paying into a collective fund to implement RSMP effectiveness studies.

Stormwater discharge monitoring is intended to characterize stormwater runoff quantity and quality at a limited number of locations in a manner that allows analysis of loadings and changes in conditions over time and generalization across the Permittee's jurisdiction.

QAPP Preparation

Permittees shall prepare a Quality Assurance Project Plan (QAPP) in accordance with *Quality Assurance Project Plan Guidance, Special Condition S8.D, Phase I Municipal Stormwater Permit,* December 2010 (Ecology Publication no. 10-10-075 http://www.ecy.wa.gov/pubs/1010075.pdf). The QAPP shall be developed by qualified staff or contractors with experience in applying Ecology or Environmental Protection Agency (EPA) QAPP Guidelines.

A stormwater discharge monitoring QAPP shall be submitted to Ecology in accordance with the deadlines in S8. The QAPP shall describe field collection methods and sample preparation methods appropriate to each group of analytes, reporting limits, and field conditions.

Permittees are responsible for maintaining an up-to-date approved QAPP for stormwater discharge monitoring. Significant changes shall be reviewed by Ecology and reflected in a revised QAPP. Significant changes include, but are not limited to:

- Land disturbing activities over 10 acres in size within the sampled drainage area.
- Relocating a monitoring station.
- Introducing new sampling equipment.
- Unanticipated back water conditions, base flow, or tidal influences.
- Changes in laboratories, analytical methods, or reporting limits.

Discharge Monitoring Location Selection

Stormwater monitoring discharge monitoring locations shall have mapped tributary conveyance systems and drainage areas, and be suitable for permanent installation and operation of flow-weighted composite sampling equipment. Additional monitoring location selection guidance and information about how to estimate a rainfall to runoff relationship is available in *Standard Operating Procedure for Automatic Sampling for Stormwater Monitoring, ECY002* from the Ecology Quality Assurance Page (http://www.ecy.wa.gov/programs/eap/quality.html; specific guidance for automatic sampling is available at http://www.ecy.wa.gov/programs/eap/qa/Agency/ECY_WQ_SOP_AutomatedSampling_v1_0ECY002.pdf).

Permittees may identify a discharge monitoring location upstream in the conveyance system (*i.e.*, upgradient of the outfall) in order to achieve the desired land use, to accommodate the installation of sampling equipment, and/or to avoid or minimize back water or tidal interference.

The QAPP shall describe each stormwater discharge monitoring location and associated drainage basin in detail. The QAPP must describe how each discharge monitoring location was selected, the size of the drainage basin, and the percentage of area in the drainage basin representing the following land uses: high density residential, low density residential, commercial, industrial, agriculture, and transportation right-of-way. Table A9-1 below provides characteristics to consider for some of these land uses. However, density definitions can vary from jurisdiction to jurisdiction and may be defined locally in codes and comprehensive plans. Report the residential density definitions used if they differ from these.

Table A9-1 Land Use Selection Characteristics

Land use category	Characteristics
High density residential	4 dwelling units per acre or greater
Medium to high density residential	2 to 4 dwelling units per acre
Low density residential	1 to 2 dwelling units per acre
Commercial	Includes multi-family residential
Industrial	Not predominated by one facility with a few operators

Flow Monitoring

Discharge monitoring locations must be evaluated for a rainfall to runoff relationship in order to ensure that the discharge monitoring location will receive enough runoff for sufficient sample volume. This rainfall to runoff relationship will also assist in programming the automatic sampling equipment. In order to establish the rainfall to runoff relationship, one year of continuous flow recording (including base flow and all storm events) is necessary.

Monitoring Frequency

Permittees shall sample each stormwater discharge monitoring location according to the frequency described below. Documented good faith efforts with good professional practice by the Permittee which do not result in collecting a successful sample for the full number of required storms may be considered as contributing toward compliance with this requirement.

For each location, the Permittee shall sample and analyze a minimum of eleven (11) qualifying storm events per water year. Qualifying storm event sampling must be distributed throughout the year, approximately reflecting the distribution of rainfall between the wet and dry seasons (with a goal of 60-80% of the samples collected during the wet season and a goal of 20-40% of the samples collected in the dry season).

Ecology may approve a reduced sampling frequency if the Permittee provides a statistical analysis demonstrating that monitoring goals can be met with fewer samples.

Qualifying Storm Event Criteria

The wet season is from October 1 through April 30. A qualifying wet season storm event is defined as follows:

- Rainfall volume: 0.20" minimum, no fixed maximum
- Rainfall duration: No fixed minimum or maximum
- Antecedent dry period: Less than or equal to 0.05" rain in the previous 24 hours
- Inter-event dry period: 6 hours

The dry season is from May 1 through September 30. A qualifying dry season storm event is defined as follows:

- Rainfall volume: 0.20" minimum, no fixed maximum
- Rainfall duration: No fixed minimum or maximum
- Antecedent dry period: less than or equal to 0.02" rain in the previous 48 hours
- Inter-event dry period: 6 hours

Types of Sampling

Storm events shall be sampled using flow-weighted composite sampling techniques. Automatic samplers shall be programmed to begin sampling as early in the runoff event as practical and to continue sampling past the longest estimated time of concentration for the tributary area. Refer to *Standard Operating Procedure for Automatic Sampling for Stormwater Monitoring, ECY002* (http://www.ecy.wa.gov/programs/eap/quality.html) for guidance on how to conduct flow weighted composite sampling.

For storm events lasting less than 24 hours, samples shall be collected for at least seventy-five percent (75%) of the storm event hydrograph. For storm events lasting longer than 24 hours, samples shall be collected for at least seventy-five percent 75% of the hydrograph of the first 24 hours of the storm.

Each composite sample shall be targeted to contain at least 10 aliquots. Composite samples with 7 to 9 aliquots are acceptable if they meet the other sampling criteria and help achieve a representative balance of wet season/dry season events and storm sizes.

Continuous flow recording of all storm events (not just sampled storm events) is necessary for at least one complete water year to establish a baseline rainfall/runoff relationship. Ongoing continuous flow monitoring is required for each of the sampled storm events as necessary to properly conduct the flow-weighted composite sampling. Precipitation data shall be collected from the nearest rain gauge reporting at least hourly rainfall amounts.

Grab samples are necessary for some parameters (see below) and shall be collected early in the storm event. Refer to *Standard Operating Procedure for Grab Sampling for Stormwater Monitoring, ECY001* (http://www.ecy.wa.gov/programs/eap/quality.html).

Use of in-line sediment traps or similar collection system is preferred for sediment samples; refer to *Standard Operating Procedure for Collection of Stormwater Sediments using In-Line Sediment Traps, ECY003* (http://www.ecy.wa.gov/programs/eap/quality.html).

Sediment samples shall be collected once per water year at each stormwater discharge monitoring location, or in the vicinity of each stormwater monitoring location, during the month of May or June.

Sampling of receiving water sediment deposits is an alternative where approved by Ecology.

Parameters

Flow-weighted composite samples shall be analyzed for the following parameters utilizing an Ecology- or EPA-accredited laboratory and the methods and reporting limits as provided in table A9-2 at the end of this appendix or otherwise approved by Ecology.

- Conventional parameters: total suspended solids (TSS), turbidity, conductivity, chloride, biochemical oxygen demand (BOD5), hardness, pH, grain size, and methylene blue activating substances (MBAS).
- Nutrients: total phosphorus, orthophosphate, total kjeldahl nitrogen, and nitrate plus nitrite
- Metals, total and dissolved: copper, zinc, cadmium, lead, and mercury
- Organics:
    - Polycyclic aromatic hydrocarbon (PAH) compounds: acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene
    - Herbicides: 2,4-D and dichlobenil
    - Insecticides: carbaryl and chlorpyrifos
    - Phthalates: bis(2-Ethylhexyl)phthalate

If the volume of the stormwater sample collected from a qualifying storm is insufficient to allow analysis for all of the parameters listed above, the sample shall be analyzed for as many parameters as possible in the following priority order: (1) metals and hardness; (2) TSS; (3) organics: PAHs, herbicides, insecticides, phthalates; (4) nutrients; (5) conductivity; (6) BOD_5; and (7) remaining conventional parameters. If insufficient sample exists to run the next highest priority pollutant, that analysis may be bypassed and analyses run on lower priority pollutants in accordance with the remaining priority order to the extent possible. Parameters that are below reporting limits after two years of data may be dropped from the analysis.

Grab samples shall be analyzed for the following parameters utilizing an Ecology- or EPA-accredited laboratory and the methods and reporting limits listed in Table A9-2 at the end of this Appendix.

- Fecal coliform bacteria
- Total petroleum hydrocarbons (TPH): NWTPH-Gx and NWTPH-Dx and BTEX (benzene, toluene, ethyl-benzene, and xylenes).

Sediment samples shall be analyzed for the following parameters utilizing an Ecology- or EPA-accredited laboratory and the methods and reporting limits listed in table A9-3 at the end of this Appendix or otherwise approved by Ecology. If the volume of sediment sample is insufficient to

analyze for all of the parameters listed below, the sample shall be analyzed for as many parameters as possible in the following priority order:

- Total organic carbon
- Metals: copper, zinc, lead, cadmium, and mercury
- Organics:
    - PAH compounds: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, 2,6-dimethylnaphthalene, 2-methylnaphthalene, fluoranthene, naphthalene, benzo(ghi)perylene, phenanthrene, and pyrene
    - Petroleum hydrocarbons: NWTPH-Dx
    - Pyrethroids: bifenthrin
    - PCBs: aroclors
- Total volatile solids
- Total phosphorus
- Percent solids, grain size

A minimum of one sediment sample per year shall be collected. Additional samples shall be collected if insufficient sample exists from a single sample to run all of the organic pollutants listed above. A visual, qualitative determination of grain size shall be reported for all samples (in addition to the quantitative analysis for all samples with sufficient volume). Parameters that are below reporting limits after two years of data may be dropped from the analysis.

Recordkeeping and Reporting

For each stormwater monitoring location, calculate the following:

- Event Mean Concentrations (EMCs)
- Total annual pollutant load by parameter
- Seasonal pollutant loads by parameter for the wet and dry seasons

The annual pollutant load calculations must be based on a water year and include wet and dry season loads and total annual load (wet plus dry season load). The loadings shall be expressed as total pounds and as pounds per acre, and must take into account potential pollutant load from base flow. Loadings shall be calculated following *Standard Operating Procedure for Calculating Pollutant Loads for Stormwater Discharges, ECY004* (http://www.ecy.wa.gov/programs/eap/quality.html). Pollutant loading information is required for water quality parameters only.

Annual Monitoring Reports shall be submitted with each Annual Report beginning with the first Annual Report following the first full water year of monitoring. Annual Monitoring Reports shall provide all monitoring data collected during the preceding water year (October 1 – September 30). Concentration data shall be provided in the same units that are specified for Reporting Limits in Tables A9-2 and A9-3. Flow data shall be provided in gallons per minute. Loading data for each water year shall be provided in total pounds and in pounds per acre. Annual Monitoring Reports shall consist of a narrative report, an Excel spreadsheet with all data and pollutant loading calculations, and a submittal to Ecology's Environmental Information Management (EIM) database. For the Annual Monitoring Report to be considered on time, the EIM data

submission process must be initiated before April 1 of each relevant year, and completed by June 15 of each relevant year.

Annual Monitoring Reports shall include:

- A brief summary of each monitored drainage basin (full details of the monitoring drainage basin shall be in the QAPP), including any changes within the contributing drainage area or changes to the monitoring station that could affect hydrology and/or pollutant loading.
- A description of each flow-weighted composite and grab sampled storm event, including:
    - General summary about storm event criteria, including:
        - Precipitation data (in inches) including antecedent dry period and rainfall distribution throughout the event.
        - Flow and hydrograph data including sampled and total runoff time periods and volumes.
        - Total number of qualifying storm events captured and analyzed at each monitoring location.
        - Distribution of storms collected between wet and dry seasons (permit goals include 60-80% of storms during the wet season and 20-40% of storms during the dry season).
        - Logistical problems associated with any storm event criterion.
    - A hyetograph and a hydrograph for each sampled storm event. Include properly labeled graphs that display the following:
        - Date of the storm event.
        - Time of day versus precipitation information.
        - Time versus flow rate (in gallons per minute).
        - Time versus aliquot collection.
        - Display the total duration of the storm event, not just the duration when samples were collected (remember your pollutant load calculation must include flow for the entire storm event, not just the water quality sampled portion).
    - A summary of (or in the graph) the total runoff volume in gallons.
    - A rainfall/runoff relationship table used to estimate the un-sampled storm events (when water quality samples were not collected). This is used for future estimations of annual and seasonal loads.
    - Whether or not any chemicals were removed from the list of analysis due to two years of non-detect data.
    - A brief summary with storm event dates where insufficient volumes were collected. Include the parameters analyzed.
- A description of the sediment sampling event, including:
    - Whether or not any chemicals were removed from the list of analysis due to two years of non-detect data.
    - A summary of sediment sampling (including dates) where insufficient volumes were collected. Include the parameters analyzed.

- Event Mean Concentrations (EMCs)
- The wet and dry season pollutant loads and annual pollutant load based on water year for each discharge monitoring location expressed in total pounds, and pounds per acre. Include the following:
    - For storm events where water quality samples were collected, the load in pounds per day for each parameter for each sampled storm event, include date of storm events.
    - An estimated seasonal pollutant load for each parameter at each discharge monitoring location. This is calculated using all storm events (when water quality samples were collected and when samples were not collected).
    - A total annual pollutant load (wet season load + dry season load) for each parameter (include estimated events).
    - The rainfall/runoff relationship including your pollutant load estimates for un-sampled events.
    - Note that if any data is unavailable to effectively estimate your rainfall to runoff relationship due to an incomplete water year, submit this information in the next year's stormwater monitoring report.
- Quality Assurance/Quality Control information for each *successfully sampled qualifying storm event* at each discharge monitoring location and *sediments* sampled at each discharge monitoring location, including:
    - A narrative summary of your field and laboratory verification, validation results and quality control checks performed.
    - A narrative analysis of your field and laboratory quality control sample results and how they compare with your data quality objectives/indicators in your QAPP.
    - Corrective actions reported/taken.
- An explanation and discussion of results from each *successfully sampled qualifying storm event* at each discharge monitoring location and *sediments* collected at each discharge monitoring location, including:
    - A statistical analysis of the event mean concentrations for each parameter and a narrative description of significant findings from this analysis.
    - Any conclusions based on data from this study including analyses of previously collected data from these discharge monitoring locations.
- A description of Stormwater Management Program activities currently taking place or planned within the monitoring station's drainage area that may have affected or may potentially affect future monitoring results.

If the Permittee monitors any pollutant more frequently at the stormwater discharge monitoring locations, then the results of this monitoring shall be included in the annual monitoring report reflecting the water year in which the monitoring occurred.

After three (3) water years of data, the Annual Monitoring Report shall include:

- Trend analyses,
- An evaluation of the data as it applies to the SWMP, and

- Any stormwater management activities the Permittee has identified that can be adjusted to respond to this data.

Laboratory Methods

The Permittee's stormwater discharge monitoring program shall use the following analytical methods or other methods approved by the U.S. Environmental Protection Agency or Ecology with similar reporting limits, unless alternative methods are approved by Ecology. Any alternative method proposed by a Permittee must have a similar reporting limit, or must be justified as adequate for the likely, expected range of concentrations. Permittees are not guaranteed approval of alternative methods or reporting limits.

In cases where smaller volumes of water are expected to be collected, or to save analytical costs, Permittees may propose that some of the analyses be optimized for specific parameters or groups. The Permittee must, in consultation with a qualified chemist, define the exact volumes and optimization steps and include them in the QAPP.

Table A9-2 Analytical Procedures in Stormwater

Analyte	Method in Water	Reporting Limit[a]
Conventional Parameters		
Total suspended solids	SM 2540B[b] or SM 2540D	1.0 mg/L
Turbidity	EPA Method 180.1 or SM2130B	± 0.2 NTU
Conductivity	SM 2510 or EPA Method 120.1	± 1 umhos/cm
Chloride	EPA Method 300.0, EPA Method 325.2, or SM4110B or SM4500 Cl-E	0.2 mg/L
BOD_5	SM5210B	2.0 mg/L
Particle size distribution	Coulter Counter, Laser diffraction, or comparable method - *see attached method*	NA
Grain Size	Sieve and pipette (ASTM 1997), PSEP 1986/2003, or comparable method	NA
pH	EPA Method 150.2 or SM 4500H^+	0.2 units
Hardness as $CaCO_3$	EPA Method 200.7, SM2340B(ICP), SM2340C (titration) or SM 3120B	1.0 mg/L
Methylene blue activated substances (MBAS)	CHEMetrics Colorimetric or SM5540C	0.025 mg/L
Bacteria		
Fecal Coliform	SM 9221E	2 min., 2E6 max.
Nutrients		
Orthophosphate and total phosphorus	EPA Method 365.3, EPA Method 365.4, SM 4500-P E or SM4500-P F	0.01 mg P/L
Total Kjeldahl nitrogen	EPA Method 351.2, EPA Method 351.1, SM 4500 Norg-B, SM 4500 Norg-C, SM 4500 NH3-D, SM 4500 NH3-G, SM 4500 NH3-E or SM4500 NH3-F	0.5 mg/L
Nitrate-Nitrite	EPA Method 353.2 or SM 4500 -$NO3^-$ E	0.01 mg/L

Metals		
Total recoverable zinc	EPA Method 200.8 (ICP/MS), EPA Method 200.7 (ICP) or SM 3125 (ICP/MS)	5.0 µg/L
Dissolved zinc	EPA Method 200.8 (ICP/MS), or SM 3125 (ICP/MS)	1.0 µg/L
Total recoverable lead	EPA Method 200.8 (ICP/MS), or SM 3125 (ICP/MS)	0.1 µg/L
Dissolved lead, copper, and cadmium	EPA Method 200.8 (ICP/MS), or SM 3125 (ICP/MS)	0.1 µg/L
Total recoverable copper	EPA Method 200.8 (ICP/MS), or SM 3125 (ICP/MS)	0.5 µg/L
Total recoverable cadmium	EPA Method 200.8 (ICP/MS), or SM 3125 (ICP/MS)	0.2 µg/L
Total and dissolved mercury	EPA Method 7470 (CVAA), EPA Method 245.7, or EPA Method 1631E	0.1 µg/L
Organics		
PAH compounds	EPA Method 8310 or 8270 D SIM	0.1 µg/L
Herbicides (2,4-D, dichlobenil)	EPA Method 8270 D SIM or 8151 A	0.1 µg/L, 1 µg/L
Carbamate insecticides (carbaryl)	EPA Method 632	0.5 µg/L
Organophosphate insecticides (chlorpyrifos)	EPA Method 625 or EPA Method 614, 8270 D, EPA Method 622, EPA Method 1657	0.5 µg/L
Phthalates (bis(2-ethylhexyl)phthalate)	EPA Method 8270 D	1 µg/L
Petroleum Hydrocarbons		
NWTPH-Dx	Ecology, 1997, (Publication No. 97-602)	0.25-0.5 mg/L
NWTPH-Gx	Ecology, 1997, (Publication No. 97-602)	0.25 mg/L
BTEX	EPA Method 8260 or 602	1 µg/L or 5 µg/L

a. The QAPP shall identify Ecology- or EPA-approved methods with appropriate reporting limits. An individual sample that could not be run at a reporting limit because of matrix interference or other such reasons would not be called into question for compliance purposes. All results shall be reported. For non-detect values below the reporting limit, report results at the method detection limit from the lab and the qualifier of "U" for undetected at that concentration.

b. To ensure accurate results, Ecology recommends modifying these methods to analyze (filter) the entire field sample. Research results indicate that errors may be introduced by decanting a subsample, although using a funnel splitter may help. The analyst may also consider analyzing several premixed subsamples from the same sample container to determine if significant variability occurred due to stratification. Reports shall indicate whether the entire field sample or a subsample was used.

NA – Not applicable

SM – Standard Methods

Table A9-3 Analytical Procedures in Sediments

Analyte	Method in Sediment	Reporting Limit[a]
Conventional Parameters		
Percent solids	SM 2540G	NA
Total organic carbon	Puget Sound Estuary Protocols (PSEP 1997), SM 5310B, SM 5310C, SM 5310D or EPA Method 9060	0.1%
Grain size	Sieve and Pipette (ASTM 1997), ASTM F312-97, ASTMD422 or PSEP 1986/2003	NA
Total phosphorus	EPA Method 365.3, EPA Method 365.4, SM 4500 P E or SM 4500 P F	0.01 mg/kg
Total volatile solids	EPA Method 160.4 or SM 2540G	0.1%
Metals		
Total recoverable zinc	EPA Method 200.8 (ICP/MS), EPA Method 6010, EPA Method 6020 or SM 3125 (ICP/MS), or EPA Method 200.7 (ICP)	5.0 mg/kg
Total recoverable lead	EPA Method 200.8 (ICP/MS), EPA Method 6010, EPA Method 6020 or SM 3125 (ICP/MS)	0.1 mg/kg
Total recoverable copper	EPA Method 200.8 (ICP/MS), EPA Method 6010, EPA Method 6020 or SM 3125 (ICP/MS)	0.1 mg/kg
Total recoverable cadmium	EPA Method 200.8 (ICP/MS), EPA Method 6010, EPA Method 6020 or SM 3125 (ICP/MS)	0.1 mg/kg
Total recoverable mercury	EPA Method 245.5 or EPA Method 7471B	0.005 mg/kg
Organics		
PAH compounds	EPA Method 8270 D	70 µg/kg dry
Pyrethroids (bifenthrin)	EPA Method 8270 D, EPA Method 1660	1.0 µg/kg dry
PCBs (aroclors)	EPA Method 8082	80 µg/kg dry
Petroleum Hydrocarbons		
NWTPH-Dx	Ecology, 1997 (Publication No. 97-602) or EPA SW-846 method 8015B	25.0-100.0 mg/kg

a. The QAPP shall identify Ecology- or EPA-approved methods with appropriate reporting limits. An individual sample that could not be run at a reporting limit because of matrix interference or other such reasons would not be called into question for compliance purposes. All results shall be reported. For non-detected values below the reporting limit, report results at the method detection limit from the lab and the qualifier of "U" for undetected at that concentration.

NA – Not applicable

SM – Standard Methods

WET SIEVING AND MASS MEASUREMENT

FOR LASER DIFFRACTION ANALYSIS

WET SIEVING

Sample Collection/Handling

Samples should be collected in HDPE or Teflon containers and held at 4 degrees C during the collection process. If organic compounds are being collected, the sample containers should be glass or Teflon.

Preservation/Holding Time

Samples should be stored at 4o C and must be analyzed within 7 days (EPA, 1998). Samples may not be frozen or dried prior to analysis, as either process may change the particle size distribution.

Sonication

Do not sonicate samples prior to analysis to preserve particle integrity and representativeness. Laboratories using laser diffraction will have to be notified not to sonicate these samples at any time during the analysis. It is recommended that this request also be written on the chain-of-custody form that the analytical laboratory receives in order to assure that sonication is omitted.

LABORATORY PROCEDURES

Equipment

__ 2 Liters of stormwater sample water (total sample required for analysis (ASTM D 3977))
__ Drying oven (90 degrees C +2 degrees)
__ Analytical balance (0.01 mg accuracy)
__ Desiccator (large enough diameter to accommodate sieve)
__ Standard sieves - larger than 2" diameter may be desirable
__ 500 um (Tyler 32, US Standard 35)
__ 250 um (Tyler 60, US Standard 60)
__ Beakers - plastic (HDPE)
__ Funnel (HDPE - Large enough diameter to accommodate sieve)
__ Wash bottle
__ Pre-measured reagent-grade water

Sample Processing

- Dry 250 um and 500 um mesh sieves in a drying oven to a constant weight at 90 ± 2° C.
- Cool the sieves to room temperature in a desiccator.
- Weigh each sieve to the nearest 0.01 mg.
- Record the initial weight of each dry sieve.
- Measure the volume of sample water and record.
- Pour the sample through a nested sieve stack (the 500 um sieve should be on the top and the sieve stack should be stabilized in a funnel and the funnel should be resting above/inside a collection beaker).
- Use some of the pre-measured reagent-grade water in wash bottle to thoroughly rinse all soil particles from sample container so that all soil particles are rinsed through the sieve.

- Thoroughly rinse the soil particles in the sieve using a pre-measured volume of reagent-grade water.
- The particles that pass through the sieve stack will be analyzed by laser diffraction Particle Size Distribution (PSD) analysis using the manufacturers recommended protocols (with the exception of no sonication).
- Particles retained on the sieve (>250 um) will not be analyzed with the laser diffraction PSD.
- Dry each sieve (500 um and 250 um) with the material it retained in a drying oven to a constant weight at 90 ± 2° C. The drying temperature should be less than 100° C to prevent boiling and potential loss of sample (PSEP, 1986).
- Cool the samples to room temperature in a desiccator.
- Weigh the cooled sample with each sieve to the nearest 0.01 mg.
- Subtract initial dry weight of each sieve from final dry weight of the sample and sieve together.
- Record weight of particles/debris separately for each size fraction (> 500 um and 499 - 250 um).
- Document the dominant types of particles/debris found in this each size fraction.

Laser Diffraction (PSD)

PSD results are reported in ml/L for each particle size range. Particle size gradations should match the Wentworth grade scale (Wentworth, 1922).

Mass Measurement

Equipment

__ Glass filter - 0.45 um (pore size) glass fiber filter disk (Standard Method D 3977) (larger diameter sized filter is preferable)
__ Drying oven (90 degrees C +2 degrees)
__ Analytical balance (0.01 mg accuracy)
__ Wash bottle
__ Reagent-grade water

Procedure

- Dry glass filter in drying oven at 90 ± 2° C to a constant weight.
- Cool the glass filter to room temperature in a desiccator.
- Weigh the 0.45 um glass filter to the nearest 0.01mg.
- Record the initial weight of the glass filter.
- Slowly pour the laser diffraction sample water (after analysis) through the previously weighed 0.45 um glass filter and discard the water.
- Use reagent-grade water in wash bottle to rinse particles adhering to the analysis container onto glass filter
- Dry glass filter with particles in a drying oven at 90 ± 2° C to a constant weight.
- Cool the glass filter and dried particles to room temperature in a desiccator.
- Weigh the glass filter and particles to the nearest 0.01mg.
- Subtract the initial glass filter weight from the final glass filter and particle sample weight.
- Record the final sample weight for particles <250 um in size.

Quality Assurance

Dried samples should be cooled in a desiccator and held there until they are weighed. If a desiccator is not used, the particles will accumulate ambient moisture and the sample weight will be overestimated. A color-indicating desiccant is recommended so that spent desiccant can be detected easily. Also, the seal on the desiccator should be checked periodically, and, if necessary, the ground glass rims should be greased or the "O" rings should be replaced.

Handle sieves with clean gloves to avoid adding oils or other products that could increase the weight. The weighing room should not have fluctuating temperatures or changing humidity. Any conditions that could affect results such as doors opening and closing should be minimized as much as possible.

After the initial weight of the sieve is measured, the sieve should be kept covered and dust free. Duplicate samples should be analyzed on 10% of the samples for both wet sieving and mass measurements.

Reporting

Visual observations should be made on all wet sieved fractions and recorded. For example if the very coarse sand fraction (2,000-1,000 um) is composed primarily of beauty bark, or cigarette butts, or other organic debris this should be noted. An option might also be for a professional geologist to record the geological composition of the sediment as well.

REFERENCES

ASTM. 1997. Standard test methods for determining sediment concentration in water samples. Method D 3977. American Society for Testing and Materials, Philadelphia, PA.

PSEP. 1986. Recommended Protocols for measuring conventional sediment variables in Puget Sound. Prepared by Tetra Tech, Inc. for U.S. Environmental Protection Agency and Puget Sound Water Quality Authority. Tetra Tech Inc., Bellevue, WA.

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