APPENDIX A

Western Washington Phase II Municipal Stormwater Permit

Issuance Date: January 17, 2007
Effective Date: February 16, 2007
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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.

Kelly Susewind, P.E., P.G.
Water Quality Program Manager
Department of Ecology

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SPECIAL CONDITIONS

Notice: If legislation related to this Permit is passed into law, Ecology will, as necessary, modify, revoke and re-issue or terminate this Permit to carry out legislative requirements. Any such modification will be in accordance with G14 *General Permit Modification and Revocation* and the provisions of WAC 173-226-230.

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 cities under the jurisdictional control of the county. The geographic area of coverage also includes any urban growth area contiguous to urbanized areas under the jurisdictional control of the county.
3. 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.
4. All regulated small MS4s owned or operated by the permittees named in S1.D.2.a. and located in another city or county area requiring coverage under either 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 municipal separate storm sewer systems (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 the Department 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 municipal separate storm sewers 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 the Department to obtain coverage under this permit or an alternative NPDES permit if the Department determines the small MS4 is a significant source of pollution to surface waters of the state. Notification of the Department'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 municipal separate storm sewers 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 jurisdiction.

   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 municipal separate storm sewer of the decision, in writing.

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

      i. The geographic area of permit coverage for the municipal separate storm sewer system;

      ii. Any modified dates or deadlines for developing and implementing the Stormwater Management Program in S5. or S6., as appropriate to the municipal separate storm sewer system, and for submitting their first annual report; and

      iii. A deadline for the operator of the municipal separate storm sewer system 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. The federal government on military bases or other federal lands; or by the United States Military, the Bureau of Land Management, the United States Park Service or other federal agencies;

   b. Federally recognized Indian Tribes located within Indian Country Lands; 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 have 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. Permittees: unless otherwise noted, the term "Permittee" shall include Permittee, Co-Permittee, and 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. "Co-Permittee" is any operator of a regulated small MS4 that is applying jointly with another applicant for coverage under this Permit. Co-Permittees own or operate a regulated small MS4 located within or adjacent to another regulated small MS4.

c. A "Secondary Permittee" is an operator of 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.

2. Operators of **regulated small MS4s** shall submit either an individual application to the Department or a Notice of Intent (NOI). Applications submitted after January 17, 2007 must be made using the NOI provided in Appendix 5. The NOI is also available on Ecology's website.

   a. All cities, towns and counties listed in i and ii below and operating regulated small MS4s shall apply as either a Permittee or Co-Permittee.

      i. Cities of: 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, Woodinville, and Yarrow Point.

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

   b. All other **regulated small MS4s** shall apply as a Secondary Permittee or as a Co-Permittee.

   c. The following cities, towns and counties submitted either an application or a NOI for coverage to Ecology prior to January 17, 2007:

      i. Cities and towns: Aberdeen, Algona, 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, Poulsbo, Puyallup, Redmond, Renton, Sammamish, SeaTac, Sedro-Woolley, Shoreline, Snohomish, Steilacoom, Sumner, Tukwila, Tumwater, University Place, Vancouver, Washougal, Woodinville, and Yarrow Point

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

d. All operators of regulated small MS4s located in jurisdictions listed in S1.D.2.a. shall submit to Ecology a NOI or individual permit application before the effective date of this permit, with the following exceptions:

   i. Operators of regulated small MS4s located in the Cities of Aberdeen, Anacortes, Centralia, Oak Harbor, and Port Angeles 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.c. do not need to submit a new application to be covered under this permit.

e. For operators of regulated small MS4s listed in S1.D.2.c., coverage under this permit is automatic and begins on the effective date of this permit, unless:

   i. The operator chooses to reapply before the effective date of this permit; or

   ii. The operator will be relying on another entity to satisfy one or more of their permit obligations in accordance with S1.D.2.g. and S1.D.3.d. below; or

   iii. The operator chooses be a Co-Permittee in accordance with S1.D.2.f. and S1.D.3.c. below; or

   iv. 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.

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

g. Operators of regulated small MS4s which are relying on another entity to satisfy one or more of their permit obligations shall submit a NOI to Ecology.

h. 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. NOIs shall be submitted to:

   Department of Ecology
   Water Quality Program
   Municipal Stormwater Permits
   P.O. Box 47696
   Olympia, WA 98504-7696

b. For NOIs submitted after January 17, 2007, the permit applicant shall provide public notice of the application in accordance with WAC 173-226-130(5). The applicant or co-applicant shall include a certification that the public notification requirements of WAC 173-226-130(5) have been satisfied. Unless Ecology responds in writing, coverage under this Permit will be effective 60 days after

receipt of a complete NOI. A complete NOI shall include the certification of public notice.

c. Permittees applying as co-applicants shall submit a joint NOI. The joint NOI shall clearly identify the areas of the MS4 for which each of the co-applicants are responsible.

d. 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.

e. Secondary permittees required to have coverage under this Permit, and the NPDES and State Waste Discharge Permit for Discharges from Small Municipal Separate Storm Sewers in Eastern Washington or the NPDES and State Waste Discharge Permit for Discharges from Large and Medium Municipal *Separate Storm Sewers*, 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 municipal separate storm sewer systems 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 covered under this Permit.

2. Discharges to ground waters not subject to regulation under the federal Clean Water Act are covered 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 municipal separate storm sewer systems owned or operated by each Permittee covered under this permit, in the geographic area covered pursuant to S1.A, only under the following conditions:

1. The discharge is authorized by a separate National Pollutant Discharge Elimination System (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.b. or S6.C.3.b.

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 municipal separate storm sewers 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 Reservations 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 Special Conditions S8.C. *Monitoring* and S5 *Stormwater Management Program for Cities, Towns and Counties.*

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 municipal separate storm sewer 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 a municipal separate storm sewer 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 Ecology also determines that (a) the violation of Water Quality Standards is already being addressed by a Total Maximum Daily Load or other enforceable water quality cleanup plan; or (b) Ecology concludes 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 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 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 conductedduring 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. 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.F.A or B above.

f. 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 RCW 70.105D.

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.B. and S5.C.1. through S5.C.5., and any additional actions necessary to meet the requirements of applicable TMDLs (see S7). The SWMP shall be designed to reduce the discharge of pollutants from the regulated small MS4 to the maximum extent practicable and to protect water quality. 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.

1. 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 180 days prior to the expiration date of this Permit. At a minimum the Permittee's SWMP shall be implemented throughout the geographic area subject to this Permit as described in S1.A.
2. Each Permittee shall prepare written documentation of the SWMP. The SWMP documentation shall be organized according to the program components in S5.C. 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 documentation shall include:
   a. A description of each of the program components included in S5.C., and
   b. Any additional actions implemented by the Permittee pursuant to S5.C., and
   c. Any additional actions necessary to meet the requirements of applicable TMDLs pursuant to S7 *Compliance with Total Maximum Daily Load Requirements*.
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. Beginning no later than January 1, 2009, each Permittee shall track the cost or estimated cost of development and implementation of each component of the SWMP. 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 stipulated by the respective program component. This information shall be included in the annual report.

4. The SWMP described herein supersedes SWMP descriptions provided by permit applicants in individual applications submitted to the Department prior to the effective date of this permit.

   Notwithstanding the schedules for implementation of SWMP components contained in this permit, Permittees that are already implementing some or all of the SWMP components in this section shall continue implementation of those components of their SWMP. Permittees shall not repeal existing local requirements to control stormwater that go beyond the requirements of this permit for new development and redevelopment sites.

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.

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

      ii. Coordination mechanisms shall coordinate stormwater management activities for shared water bodies among permittees to avoid conflicting plans, policies and regulations.

   b. The SWMP should include coordination mechanisms among departments within each jurisdiction to eliminate barriers to compliance with the terms of this permit.

B. The SWMP shall be designed to reduce the discharge of pollutants from regulated small MS4s to the maximum extent practicable (MEP), meet state AKART requirements, and protect water quality. Notwithstanding the schedules for implementation of SWMP components contained in this Permit, permittees who are implementing some or all of the SWMP components in this section shall continue implementation of those components of their SWMP.

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. In accordance with 40 CFR 122.35(a) and Special Condition S3, a city, town or county may rely on another entity to implement one or more of the components in this section.

1. <u>Public Education and Outreach</u>

   The SWMP shall include an education program aimed at residents, businesses, industries, elected officials, policy makers, planning staff and other employees of the Permittee. The goal of the education program is to reduce or eliminate behaviors and

practices that cause or contribute to adverse stormwater impacts. An education program may be developed locally or regionally.

The minimum measures are:

a. No later than two years after the effective date of this Permit, the Permittee shall provide an education and outreach program for the area served by the MS4. The outreach program shall be designed to achieve measurable improvements in the target audience's understanding of the problem and what they can do to solve it.

   Education and outreach efforts shall be prioritized to target the following audiences and subject areas:

   i. General public

      - General impacts of stormwater flows into surface waters.
      - Impacts from impervious surfaces.
      - Source control BMPs and environmental stewardship actions and opportunities in the areas of pet waste, vehicle maintenance, landscaping and buffers.

   ii. General public, businesses, including home-based and mobile businesses

      - BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials.
      - Impacts of illicit discharges and how to report them.

   iii. Homeowners, landscapers and property managers

      - Yard care techniques protective of water quality.
      - BMPs for use and storage of pesticides and fertilizers.
      - BMPs for carpet cleaning and auto repair and maintenance.
      - Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees.
      - Stormwater pond maintenance.

   iv. Engineers, contractors, developers, review staff and land use planners

      - Technical standards for stormwater site and erosion control plans.
      - Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees.
      - Stormwater treatment and flow control BMPs.

b. Each Permittee shall measure the understanding and adoption of the targeted behaviors for at least one targeted audience in at least one subject area. The resulting measurements shall be used to direct education and outreach resources most effectively, as well as to evaluate changes in adoption of the targeted behaviors.

c. Each Permittee shall track and maintain records of public education and outreach activities.

2. Public Involvement and Participation

   The SWMP shall include ongoing opportunities for public involvement through advisory councils, watershed committees, participation in developing rate-structures, stewardship programs, environmental activities or other similar activities. Each Permittee shall comply with applicable State and local public notice requirements when developing their SWMP.

   The minimum performance measures are:

   a. No later than one year from the effective date of this Permit, all permittees shall create opportunities for the public to participate in the decision-making processes involving the development, implementation and update of the Permittee's entire SWMP. Each Permittee shall develop and implement a process for consideration of public comments on their SWMP.

   b. Each Permittee shall make their SWMP, the annual report required under S9.A and all other submittals required by this Permit, available to the public. The annual report, and SWMP that was submitted with the latest annual report, shall be posted on the permittee's website. To comply with the posting requirement, a permittee that does not maintain a website may submit the updated SWMP in electronic format to the Department for posting on the Department's website.

3. Illicit Discharge Detection and Elimination

   The SWMP shall include an ongoing program to detect and remove illicit connections and discharges as defined in 40 CFR 122.26(b)(2), including any spills not under the purview of another responding authority, into the municipal separate storm sewers owned or operated by the Permittee. Permittees shall fully implement an ongoing illicit discharge detection and elimination program no later than 180 days prior to the expiration date of this Permit.

   The minimum performance measures are:

   a. A municipal storm sewer system map shall be developed no later than four years from the effective date of this permit. Municipal storm sewer system maps shall be periodically updated and shall include the following information:

      i. The location of all known municipal separate storm sewer outfalls and receiving waters and structural stormwater BMPs owned, operated, or maintained by the Permittee. Each Permittee shall map the attributes listed below for all storm sewer outfalls with a 24 inch nominal diameter or larger, or an equivalent cross-sectional area for non-pipe systems:

         - Tributary conveyances (indicate type, material, and size where known).
         - Associated drainage areas.
         - Land use.

      ii. Each Permittee shall initiate a program to develop and maintain a map of all connections to the municipal separate storm sewer authorized or allowed by the Permittee after the effective date of this Permit.

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

iv. Each Permittee shall make available to Ecology, upon request, municipal storm sewer system map(s) depicting the information required in S5.C.3.a.i. through iii above. The preferred format of submission will be an electronic format with fully described mapping standards. An example description is provided on Ecology WebPages under Core Services, GIS Data.

v. Upon request, and to the extent appropriate, permittees shall provide mapping information to co-permittees and secondary permittees.

b. Each Permittee shall develop and implement an ordinance or other regulatory mechanism to effectively prohibit non-stormwater, illicit discharges into the Permittee's municipal separate storm sewer system to the maximum extent allowable under State and Federal law. The ordinance or other regulatory mechanism shall be adopted no later than 30 months from the effective date of this Permit.

i. The regulatory mechanism does <u>not</u> 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(20)).
- Uncontaminated pumped ground water.
- Foundation drains.
- Air conditioning condensation.
- Irrigation water from agricultural sources that is commingled with urban stormwater.
- Springs.
- Water from crawl space pumps.
- Footing drains.
- Flows from riparian habitats and wetlands.
- Non-stormwater discharges covered by another NPDES permit.
- Discharges from emergency fire fighting activities in accordance with S2 *Authorized Discharges*.

ii. The regulatory mechanism shall prohibit the following categories of non-stormwater discharges unless the stated conditions are met:

- Discharges from potable water sources, including water line flushing, hyperchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be de-chlorinated to a 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 shall be minimized through, at a minimum, public education activities (see section S5.C.1) and water conservation efforts.
- Dechlorinated swimming pool discharges. The discharges shall be dechlorinated to a 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. 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 wash down 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 must minimize the amount of street wash and dust control water used. At active construction sites, street sweeping must be performed prior to washing the street.
- Other non-stormwater discharges. The discharges shall be in compliance with the requirements of a stormwater pollution prevention plan reviewed by the Permittee, which addresses control of such discharges.

iii. The Permittee's SWMP shall, at a minimum, address each category in ii above in accordance with the conditions stated therein.

iv. The SWMP 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.

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

vi. The Permittee shall develop an enforcement strategy and implement the enforcement provisions of the ordinance or other regulatory mechanism.

c. Each Permittee shall develop and implement an ongoing program to detect and address non-stormwater discharges, including spills, and illicit connections into the Permittee's municipal separate storm sewer system. The program shall be fully implemented no later than 180 days prior to the expiration date of this Permit and shall include:

i. Procedures for locating priority areas likely to have illicit discharges, including at a minimum: evaluating land uses and associated business/industrial activities present; areas where complaints have been registered in the past; and areas with storage of large quantities of materials that could result in spills.

ii. Field assessment activities, including visual inspection of priority outfalls identified in i, above, during dry weather and for the purposes of verifying outfall locations, identifying previously unknown outfalls, and detecting illicit discharges.

- Receiving waters shall be prioritized for visual inspection no later than three years from the effective date of this Permit, with field assessments of three high priority water bodies made no later than four years from the effective date of this Permit. Field assessments on at least one high priority water body shall be made each year thereafter.
- Screening for illicit connections shall 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 effectiveness.

iii. 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 include detailed instructions for evaluating whether the discharge must be immediately contained and steps to be taken for containment of the discharge.

Compliance with this provision shall be achieved by investigating (or referring to the appropriate agency) within 7 days, on average, any complaints, reports or monitoring information that indicates a potential illicit discharge, including spills; and immediately investigating (or referring) problems and violations determined to be emergencies or otherwise judged to be urgent or severe.

iv. 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.

v. Procedures for removing the source of the discharge; including notification of appropriate authorities; notification of the property owner; technical assistance for eliminating the discharge; follow-up inspections; and escalating enforcement and legal actions if the discharge is not eliminated.

Compliance with this provision shall be achieved by initiating an investigation within 21 days of a 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 the illicit nature of a storm drain connection, Permittees shall use their enforcement authority in a documented effort to eliminate the illicit connection within 6 months.

d. Permittees shall inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.

i. No later than 180 days prior to the expiration date of this Permit, distribute appropriate information to target audiences identified pursuant to S5.C.1.

ii. No later than two years from the effective date of this Permit, publicly list and publicize a hotline or other local telephone number for public reporting of spills and other illicit discharges. Keep a record of calls received and follow-up actions taken in accordance with S5.C.3.c.ii. through v. above; include a summary in the annual report (see section S9 Reporting and Record Keeping Requirements).

e. Permittees shall adopt and implement procedures for program evaluation and assessment, including tracking the number and type of illicit discharges, including spills, identified; inspections made; and any feedback received from public education efforts. A summary of this information shall be included in the Permittee's annual report (see section S9 Reporting and Recordkeeping Requirements).

f. Each Permittee will provide appropriate training for municipal field staff on the identification and reporting of illicit discharges into MS4s.

i. No later than thirty months after the effective date of this Permit, each Permittee shall ensure that all municipal field staff who are responsible for identification, investigation, termination, cleanup, and reporting illicit discharges, including spills, and illicit connections are trained to conduct these activities. Follow-up training shall be provided as needed to address changes in procedures, techniques or requirements. Permittees shall document and maintain records of the training provided and the staff trained.

ii. No later than three years after the effective date of this Permit, an ongoing training program shall be developed and implemented for all municipal field staff, which, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system shall be trained on the identification of an illicit discharge/connection, and on the proper procedures for reporting and responding to the illicit discharge/connection. Follow-up training shall be provided as needed to address changes in procedures, techniques or requirements. Permittees shall document and maintain records of the training provided and the staff trained.

4. <u>Controlling Runoff from New Development, Redevelopment and Construction Sites</u>

Each Permittee shall develop, implement, and enforce a program to reduce pollutants in stormwater runoff to a regulated small MS4 from new development, redevelopment and construction site activities. This program shall be applied to all sites that disturb a land area 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale. The program shall apply to private and public development, including roads. The "Technical Thresholds" in Appendix 1 shall be applied to all sites 1 acre or greater, including

projects less than one acre that are part of a larger common plan of the development or sale.

The minimum performance measures are:

a. The program shall include an ordinance or other enforceable mechanism that addresses runoff from new development, redevelopment, and construction site projects. Pursuant to S5.A.4., in adopting this ordinance or other regulatory mechanism, existing local requirements to apply stormwater controls at smaller sites, or at lower thresholds than required pursuant to S5.C.4., shall be retained. The ordinance or other enforceable mechanism shall be adopted and effective no later than February 16, 2010. The ordinance or other enforceable mechanism shall include, at a minimum:

   i. The Minimum Requirements, technical thresholds, and definitions in Appendix 1 or an equivalent approved by Ecology under the 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 basin plans or other similar water quality and quantity planning efforts. Such local requirements shall provide equal protection of receiving waters and equal levels of pollutant control to those provided in Appendix 1.

   ii. A site planning process and BMP selection and design criteria that, when used to implement the minimum requirements in Appendix 1 (or equivalent approved by Ecology under the Phase I Permit) will protect water quality, reduce the discharge of pollutants to the maximum extent practicable and satisfy the State requirement under Chapter 90.48 RCW to apply all known, available and reasonable methods of prevention, control and treatment (AKART) prior to discharge. Permittees shall document how the criteria and requirements will protect water quality, reduce the discharge of pollutants to the maximum extent practicable, and satisfy State AKART requirements.

   Permittees who choose to use the site planning process and BMP selection and design criteria in the 2005 *Stormwater Management Manual for Western Washington,* or an equivalent manual approved by the Department under the 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, to inspect private stormwater facilities that discharge to the Permittee's MS4.

   iv. Provisions to allow non-structural preventive actions and source reduction approaches such as Low Impact Development Techniques (LID), measures to minimize the creation of impervious surfaces and measures to minimize the disturbance of native soils and vegetation. Provisions for LID should take into account site conditions, access and long term maintenance.

v. If the Permittee chooses to allow construction sites to apply the "Erosivity Waiver" in Appendix 1, Minimum Requirement #2, the ordinance or regulatory mechanism shall include appropriate, escalating enforcement sanctions for construction sites that provide notice to the Permittee of their intention to apply the waiver but do not meet the requirements (including timeframe restrictions, limits on activities that result in non-stormwater discharges, and implementation of appropriate BMPs to prevent violations of water quality standards) to qualify for the waiver.

b. The program shall include a permitting process with 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 disturb a land area 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale. The process shall be in place no later than February 16, 2010.

i. Except as provided in S5.C.4.b.vii. below, review of all stormwater site plans for proposed development activities.

ii. Except as provided in S5.C.4.b.vii. below, inspect, prior to clearing and construction, all known 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.

iii. Except as provided in S5.C.4.b.vii. below, inspect all known 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 controls such as stormwater facilities and structural BMPs. Also, verify a maintenance plan is completed and responsibility for maintenance is assigned. 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 developed and implemented to respond to issues of non-compliance.

vii. If the Permittee chooses to allow construction sites to apply the "Erosivity Waiver" in Appendix 1, Minimum Requirement #2, the Permittee is not required to review the construction stormwater pollution prevention plans as part of the site plan review in (i) above, and is not required to perform

the construction phase inspections identified in (ii) and (iii) above related to construction sites which are eligible for the erosivity waiver.

c. The program shall include provisions to verify adequate long-term operation and maintenance (O&M) of post-construction stormwater facilities and BMPs that are permitted and constructed pursuant to (b) above. These provisions shall be in place no later than February 16, 2010 and shall include:

i. Adoption 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.

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 2005 *Stormwater Management Manual for Western Washington*. For facilities which do not have maintenance standards, the Permittee shall develop a maintenance standard.

(1) The purpose of the maintenance standard is to determine if maintenance is required. The maintenance standard is not a measure of the facilities required condition at all times between inspections. Exceeding the maintenance standard between the period of inspections is not a permit violation.

(2) Unless there are circumstances beyond the Permittee's control, when an inspection identifies an exceedence 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 exceedence of the required timeframe, the Permittee must document the circumstances and how they were beyond their control.

iii. Annual inspections of all stormwater treatment and flow control facilities (other than catch basins) permitted by the Permittee according to S5.C.4.b. unless there are maintenance records to justify a different frequency. The Permittee shall take appropriate maintenance actions in accordance with the adopted maintenance standards.

Reducing the inspection frequency shall be 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 new flow control and water quality treatment facilities, including catch basins, for new residential developments that are a part of a larger common plan of development or sale, every 6 months during the period of heaviest house construction (i.e., 1 to 2 years following subdivision approval) to identify maintenance needs and enforce compliance with maintenance standards as needed.

d. 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. Permittees shall keep records of all projects disturbing more than one acre, and all projects of any size that are part of a common plan of development or sale that is greater than one acre that are approved after the effective date of this Permit.

e. The program shall make available 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 will continue to enforce local ordinances controlling runoff from sites that are also covered by stormwater permits issued by Ecology.

f. No later than February 16, 2010, each Permittee shall verify that 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. 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.

5. <u>Pollution Prevention and Operation and Maintenance for Municipal Operations</u>

Within three years of the effective date of this Permit, each Permittee shall develop and 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.

The minimum performance measures are:

a. 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 2005 *Stormwater Management Manual for Western Washington*. For facilities which do not have maintenance standards, the Permittee shall develop a maintenance standard.

i. The purpose of the maintenance standard is to determine if maintenance is required. The maintenance standard is not a measure of the facilities

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 Permittees control, when an inspection identifies an exceedence 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 exceedence 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 facilities, other than catch basins, and taking appropriate maintenance actions in accordance with the adopted maintenance standards. The annual inspection requirement may be reduced based on inspection records.

Reducing the inspection frequency shall be 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 treatment and flow control facilities (other than catch basins) after major (greater than 24-hour-10-year recurrence interval rainfall) storm events. If spot checks indicate widespread damage/maintenance needs, inspect all stormwater treatment and flow control 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. Inspection of all catch basins and inlets owned or operated by the Permittee at least once before the end of the permit term. Clean catch basins if the inspection indicates cleaning is needed to comply with maintenance standards established in the 2005 *Stormwater Management Manual for Western Washington*. Decant water shall be disposed of in accordance with Appendix 6 *Street Waste Disposal*.

Inspections may be conducted on a "circuit basis" whereby a sampling of catch basins and inlets within each circuit is inspected to identify maintenance needs. Include in the sampling an inspection of the catch basin immediately upstream of any system outfall. 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.4.c., above.

As an alternative to inspecting catch basins on a "circuit basis," the Permittee may inspect all catch basins, and clean only catch basins where cleaning is needed to comply with maintenance standards.

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. Compliance during this permit term shall be determined by achieving an annual rate of at least 95% of inspections no later than 180 days prior to the expiration date of this permit.

f. Establishment and implementation of practices to reduce stormwater impacts associated with runoff from streets, parking lots, roads or highways owned or maintained by the Permittee, and road maintenance activities conducted by the Permittee. 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

g. Establishment and implementation of policies and procedures to reduce pollutants in discharges from all lands owned or maintained by the Permittee and subject to this Permit, including but not limited to: parks, open space, road right-of-way, maintenance yards, and stormwater treatment and flow control facilities. These policies and procedures shall address, but are not limited to:

- Application of fertilizer, pesticides, and herbicides including the development of nutrient management and integrated pest management plans.
- Sediment and erosion control.
- Landscape maintenance and vegetation disposal.
- Trash management.
- Building exterior cleaning and maintenance.

h. Develop and implement an on-going training program for employees of the Permittee whose construction, operations or maintenance job functions may impact stormwater quality. The training program shall address the importance of protecting water quality, the requirements of this Permit, 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, including potential illicit

discharges. Follow-up training shall be provided as needed to address changes in procedures, techniques or requirements. Permittees shall document and maintain records of training provided.

i. Development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the 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 covers stormwater discharges associated with the activity. Implementation of non-structural BMPs shall begin immediately after the pollution prevention plan is developed. 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.

j. Records of inspections and maintenance or repair activities conducted by the Permittee shall be maintained in accordance with S9 *Reporting Requirements*.

S6. STORMWATER MANAGEMENT PROGRAM FOR SECONDARY PERMITTEES

A. This section applies to all secondary permittees, whether coverage under this Permit is obtained individually or as a co-permittee with a city, town or county or another secondary permittee.

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). The SWMP shall be designed to reduce the discharge of pollutants from regulated small MS4s to the maximum extent practicable 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 than180 days before the expiration date of this Permit. Notwithstanding the schedules in this Permit, 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., and submitted a copy of the agreement to Ecology.

5. Each Secondary Permittee shall prepare written documentation of the SWMP. The SWMP documentation shall be organized according to the program components in S6.D below and shall be updated at least annually for submittal with the Permittee's annual reports to Ecology (see S9 *Reporting Requirements*). The SWMP documentation shall include:

   a. A description of each of the program components included in S6.D.1. through S6.D.6., and

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

B. Coordination

The SWMP shall include mechanisms to encourage coordinated stormwater-related policies, programs and projects within a watershed and interconnected MS4s. Where relevant and appropriate, the SWMP shall also include coordination 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 municipal separate storm sewers 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 term "Secondary Permittees" means drainage, diking, flood control, or diking and drainage districts, ports (other than the ports of Seattle and Tacoma), public colleges and universities, and any other owners or operators of municipal separate storm sewers located within the municipalities that are listed as permittees in S1.B.

SWMP components

1. <u>Public Education and Outreach</u>

   Each Secondary Permittee shall implement the following stormwater education strategies:

   a. Storm drain inlets owned and operated by the Secondary Permittee that are located in maintenance yards, in parking lots, along sidewalks, and at pedestrian access points shall be clearly and permanently labeled with the message "Dump no waste" and indicating the point of discharge as a river, lake, bay, or groundwater.

      i. No later than three years from the date of permit coverage, at least 50 percent of these inlets shall be labeled.

ii. No later than 180 days prior expiration date of this Permit, or as established as a condition of coverage by Ecology, all of these inlets shall be labeled.

iii. 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 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. Different combinations of topics shall be addressed each year, and, before the expiration date of this Permit, where relevant, tenants and residents shall receive educational information about the following topics:

i. How stormwater runoff affects local waterbodies

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

vi. Hazards associated with illicit connections

vii. Benefits of litter control and proper disposal of pet waste

Compliance with this requirement can be achieved through participation in the local jurisdiction's public education and outreach programs.

2. <u>Public Involvement and Participation</u>

No later than 180 days before the expiration date of this Permit, or as established as a condition of coverage by the Ecology, each Secondary Permittee shall:

a. Publish a public notice in the local newspaper or on the Permittee's website and solicit public review of their SWMP.

b. Make the latest updated version of the SWMP available to the public. If the Secondary Permittee maintains a website, the SWMP shall be posted on the Secondary Permittee's website.

3. <u>Illicit Discharge Detection and Elimination</u>

Each Secondary Permittee shall:

a. From the 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. No later than one year from the date of permit coverage, develop and adopt appropriate policies prohibiting illicit discharges, and identify possible enforcement mechanisms for those policies. No later than eighteen months from the date of permit coverage, develop and implement an enforcement plan using these mechanisms to ensure compliance with illicit discharge policies. These policies shall address, at a minimum: illicit connections and non-stormwater discharges, including spills of hazardous materials and improper disposal of pet waste and litter.

   i. Non-stormwater discharges covered by another NPDES permit and discharges from emergency fire fighting activities are allowed in the MS4 in accordance with S2 *Authorized Discharges*.

   ii. 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(20))
      - Uncontaminated pumped ground water
      - Foundation drains
      - Air conditioning condensation
      - Irrigation water from agricultural sources that is commingled with urban stormwater
      - Springs
      - Water from crawl space pumps
      - Footing drains
      - Flows from riparian habitats and wetlands

   iii. The policies shall prohibit the following categories of non-stormwater discharges unless the stated conditions are met:

      - Discharges from potable water sources, including water line flushing, hyperchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be de-chlorinated to a 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 discharges. The discharges shall be dechlorinated to a 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. 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 wash down 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. At active construction sites, street sweeping shall be performed prior to washing the street.
- Other non-stormwater discharges shall be in compliance with the requirements of a stormwater pollution prevention plan reviewed by the Permittee which addresses control of such discharges.

iv. The Secondary Permittee's SWMP shall, at a minimum, address each category in iii above in accordance with the conditions stated therein.

v. The SWMP shall further address any category of discharges in ii or iii above if the discharge is identified as a significant source of pollutants to waters of the State.

c. No later than 180 days before the expiration date of this Permit, or as established as a condition of coverage by Ecology, develop a storm sewer system map showing the locations of all known storm drain outfalls, labeled receiving waters and delineated areas contributing runoff to each outfall. Make the map (or completed portions of the map) available on request to the Department and/or to other Permittees or Secondary Permittees. The preferred, but not required, format of submission will be an electronic format with fully described mapping standards. An example description is provided on Ecology WebPages.

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

e. No later than 180 days before the expiration date of this Permit, or as established as a condition of coverage by the Ecology, develop and implement a spill response plan that includes coordination with a qualified spill responder.

f. No later than two years from permit coverage date, provide staff training or coordinate with existing training efforts to educate relevant staff on proper best

management practices for preventing illicit discharges, including spills. All relevant staff shall be trained.

4. Construction Site Stormwater Runoff Control

   From the 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. For all construction projects under the control of the Secondary Permittee which, require a construction stormwater permit, Secondary Permittees shall obtain coverage under the NPDES General Permit for Stormwater Discharges Associated with Construction Activities or an alternative individual NPDES permit prior to discharging construction related stormwater.

   c. Coordinate with the local jurisdiction regarding projects owned and 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 the Department or the local jurisdiction to provide access for inspection of construction sites or other land disturbances, which are under the control of the Secondary Permittee during the active grading and/or construction period.

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

   From the 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 post-construction stormwater pollution prevention measures.

   b. Coordinate with the local jurisdiction regarding projects owned and 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. No later than three years from the date of permit coverage, develop and 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.

i. Stormwater collection and conveyance system, including catch basins, stormwater sewer pipes, open channels, culverts, structural stormwater controls, and structural runoff treatment and/or flow control facilities. The O&M Plan shall address, but is not limited to: 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 structural post-construction stormwater BMPs to ensure facility function.

   For facilities located in Western Washington, 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 2005 Stormwater Management Manual for Western Washington,

   For facilities located in Eastern Washington, Secondary Permittees shall establish maintenance standards that are as protective or more protective of facility function than those specified in Chapters 5, 6 and 8 of the Stormwater Management Manual for Eastern Washington (2004),

   Secondary Permittees shall conduct spot checks of stormwater treatment and flow control facilities following a 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 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 management.

vi. Material storage areas, heavy equipment storage areas, and maintenance areas. 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 covers 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 date of coverage under this Permit, 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.

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. Train all employees whose 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, and

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

S7. COMPLIANCE WITH TOTAL MAXIMUM DAILY LOAD REQUIREMENTS

The following requirements apply if an applicable Total Maximum Daily Load (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 date permit coverage is granted.

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.

Where monitoring is required in Appendix 2, the Permittee shall conduct the monitoring according to a Quality Assurance Project Plan (QAPP) approved by Ecology.

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

A. Permittees are not required to conduct water sampling or other testing during the effective term of this Permit, with the following exceptions:

1. Any water quality monitoring required for compliance with TMDLs, pursuant to section S7 *Compliance with Total Maximum Daily Load Requirements* and Appendix 2 of this Permit, and
2. Any sampling or testing required for characterizing illicit discharges pursuant to section S5.C.3. or S6.D.3. of this Permit.

B. The Permittee shall provide the following information in each annual report:

1. A description of any stormwater monitoring or studies conducted by the Permittee during the reporting period. If stormwater monitoring was conducted on behalf of the Permittee, or if studies or investigations conducted by other entities were reported to the Permittee, a brief description of the type of information gathered or received shall be included in the annual report(s) covering the time period(s) the information was received.
2. An assessment of the appropriateness of the BMPs identified by the Permittee for each component of the SWMP; and any changes made, or anticipated to be made, to the BMPs that were previously selected to implement the SWMP, and why.
3. Information required pursuant to S8.C.2. below.

C. Preparation for future, long-term monitoring

This section does not apply to secondary permittees. However, secondary permittees are required to provide information, maps and access for sampling efforts, as necessary. Secondary permittees are encouraged to participate in the monitoring program.

1. All cities, towns and counties shall prepare to participate in the implementation of a comprehensive long-term monitoring program. The monitoring program will include two components: stormwater monitoring and targeted Stormwater Management Program (SWMP) effectiveness monitoring. Stormwater 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 permittees' jurisdictions. Stormwater program effectiveness monitoring is intended to improve stormwater management efforts by evaluating issues that significantly affect the success of, or confidence in, stormwater controls. The monitoring program can include long-term monitoring

and short-term studies. The results of the monitoring program will be used to support the adaptive management process and lead to refinements of the SWMP.

a. Stormwater monitoring

Cities having a population greater than 10,000 and counties having a population greater than 25,000 shall identify sites for long-term stormwater monitoring. Adequate sites will be those completely mapped as required in S5.C.3.a. and be suitable for permanent installation and operation of flow-weighted composite sampling equipment. No later than December 31, 2010:

i. Each county having a population greater than 100,000 shall identify three outfalls or conveyances where stormwater sampling could be conducted. One outfall or conveyance shall represent commercial land use, the second shall represent low-density residential land use and the third will represent medium-to-high density residential land use.

ii. Each city having a population greater than 75,000 shall identify three outfalls or conveyances where stormwater sampling could be conducted. One outfall or conveyance shall represent commercial land use, the second shall represent high-density residential land use and the third will represent industrial land use.

iii. Each county having a population between 25,000 and 100,000 shall identify two outfalls or conveyances where stormwater sampling could be conducted. One outfall shall represent commercial land use and the second one will represent low-density residential land use.

iv. Each city having a population between 10,000 and 75,000 shall identify two outfalls or conveyances where stormwater sampling could be conducted. One outfall shall represent commercial land use and the second will represent high-density residential land use.

v. Permittees shall select outfalls or conveyances based on known water quality problems and/or targeted areas of interest for future monitoring. The Permittee shall document:

- Why sites were selected;
- Possible site constraints for installation of and access to monitoring equipment;
- A brief description of the contributing drainage basin including size in acreage, dominant land use, and other contributing land uses;
- Any water quality concerns in the receiving water of each selected outfall or conveyance.

b. SWMP effectiveness monitoring

i. Each city, town and county shall prepare to conduct monitoring to determine the effectiveness of the Permittee's SWMP at controlling stormwater-related problems that are directly addressed by actions in the SWMP. This

component of the monitoring program shall be designed to answer the following types of questions:

- How effective is a targeted action or narrow suite of actions?
- Is the SWMP achieving a targeted environmental outcome?

ii. No later than December 31, 2010, each city, town and county shall identify at least two suitable questions and select sites where monitoring will be conducted. This monitoring shall include, at a minimum, plans for stormwater, sediment or receiving water monitoring of physical, chemical and/or biological characteristics. This monitoring may also include data collection and analysis of other measures of program effectiveness, problem identification and characterizing discharges for planning purposes.

iii. For each question, the Permittee shall develop a monitoring plan containing the following elements:

- A statement of the question, an explanation of how and why the issue is significant to the Permittee, and a discussion of whether and how the results of the monitoring may be significant to other MS4s.
- A specific hypothesis about the issue or management actions that will be tested.
- Specific parameters or attributes to be measured.
- Expected modifications to management actions depending on the outcome of hypothesis testing.

2. Monitoring program reporting requirements

a. The fourth annual report shall:

i. Describe the status of identification of sites for stormwater monitoring, if required for the Permittee.

ii. Include a summary of proposed questions for the SWMP effectiveness monitoring and describe the status of developing the monitoring plan, including the proposed purpose, design, and methods.

b. To comply with the requirements of all or part(s) of this section, permittees in a single Urbanized Area or WRIA may choose to submit a collaborative report or reports in lieu of separate reports.

S9. REPORTING REQUIREMENTS

A. No later than March 31 of each year beginning in 2008, each Permittee shall submit an annual report. The reporting period for the first annual report will be from the effective date of this permit through December 31, 2007. The reporting period for all subsequent annual reports will be the previous calendar year.

B. Two printed copies and an electronic (PDF) copy of each document shall be submitted to Ecology. All submittals shall be delivered to:

Department of Ecology
Water Quality Program
Municipal Stormwater Permits
P.O. Box 47696
Olympia, WA 98504-7696

C. Each Permittee is required to keep all records related to this permit and the SWMP for at least five years. Except for the requirements of the annual reports described in this permit, records shall be submitted to Ecology only upon request,

D. 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.

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

   Each annual report shall include the following:

   1. A copy of the Permittee's current Stormwater Management Program as required by S5.A.2.
   2. Submittal of Appendix 3 – *Annual Report Form for Cities, Towns, and Counties,* which is intended to summarize the Permittees compliance with the conditions of this permit, including:
      a. Status of implementation of each component of the SWMP in section S5 *Stormwater Management Program for Cities, Towns and Counties*.
      b. An assessment of the Permittee's progress in meeting the minimum performance standards established for each of the minimum control measures of the SWMP.
      c. A description of activities being implemented to comply with each component of the SWMP, including the number and type of inspections, enforcement actions, public education and involvement activities, and illicit discharges detected and eliminated.
      d. The Permittee's SWMP implementation schedule and plans for meeting permit deadlines, and the status of SWMP implementation to date. If permit deadlines are not met, or may not be met in the future, include: reasons why, corrective steps taken and proposed, and expected dates that the deadlines will be met.
      e. A summary of the Permittee's evaluation of their SWMP, according to sections S5.A.4. and S8.B.2.
      f. If applicable, notice that the MS4 is relying on another governmental entity to satisfy any of the obligations under this permit.

g. Updated information from the prior annual report plus any new information received during the reporting period, pursuant to S8.B.2. above.

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

3. Permittees shall include with the annual report, 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, and implications for the SWMP.

4. Permittees shall include with the annual report submitted no later than March 31, 2011 information that at a minimum includes:

   a. A summary of identified barriers to the use of low impact development (LID) within the area covered by the permit and measures to address the barriers. Each individual Permittee must complete this summary.

   b. A report completed by an individual Permittee or in cooperation with multiple Permittees describing, at a minimum:

      i. LID practices that are currently available and that can reasonably be implemented within this permit term.

      ii. Potential or planned non-structural actions and LID techniques to prevent stormwater impacts.

      iii. Goals and metrics to identify, promote, and measure LID use.

      iv. Potential or planned schedules for the Permittee(s) to require and implement the non-structural and LID techniques on a broader scale in the future.

F. Annual report for Secondary Permittees

All Secondary Permittees shall complete the *Annual Report Form for Secondary Permittees* (Appendix 4) and submit it along with any supporting documentation to Ecology.

1. The *Annual Report Form for Secondary Permittees* is intended to summarize the Permittees compliance with the conditions of this permit, including:

   a. Status of implementation of each component of the SWMP in section S6 *Stormwater Management Program for Secondary Permittees* of this permit.

   b. An assessment of the Permittee's progress in meeting the minimum performance standards established for each of the minimum control measures of the SWMP.

   c. A summary of the Permittee's evaluation of their SWMP, according to section S8.B.2.

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

e. Updated information from the prior annual report plus any new information received during the reporting period pursuant to S8.B.1 and S8.B.2.

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

2. Secondary Permittees shall include with the annual report a notification of any jurisdictional boundary changes resulting in an increase or decrease in the Permittee's geographic area of permit coverage during the reporting period, and implications for the SWMP.

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 municipal storm sewer 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, and,

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. The Ecology Northwest Regional Office 24-hour number is 425-649-7000 and for the Southwest Regional Office the number is 360-407-6300.

C. Immediately report discharges, including spills, which might cause bacterial contamination of shellfish, such as might result 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 24-hour number is 360-236-3330.

D. Immediately report spills or discharges of oils or hazardous materials 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 are 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.

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 4.

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

G19. CERTIFICATION AND SIGNATURE

All applications, reports, or information submitted to the Department shall be signed and certified.

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

B. All reports required by this Permit and other information requested by the Department 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 the Department, 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 the Department prior to or together with any reports, information, or applications to be signed by an authorized representative.

D. Certification. Any person signing a document 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 it 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

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

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

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 the Permittee's application is received by Ecology, or prior to a modification of this Permit, whichever is later.

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

BMP means Best Management Practice.

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

Common plan of development or sale means a site where multiple separate and distinct construction activities may be taking place at different times on different schedules, but still under a single plan. Examples include: phased projects and projects with multiple filings or lots, even if the separate phases or filings/lots will be constructed under separate contract or by separate owners (e.g. a development where lots are sold to separate builders); a development plan that may be phased over multiple years, but is still under a consistent plan for long-term development; and projects in a contiguous area that may be unrelated but still under the same contract, such as construction of a building extension and a new parking lot at the same facility. If the project is part of a common plan of development or sale, the disturbed area of the entire plan shall be used in determining permit requirements.

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

Co-permittee means an operator of a regulated small MS4 which is applying jointly with another applicant for coverage under this permit. A co-permittee is an owner or operator of a regulated small MS4 located within or adjacent to another regulated MS4. A co-permittee is only responsible for complying with the conditions of this permit 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.

Detailed Implementation Plan means the formal implementation plan for a Total Maximum Daily Load (TMDL) or water quality clean-up plan.

DIP means Detailed Implementation Plan.

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

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

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

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.

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.

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.

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. Disinfection of water mains and appurtenances requires a chlorine residual of 10 mg/L at the end of the disinfection period. This level is well above the Maximum Residual Disinfectant Level of an annual average of 4 mg/Liter chlorine for potable water.

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

Illicit discharge means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.

Large Municipal Separate Storm Sewer System means all municipal separate storm sewer systems located in an incorporated place with a population of 250,000 or more, a county with unincorporated urbanized areas with a population of 250,000 or more according to the 1990 decennial census by the Bureau of Census.

Low Density Residential Land Use means, for the purpose of permit section S8 Monitoring, one unit per 1-5 acres.

Low Impact Development (LID) means a stormwater management and land development strategy applied at the parcel and subdivision scale that emphasizes conservation and use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely mimic pre-development hydrologic functions.

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

Material Storage Facilities means an uncovered area where bulk materials (liquid, solid, granular, etc.) are stored in piles, barrels, tanks, bins, crates, or other means.

Maximum Extent Practicable (MEP) refers to paragraph 402(p)(3)(B)(iii) of the federal Clean Water Act which reads as follows: Permits for discharges from municipal storm sewers shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and system, design, and engineering methods, and other such provisions as the Administrator or the State determines appropriate for the control of such pollutants.

Medium Municipal Separate Storm Sewer System means municipal separate storm sewer systems located in an incorporated place with a population of more than 100,000 but less than 250,000, or a county with unincorporated urbanized areas of more than 100,000 but less than 250,000 according to the 1990 decennial census by the Bureau of Census.

MEP means Maximum Extent Practicable.

MTRs means Minimum Technical Requirements.

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

(i) owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States.

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

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

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking, and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the state from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of Ecology.

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

Notice of Intent for Construction Activity and **Notice of Intent for Industrial Activity** mean the application forms for coverage under the *Baseline General Permit for Stormwater Discharges Associated with Industrial Activities*.

Outfall means point source as defined by 40 CFR 122.2 at the point where a municipal separate storm sewer discharges to waters of the State and does not include open conveyances connecting two municipal separate storm sewer systems, or pipes, tunnels, or other conveyances which connect segments of the same stream or other waters of the State and are used to convey waters of the State.

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

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

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

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

Physically Interconnected means that one MS4 is connected to a second MS4 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 MS4 belonging to another entity.

Pollutant Generating Impervious Surfaces (PGIS) are surfaces considered to be significant sources of pollutants in stormwater runoff. Such surfaces include those that are subject to vehicular use, industrial activities, or storage of erodible or leachable materials that receive direct rainfall or run-on or blow-in of rainfall. Metal roofs are considered to be PGIS unless coated with an inert, non-leachable material. Roofs that are subject to venting of indoor pollutants from manufacturing, commercial or other operations or processes are also considered PGIS. A surface, whether paved or not, shall be considered PGIS if it is regularly used by motor vehicles. The following are considered regularly-used surfaces: roads, unvegetated road shoulders, bike lanes within the traveled lane of a roadway, driveways, parking lots, unfenced fire lanes, vehicular equipment storage yards, and airport runways.

Process Wastewater means any water which, during manufacture or processing, comes into direct contact with or results form the production or use of any raw material, intermediate product, finished product, by product, or waste product.

Qualified Personnel or Consultant 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.

RCW means the Revised Code of Washington State.

Regulated Small Municipal Separate Storm Sewer System (MS4) 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 the NPDES permitting authority and is not eligible for a waiver or exemption under S1.C.

Replaced impervious surfaces means, for structures, the removal and replacement of any exterior impervious surfaces or foundation; or, for other impervious surfaces, the removal down to bare soil, or base course, and replacement. Exemptions and partial exemptions are defined in Appendix 1 of this Permit.

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."

Shared Waterbodies means waterbodies, including downstream segments, lakes and estuaries that receive discharges from more than one permittee.

Secondary Permittee is an operator of regulated small municipal separate storm sewer system which 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.

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

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 6 Determining Construction Site Sediment Transport Potential for a more detailed definition.

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

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

b. Designed or used for collecting or conveying stormwater.

c. Not a combined sewer system,

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

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

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

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

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

Stormwater Associated with Industrial and Construction Activity means the discharge from any conveyance which is used for collecting and conveying stormwater, which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant, or associated with clearing grading and/or excavation, and is required to have an NPDES permit in accordance with 40 CFR 122.26.

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

Stormwater Management Program (SWMP) means a set of actions and activities designed to reduce the discharge of pollutants from the regulated small MS4 to the maximum extent practicable and to protect water quality, and comprising the components listed in S5 or S6 of this Permit and any additional actions necessary to meet the requirements of applicable

Total Maximum Daily Load (TMDL) 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.

Urbanized Area (UA) is a 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. For the year 2000 Census, the U.S. Census Bureau classified "urban" as all territory, population, and housing units located within an Urbanized Area (UA) or an Urban Cluster (UC). It delineated UA and UC boundaries to encompass densely settled territory, which consists of: core census

block groups or blocks that have a population density of at least 1,000 people per square mile and surrounding census blocks that have an overall density of at least 500 people per square mile. In addition, under certain conditions, less densely settled territory may be part of each UA or UC. The U.S. Census Bureau announced the "Census 2000 Urbanized Areas" on May 1, 2002. More information can be found at the U.S. Census Bureau website.

Urban/higher density rural subbasins means any subbasin or portion thereof that is within or proposed to be within the urban growth area (UGA), or any rural area subbasin or portion thereof fifty percent or more of which is comprised of lots smaller than 5 acres in size.

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.

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.

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.

APPENDIX 1 – Minimum Technical Requirements for New Development and Redevelopment

Section 1. Exemptions

Forest practices:

Forest practices regulated under Title 222 WAC, except for Class IV General forest practices that are conversions from timber land 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.

Road Maintenance:

The following road 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, and vegetation maintenance.

The following road maintenance practices are considered redevelopment, and therefore 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 roadway base: If impervious surfaces are not expanded, Minimum Requirements #1 - #5 apply. However, in most cases, only Minimum Requirement #2, Construction Stormwater Pollution Prevention, will be germane. Where appropriate, project proponents are encouraged to look for opportunities to use permeable and porous pavements.
- 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 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 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.

All other new development is subject to one or more of the Minimum Requirements (see Section 3 of this Appendix).

Section 2. Definitions Related to Minimum Requirements

Arterial - A road or street primarily for through traffic. A major arterial connects an Interstate Highway to cities and counties. A minor arterial connects major arterials to collectors. A collector connects an arterial to a neighborhood. A collector is not an arterial. A local access road connects individual homes to a collector.

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 Department (see BMP C160 in the *Stormwater Management Manual* for *Western Washington* (2005)). 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 listing are provided online at Ecology's web site.

Effective Impervious surface - Those impervious surfaces that are connected via sheet flow or discrete conveyance to a drainage system. Impervious surfaces on residential development sites are considered ineffective if 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* (2005).

Highway – A main public road connecting towns and cities

Impervious surface - A hard surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A hard 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 movement of earth, or 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 are not considered land-disturbing activity.

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. See also Road 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 impervious 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.

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); or storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall. Erodible or leachable materials, wastes, or chemicals are those substances which, when exposed to rainfall, measurably alter the physical or chemical characteristics of the rainfall runoff. Examples include erodible soils that are stockpiled, uncovered process wastes, manure, fertilizers, oily substances, ashes, kiln dust, and garbage dumpster leakage. Metal roofs are also considered to be PGIS unless they are coated with an inert, non-leachable material (e.g., baked-on enamel coating).

A surface, whether paved or not, shall be considered subject to vehicular use if it is regularly used by motor vehicles. The following are considered regularly-used surfaces: roads, unvegetated road shoulders, bike lanes within the traveled lane of a roadway, driveways, parking lots, unfenced fire lanes, vehicular equipment storage yards, and airport runways.

The following are not considered regularly-used surfaces: paved bicycle pathways separated from and not subject to drainage from roads for motor vehicles, fenced fire lanes, and infrequently used maintenance access roads.

Pollution-generating pervious surfaces (PGPS) - Any non-impervious surface subject to use of pesticides and fertilizers or loss of soil. Typical PGPS include lawns, landscaped areas, golf courses, parks, cemeteries, and sports fields.

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 impervious surfaces, or replaced impervious surfaces.

Receiving waters - Bodies of water or surface water systems to which surface runoff is discharged via a point source of stormwater or via sheet flow.

Redevelopment - On a site that is already substantially developed (i.e., has 35% or more of existing impervious surface coverage), the creation or addition of impervious 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 impervious surface that is not part of a routine maintenance activity; and land disturbing activities.

Replaced impervious surface - For structures, the removal and replacement of any exterior impervious surfaces or 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. This manual 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 *Stormwater Management Manual for Western Washington* (2005) for details.

Threshold Discharge Area - An onsite 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 manual are applied to project sites with multiple discharge points.

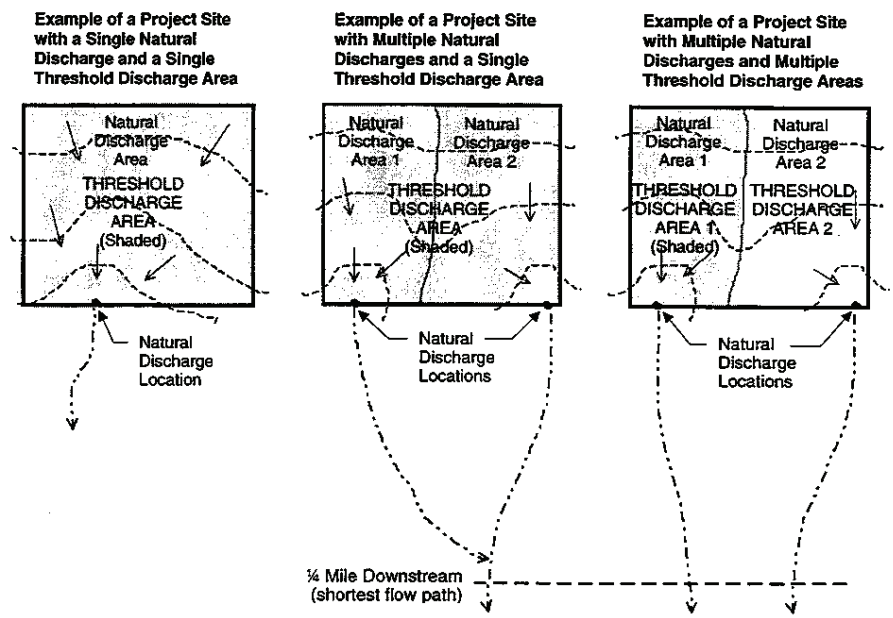

Figure 2.1 Threshold Discharge Areas

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 type and size of the project. This section identifies thresholds that determine the applicability of the Minimum Requirements to different projects. The flow charts in Figures 3.1, 3.2 and 3.3 must be used to determine which of the Minimum Requirements apply. The Minimum Requirements themselves are presented in Section 4 of this Appendix.

The thresholds below apply to new development, redevelopment, and construction site activities that result in land disturbance of equal or greater than one acre, including projects less than one acre that are part of a larger common plan of development or sale. This threshold is defined as the "regulatory threshold". If as described above, the project exceeds the one acre regulatory threshold, the technical thresholds contained in this section (Section 3) shall be applied by the Permittee to determine which of the minimum requirements must be applied to the project.

Permittees whose ordinances at the time of permit issuance, regulate new development and redevelopment at sites below the regulatory threshold must continue to regulate stormwater from these project sites. For these project sites below the regulatory threshold, the permittee must continue to apply the local stormwater requirements in effect at the time of permit issuance or apply the minimum requirements for new development and re-development contained in this Appendix.

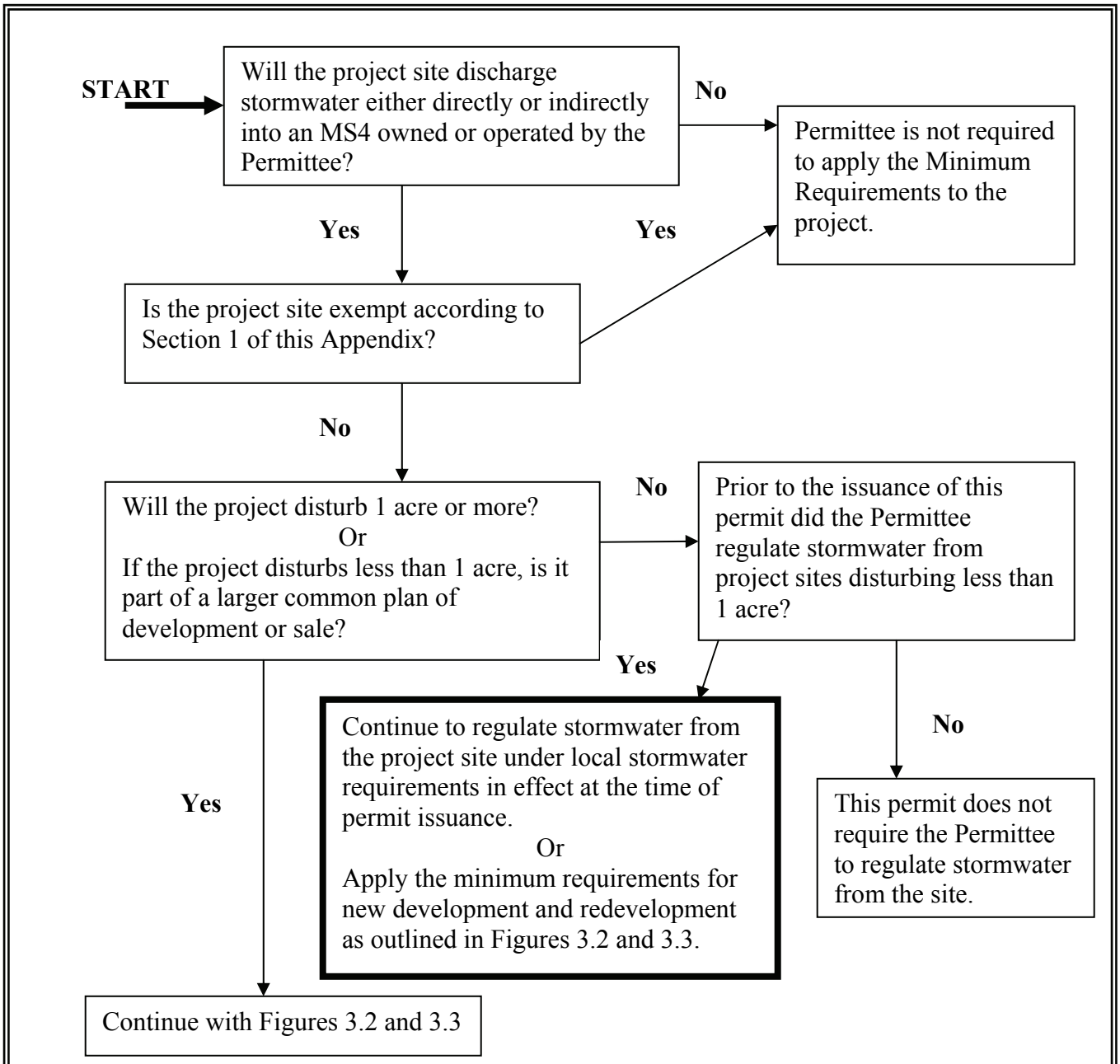

Figure 3.1 Flow Chart for Determining Whether the Permittee Must Regulate the Project

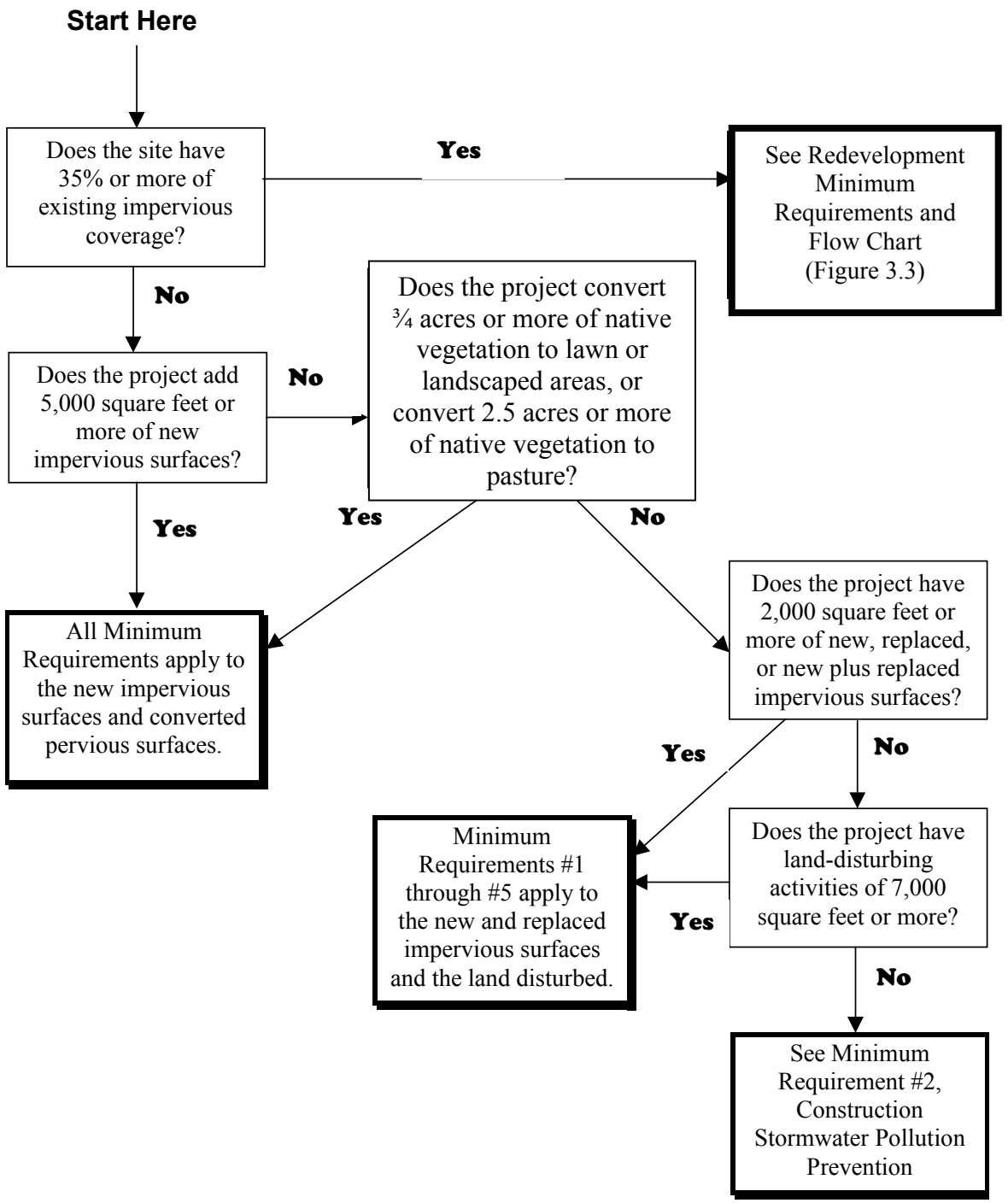

Figure 3.2 Flow Chart for Determining Requirements for New Development

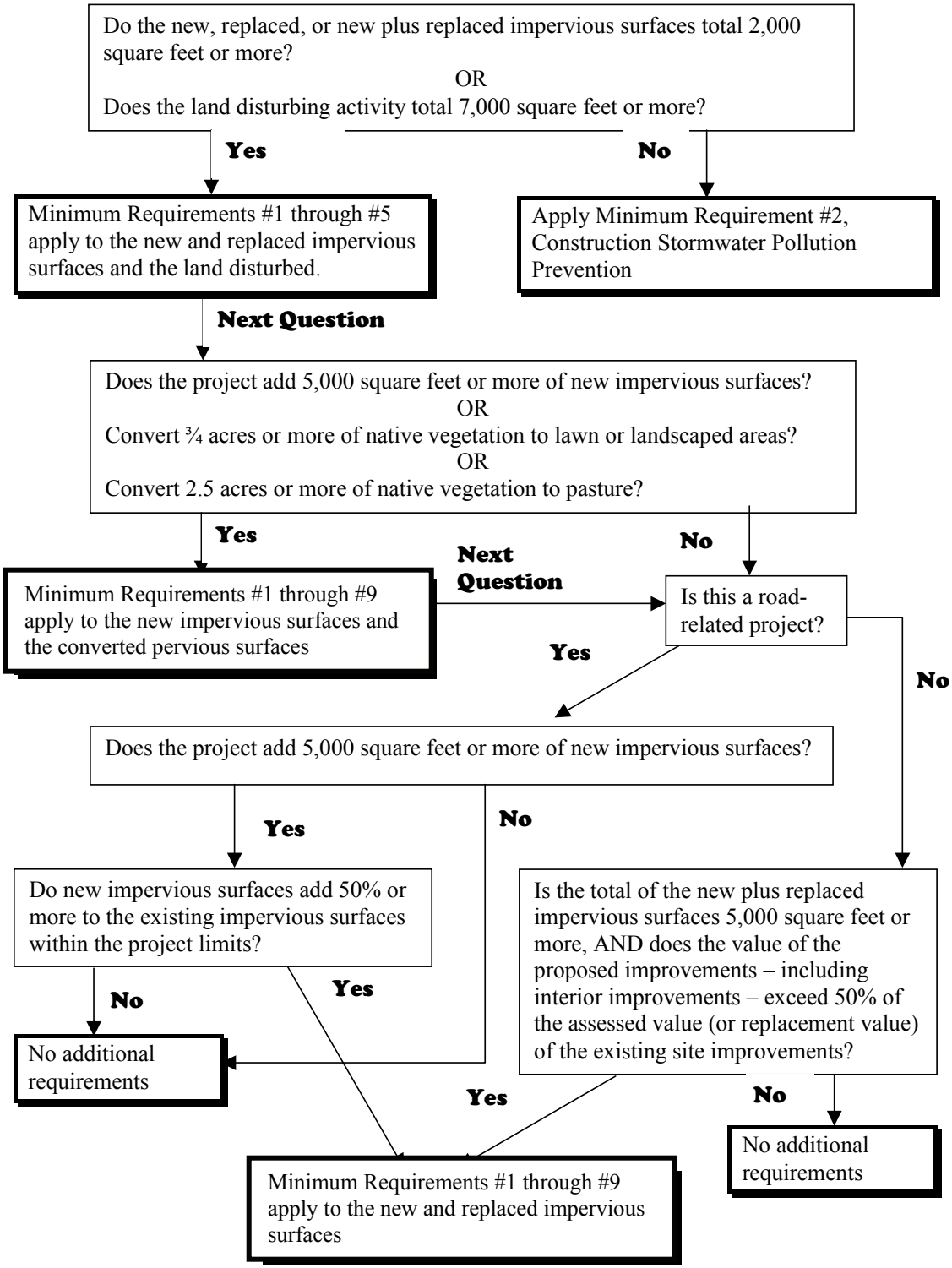

Figure 3.3 Flow Chart for Determining Requirements for Redevelopment

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 impervious surfaces and the land disturbed:

- Creates or adds 2,000 square feet, or greater, of new, replaced, or new plus replaced impervious 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 #10 for the new impervious surfaces and the converted pervious surfaces:

- Creates or adds 5,000 square feet, or more, of new impervious surface area, or
- Converts ¾ acres, or more, of native 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. In addition, all redevelopment that exceeds certain thresholds shall be required to comply with additional Minimum Requirements as follows.

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

- The new, replaced, or total of *new plus rep*laced impervious surfaces is 2,000 square feet or more, or
- 7,000 square feet or more of land disturbing activities.

The following redevelopment shall comply with Minimum Requirements #1 through #10 for the new impervious surfaces and converted pervious areas:

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

If the runoff from the new impervious surfaces and converted pervious surfaces is not separated from runoff from other surfaces on the project site, the stormwater treatment facilities must be sized for the entire flow that is directed to them.
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 roads' 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 impervious surfaces (including pavement, shoulders, curbs, and sidewalks) shall meet all the Minimum Requirements if the new impervious surfaces total 5,000 square feet or more and total 50% or more of the existing impervious 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 all the Minimum Requirements for the new and replaced impervious surfaces if the total of new plus replaced impervious 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 Requirements for treatment, flow control, and wetlands protection as applied to the replaced impervious surfaces if the Permittee has adopted a plan and a schedule that fulfills those requirements in regional facilities. See also Sections 5, 6 and 7 of this Appendix.

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 #6 Runoff Treatment, Minimum Requirement #7 Flow Control, and/or Minimum Requirement #8 Wetlands Protection. Basin planning may be used to support alternative treatment, flow control, and/or wetland protection requirements to those contained in Section 4 of this Appendix. 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 basin planning may be used to modify the Minimum Requirements is Section 4.

Section 4. Minimum Requirements

This Section describes the Minimum Requirements for stormwater management at 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 be prepared in accordance with Chapter 3 of Volume 1 of the *Stormwater Management Manual for Western Washington* (2005).

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.

Permittees may choose to allow site operators to apply an "Erosivity Waiver" to projects disturbing less than five acres that meet the requirements at the end of this section; such projects would be waived from the requirement that the Permittee review site plans for construction phase stormwater pollution prevention.

The Permittee may develop an abbreviated SWPPP format to meet the SWPPP requirement under this permit for sites that are less than 1 acre.

General Requirements

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) as part of the Stormwater Site Plan (see Minimum Requirement #1 above) for all projects which meet the thresholds in Section 3 of this Appendix. The SWPPP shall be implemented beginning with initial soil disturbance and until final stabilization.

Sediment and Erosion control BMPs shall be consistent with the BMPs contained in chapters 3 and 4 of Volume II of the *Stormwater Management Manual for Western Washington* (2005), and/or other equivalent BMPs contained in technical stormwater manuals approved by the Department.

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. 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. When establishing these permitted clearing and grading areas, consideration should be given to minimizing removal of existing trees and minimizing disturbance/compaction of native soils except as needed for building purposes. 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.

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

The construction site operator shall include each of the twelve elements below in the SWPPP and ensure that they are implemented unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the SWPPP. The SWPPP shall include both 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.

1. Preserve Vegetation/Mark Clearing Limits:

   a. Prior to 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. The duff layer, native top soil, and natural vegetation shall be retained in an undisturbed state to the maximum degree practicable.

2. Establish Construction Access:

   a. Construction vehicle access and exit shall be limited to one route, if possible.

   b. Access points shall be stabilized with quarry spalls, crushed rock or other equivalent BMP to minimize the tracking of sediment onto public roads.

   c. Wheel wash or tire baths shall be located on site, if the stabilized constructions entrance is not effective in preventing sediment from being tracked onto public roads.

   d. If sediment is tracked off site, roads shall be cleaned thoroughly at the end of each day, or more frequently during wet weather. Sediment shall be removed from roads by shoveling or pickup sweeping and shall be transported to a controlled sediment disposal area.

   e. Street washing is allowed only after sediment is removed in accordance with 2.d, above. Street wash wastewater shall be controlled by pumping back on site or otherwise be prevented from discharging into systems tributary to waters of the state.

3. Control Flow Rates:

   a. Properties and waterways downstream from development sites shall be protected from erosion 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, stormwater retention or detention facilities shall be constructed as one of the first steps in grading. Detention facilities shall be functional prior to construction of site improvements (e.g., impervious surfaces).

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

4. Install Sediment Controls:

   a. Stormwater runoff from disturbed areas shall pass through a sediment pond, or other appropriate sediment removal BMP, prior to leaving a construction site or prior to discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but shall meet the flow control performance standard of 3.a, above.

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

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

5. Stabilize Soils:

   a. Exposed and unworked soils shall be stabilized by application of effective BMPs that prevent erosion.

   b. No soils should 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

   c. The time period may be adjusted by the Permittee, if the Permittee can show that local precipitation data justify a different standard.

   d. Soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.

   e. Soil stockpiles must be stabilized from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways and drainage channels.

6. Protect Slopes:

   a. Design and construct cut and fill slopes in a manner that will minimize erosion.

   b. Off-site stormwater (run-on) or groundwater shall be diverted away from slopes and undisturbed 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 shall handle the expected peak 10-minute flow velocity 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 shall 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."

   d. Excavated material shall be placed on the uphill side of trenches, consistent with safety and space considerations.

   e. Check dams shall be placed at regular intervals within constructed channels that are cut down a slope.

7. Protect Drain Inlets:
   a. Storm drain inlets made operable during construction shall be protected so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.
   b. Inlet protection devices shall be cleaned or removed and replaced 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. All temporary on-site conveyance channels shall be designed, constructed, and stabilized to prevent erosion from the following expected peak flows. Channels shall handle the expected peak 10-minute flow velocity 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 shall 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. Stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches shall be provided at the outlets of all conveyance systems.
9. Control Pollutants:
   a. All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner that does not cause contamination of stormwater.
   b. Cover, containment, and protection from vandalism shall be provided 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 shall include secondary containment.
   c. Maintenance, fueling and repair of heavy equipment and vehicles shall be conducted using spill prevention and control measures. Contaminated surfaces shall be cleaned immediately following any spill incident.
   d. Wheel wash or tire bath wastewater shall be discharged to a separate on-site treatment system or to the sanitary sewer with local sewer district approval.
   e. Application of fertilizers and pesticides shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers' label requirements for application rates and procedures shall be followed.
   f. BMPs shall be used to prevent or treat contamination of stormwater runoff by pH modifying sources. These sources 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. Permittees shall require construction site operators to adjust the pH of stormwater if necessary to prevent violations of water quality standards.

g. Permittees shall require construction site operators obtain written approval from the Department prior to using chemical treatment other than CO2 or dry ice to adjust pH.

10. Control De-Watering:

    a. Foundation, vault, and trench de-watering water, which have similar characteristics to stormwater runoff at the site, shall be discharged into a controlled conveyance system prior to discharge to a sediment trap or sediment pond.

    b. Clean, non-turbid de-watering water, such as well-point ground water, can be discharged 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. Clean de-watering water should not be routed through stormwater sediment ponds.

    c. Other de-watering disposal options may include: (i) infiltration; (ii) transport offsite in vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters; (iii) on-site chemical treatment or other suitable treatment technologies approved by the Permittee; (iv) sanitary sewer discharge with local sewer district approval, if there is no other option; or (v) use of a sedimentation bag with outfall to a ditch or swale for small volumes of localized de-watering.

    d. Highly turbid or contaminated dewatering water shall be handled separately from stormwater.

11. Maintain BMPs:

    a. All temporary and permanent erosion and sediment control BMPs shall be inspected, maintained and repaired as needed to assure continued performance of their intended function in accordance with BMP specifications.

    b. All temporary erosion and sediment control BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed.

12. Manage the Project:

    a. Development projects shall be phased to the maximum degree practicable and shall take into account seasonal work limitations.

    b. The Permittee must require construction site operators to maintain, and repair as needed, all sediment and erosion control BMPs to assure continued performance of their intended function.

    c. The Permittee must require construction site operators to periodically inspect their sites. For projects that disturb one or more acres, site inspections shall be

conducted by a Certified Erosion and Sediment Control Lead who shall be identified in the SWPPP and shall be present on-site or on-call at all times.

d. Permittee must require construction site operators to maintain, update and implement their SWPPP. Permittees shall require construction site operators to modify their SWPPP whenever there is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the state.

Erosivity Waiver

Permittees may allow construction site operators to qualify for a waiver from the requirement to submit a SWPPP for review by the Permittee provided the following conditions are met:

1. The site will result in the disturbance of less than 5 acres; and the site is not a portion of a common plan of development or sale that will disturb 5 acres or greater; and
2. The project's rainfall erosivity factor ("R" Factor) is less than 5 during the period of construction activity, as calculated using the Texas A&M University online rainfall erosivity calculator at: http://ei.tamu.edu/. The period of construction activity begins at initial earth disturbance and ends with final stabilization; and
3. The entire period of construction activity falls between June 15 and September 15; and
4. The site or facility has not been declared a significant contributor of pollutants; and
5. There are no planned construction activities at the site that will result in non-stormwater discharges; and
6. A waiver is allowed by the Permittee; and
7. The construction site operators notify the Permittee of the intention to apply this waiver at least one week prior to commencing land disturbing activities. The notification must include a summary of the project information used in calculating the project's rainfall erosivity factor (see #2 above) and a certified statement that:
   - The operator will comply with applicable local stormwater requirements; and
   - The operator will implement appropriate erosion and sediment control BMPs to prevent violations of water quality standards.

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* (2005) or an approved equivalent manual approved by the Department.

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

The Permittee must require On-site Stormwater Management BMPs to infiltrate, disperse, and retain stormwater runoff onsite to the maximum extent feasible without causing flooding or erosion impacts. Roof Downspout Control BMPs, functionally equivalent to those described in Chapter 3 of Volume III of the *Stormwater Management Manual for Western Washington* (2005), and Dispersion and Soil Quality BMPs, functionally equivalent to those in Chapter 5 of Volume V, of the *Stormwater Management Manual for Western Washington* (2005) shall be required to reduce the hydrologic disruption of developed sites.

4.6 Minimum Requirement #6: Runoff Treatment

Project Thresholds

The following require construction of stormwater treatment facilities (see Table 4.1 below):

- Projects in which the total of effective, pollution-generating impervious surface (PGIS) 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) is three-quarters (3/4) of an acre or more in a threshold discharge area, and from which there is a surface discharge in a natural or man-made conveyance system from the site.

Table 4.1 Treatment Requirements by Threshold Discharge Area

	< ¾ acres of PGPS	≥ ¾ acres PGPS	< 5,000 sf PGIS	≥ 5,000 sf PGIS
Treatment Facilities		✔		✔
Onsite Stormwater BMPs	✔	✔	✔	✔

PGPS = pollution-generating pervious surfaces
PGIS = pollution-generating impervious surfaces
sf = square feet

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. <u>Enhanced Treatment:</u>

Enhanced treatment for reduction in dissolved metals is required for the following project sites that discharge to fish-bearing streams, lakes, or to waters or conveyance systems tributary to fish-bearing streams or lakes:

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).

However, such sites listed above that discharge directly (or, indirectly through a municipal storm sewer system) to Basic Treatment Receiving Waters (Appendix I-C of the *Stormwater Management Manual for Western Washington* (2005)), and areas of the above-listed project sites that are identified as subject to Basic Treatment requirements, are also not 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 generally applies to:

- Project sites that discharge to the ground, UNLESS:
  1) The soil suitability criteria for infiltration treatment are met; (see Chapter 3 of Volume III of the *Stormwater Management Manual for Western Washington* (2005) for soil suitability criteria) or
  2) The project 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 within ¼ mile of a fish-bearing stream, or a lake (use an Enhanced Treatment facility).
- Residential projects not otherwise needing phosphorus control as designated by USEPA, the Department of Ecology, or by the Permittee; and
- Project sites discharging directly to salt waters, river segments, and lakes listed in Appendix I-C of the *Stormwater Management Manual for Western Washington* (2005); and
- Project sites that drain to streams that are not fish-bearing, or to waters not tributary to fish-bearing streams;
- 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

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 *Stormwater Management Manual for Western Washington* (2005), for the 6-month, 24-hour storm. Alternatively, the 91st percentile, 24-hour runoff volume indicated by an approved continuous runoff model may be used.

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 at the water quality design flow rate (e.g., 80% TSS removal).

2. Downstream of Detention Facilities:

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

Alternative methods may be used if they identify volumes and flow rates that are at least equivalent.

That portion of any development project in which the above PGIS or PGPS thresholds are not exceeded in a threshold discharge area shall apply On-site Stormwater Management BMPs in accordance with Minimum Requirement #5.

Treatment Facility Selection, Design, and Maintenance

Stormwater treatment facilities shall be:

- Selected in accordance with the process identified in Chapter 4 of Volume I of the *Stormwater Management Manual for Western Washington* (2005),
- Designed in accordance with the design criteria in Volume V of the *Stormwater Management Manual for Western Washington* (2005), and
- Maintained in accordance with the maintenance schedule in Volume V of the *Stormwater Management Manual for Western Washington* (2005).

Additional Requirements

The discharge of untreated stormwater from pollution-generating impervious surfaces to ground water must not be authorized by the Permittee, except for the discharge achieved by infiltration or dispersion of runoff from residential sites through use of On-site Stormwater Management BMPs.

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 impervious 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.

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 *Stormwater Management Manual for Western Washington* (2005) 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 (see Section 7 of this Appendix).

Thresholds

The following require construction of flow control facilities and/or land use management BMPs that will achieve the standard flow control requirement for western Washington (see Table 4.2):

- 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 native 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 effective impervious surfaces and converted pervious surfaces cause a 0.1 cubic feet per second increase in the 100-year flow frequency from a threshold discharge area as estimated using the Western Washington Hydrology Model or other approved model.

That portion of any development project in which the above thresholds are not exceeded in a threshold discharge area shall apply Onsite Stormwater Management BMPs in accordance with Minimum Requirement #5.

Table 4.2 Flow Control Requirements by Threshold Discharge Area

	Flow Control Facilities	On-site Stormwater Management BMPs
< ¾ acres conversion to lawn/landscape, or < 2.5 acres to pasture		✔
≥ ¾ acres conversion to lawn/landscape, or ≥ 2.5 acres to pasture	✔	✔
< 10,000 square feet of effective impervious area		✔
≥ 10,000 square feet of effective impervious area	✔	✔
≥ 0.1 cubic feet per second increase in the 100-year flood frequency	✔	✔

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. 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 impervious surfaces and converted pervious surfaces.

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:

- 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 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 *Stormwater Management Manual for Western Washington* (2005) 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. These requirements must be met in addition to meeting Minimum Requirement #6, Runoff Treatment.

Thresholds

The thresholds identified in Minimum Requirement #6 – Runoff Treatment, and Minimum Requirement #7 – Flow Control shall also be applied for discharges to wetlands.

Standard Requirement

Discharges to wetlands shall maintain the hydrologic conditions, hydrophytic vegetation, and substrate characteristics necessary to support existing and designated uses. 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. A wetland can be considered for hydrologic modification and/or stormwater treatment in accordance with Guide Sheet 1B in Appendix I-D on the *Stormwater Management Manual for Western Washington* (2005).

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 Guidesheet 1B in Appendix I-D of the *Stormwater Management Manual for Western Washington* (2005).

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 *Stormwater Management Manual for Western Washington* (2005) for all 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 manual shall be retained onsite 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 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 the Department. The Permittee must seek prior approval by the Department 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 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 #6 Runoff Treatment, Minimum Requirement #7 Flow Control, and/or Minimum Requirement #8 Wetlands Protection. Basin planning may be used to support alternative treatment, flow control, and/or wetland protection requirements to those contained in Section 4 of this Appendix. 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 are 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 computer models and field work to verify and support the models. The USGS has developed software called "GenScn" (Generation and Analysis of Model Simulation Scenarios) that can facilitate basin planning. The program is a Windows-based application of HSPF that predicts water quality and quantity changes for multiple scenarios of land use and water management within a basin. 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 *Stormwater Management Manual for Western Washington* (2005).

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 based on established **TMDLs**

This Appendix contains the list of all TMDLs in Western Washington that include more specific requirements than those found in either the Phase I or Phase II permits. The potential permittees that these would apply to are listed with each TMDL.

A complete list of all applicable TMDLs in Western Washington will be included in the Fact Sheet to each permit. The complete list will reflect all the TMDLs for which compliance with the permit constitutes compliance with the TMDL.

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1. WRIA 1 - Nooksack River Watershed Bacteria Page 1
2. WRIA 7 - Snohomish River Tributaries Page 2
3. WRIA 8 - North Creek Page 5
4. WRIA 8 - Swamp Creek Page 9
5. WRIA 10 - South Prairie Creek Page 13

1. Name of TMDL: Nooksack River Watershed Bacteria

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 Drain

Area where TMDL Requirements Apply:
TMDL coverage includes areas draining to the Nooksack River or its tributaries between Cedarville and Marine Drive.

Parameter
Fecal Coliform

Approval Date
8-Aug. 2000

Potential MS4 Permittees
Phase II permit: Ferndale

Action Required

1. With each annual report submit an up to date Capitol Improvement Plan to address existing deficiencies in the stormwater treatment and conveyance system.
2. With the first annual report submit a Quality Assurance Project Plan (QAPP) for monitoring fecal coliform trends in representative stormwater discharges.
3. Execute QAPP after approval by Ecology.

2. Name of TMDL: Snohomish River Tributaries

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:
For each waterbody listed, TMDL coverage includes areas 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 and contributing to the waterbody: Allen Creek, YT94RF: Quilceda Creek, TH58TS: French Creek, XZ24XU: Woods Creek, FZ74HO: Pilchuck River, NF79WA: Marshland Watershed, XW79FQ.

TMDL coverage includes the areas indicated in the Lower Snohomish River Tributaries Fecal Coliform Bacteria TMDL Detailed Implementation Plan dated June 2003, Figure 3, page 7. This TMDL can be found at http://www.ecy.wa.gov/programs/wq/tmdl/watershed/tmdl_info-nwro.html

Parameter
Fecal Coliform

Approval Date
9 – Aug. 2001

Potential MS4 Permittees
Phase I permit: Snohomish County
Phase II permit: Granite Falls, Lake Stevens, Monroe, Snohomish, Marysville, Arlington, Everett

Action Required
The ordinance or other regulatory mechanism (developed or updated pursuant to S5) that effectively prohibits non-stormwater, illegal discharges, and/or dumping into the Permittees MS4 also prohibits non-stormwater discharges from commercial animal handling areas and commercial composting facilities. *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 *commercial composting facilities* (definition in accordance with Chapter 173-350 WAC).

No later than 30 months after the effective date of this permit, affected municipal permittees shall compile a list of the existing composting and animal waste handling facilities. This list shall be updated no later than 6 months prior to the expiration of the permit and submitted at the same time the permit renewal application is submitted.

Starting no later than 30 months after the effective date of this permit, begin to conduct inspections for all the listed sites, with adequate enforcement capability to ensure implementation of source control BMPs. All facilities must be inspected with 46 months of the effective date of this permit.

Monitoring and Implementation Requirements: Permittees shall choose one or both of the following monitoring strategies. Strategy A is the default implementation strategy unless the permittee chooses to implement Strategy B in all or part of the area subject to the TMDL:

Strategy A, Targeted Implementation Approach

- Within 4 months of permit issuance, prepare and submit to Ecology for review, a Quality Assurance Project Plan (QAPP) for the sampling of streams and/or discharges from stormwater conveyances within the jurisdictions boundaries in order to determine areas with highest bacteria concentrations (high priority areas). Provisions for additional monitoring in high priority areas shall be included in order to locate pollution sources where they are not obvious.
- The QAPP shall be prepared following Ecology's "Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies, Ecology Publication No. 01-03-003 (or most recent version). Ecology will review and provide comments within 30 days of when the plan is received. The sampling plan shall include an adequate number of sampling points and adequate sampling frequency to reasonably characterize the receiving water or waste stream. Monitoring shall begin no later than nine months after permit issuance.

  Permittees may rely on another entity to satisfy the monitoring component required by this TMDL. Permit holders that are relying on another entity to satisfy this monitoring obligation remain responsible for permit compliance if the other entity fails to perform the required monitoring.

- No later than 12 months prior to permit renewal application, a Bacterial Pollution Control Plan (BPCP) shall be developed. The BPCP shall, at a minimum, consider the use of the following approaches:

  1) pet waste ordinance,
  2) evaluation of water pollution control enforcement capabilities,
  3) evaluation of the critical areas ordinance in relation to TMDL goals,
  4) educational program directed at reducing bacterial pollution,

5) investigation and implementation of methods that prevent additional stormwater bacterial pollution through stormwater treatment, reducing stormwater volumes, and preventing additional sources of stormwater in association with new development,
6) implementation of activities in the Quilceda/Allen or French Creek Watershed Management Plans (as applicable),
7) ambient water quality and stormwater quality sampling to specifically identify bacterial pollution sources, and
8) livestock ordinance and compost ordinance (Phase I Permittees only).

- No later than 9 months prior to permit expiration, conduct public review of the BPCP.
- Submit the final BPCP to Ecology at the time of permit renewal application.

Strategy B: Early Action Approach.

- Prepare an Early Action BMP plan within 12 months of permit issuance. The Early Action Plan shall contain those BMPs that the permittee believes will be effective in reducing bacteria levels within the MS4 (or otherwise in local waters). The Early Action Plan must include the schedule for the implementation of the required baseline requirements for this TMDL as previously discussed in this section.
- The Early Action BMP Plan shall, at a minimum, consider the use of the following approaches:
  1) pet waste ordinance,
  2) evaluation of water pollution control enforcement capabilities,
  3) evaluation of the critical areas ordinance in relation to TMDL goals,
  4) educational program directed at reducing bacterial pollution,
  5) investigation and implementation of methods that prevent additional stormwater bacterial pollution through stormwater treatment, reducing stormwater volumes, and preventing additional sources of stormwater in association with new development,
  6) implementation of activities in Quilceda/Allen or French Creek Watershed Management Plans (as applicable) Watershed Management Plan,
  7) ambient water quality and stormwater quality sampling to specifically identify bacterial pollution sources, and
  8) livestock and compost ordinances (Phase I permittees only)
- Conduct and complete public review of the Early Action BMP plan within 15 months of permit issuance. Permittees may satisfy this requirement by incorporating the Early Action BMP Plan into their Stormwater Management Plan as a separate and distinct chapter or section.

- Begin implementation of Early Action BMPs as specified in the plan within 18 months of permit issuance. BMPs shall be place within 36 months of permit issuance unless otherwise approved by Ecology.
- Within 30 months of permit issuance, prepare and submit to Ecology for review, a Quality Assurance Project Plan (QAPP) for the sampling of streams and/or discharges from stormwater conveyances within the jurisdictions boundaries in order to assess whether or not affected water bodies and/or stormwater discharges, are meeting state water quality standards.
- The QAPP shall be prepared following Ecology's "Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies, Ecology Publication No. 01-03-003 (or most recent version). Ecology will review and provide comments within 30 days of when the plan is received. The sampling plan shall include an adequate number of sampling points and adequate sampling frequency to reasonably characterize the receiving water or waste stream. Monitoring shall begin no later than 36 months after permit issuance.

  Permittees may rely on another entity to satisfy the monitoring component required by this TMDL. Permit holders that are relying on another entity to satisfy this monitoring obligation remain responsible for permit compliance if the other entity fails to perform the required monitoring.

- No later than 9 months prior to permit renewal, permittees shall develop a Bacterial Pollution Control Plan (BPCP). The Plan shall consider all available monitoring data and the approaches noted for the Early Action BMP Plan above.
- No later than 9 months prior to permit renewal application, conduct public review of the BPCP. Permittees that have already incorporated the Early Action BMP Plan into their Stormwater Management Plan during year two of the permit satisfy the public review requirement by incorporating the Bacterial Pollution Control Plan into that plan as a separate and distinct chapter or section.
- Submit the BPCP to Ecology at the time of permit renewal application for review.

3. Name of TMDL: North Creek

Location of Original 303 (d) Listings
WA-08-1065

Area where TMDL Requirements Apply:
TMDL coverage includes areas draining to the portion of the WASWIS segment SM74QQ starting at the confluence with the Sammamish River and including all upstream tributaries within the jurisdiction of the Permittee and within the geographic area covered by this permit and contributing to the North Creek segment of WASWIS SM74QQ.

TMDL coverage includes the areas indicated in the North Creek Fecal Coliform Bacteria TMDL Detailed Implementation Plan dated September 2003, in Figure 1, page 3. This TMDL can be found at http://www.ecy.wa.gov/programs/wq/tmdl/watershed/tmdl_info-nwro.html .

Parameter
Fecal Coliform

Approval Date
2-Aug. 2002

Potential MS4 Permittees –
Phase I permit: Snohomish County
Phase II permit: Everett, Bothell, and Mill Creek

Action Required
The ordinance or other regulatory mechanism (developed or updated pursuant to S5) that effectively prohibits non-stormwater, illegal discharges, and/or dumping into the Permittees MS4 also prohibits non-stormwater discharges from commercial animal handling areas and commercial composting facilities. *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 *commercial composting facilities* (definition in accordance with Chapter 173-350 WAC).

No later than 30 months after the effective date of this permit, affected municipal permittees shall compile a list of the existing composting and animal waste handling facilities. This list shall be updated no later than 6 months prior to the expiration of the permit and submitted to Ecology with the permit renewal application.

Starting no later than 30 months after the effective date of this permit, conduct an inspection program for all the listed sites, with adequate enforcement capability to ensure implementation of source control BMPs. All facilities must be inspected with 46 months of the effective date of this permit.

Monitoring and Implementation Requirements: Permittees shall choose one or both of the following monitoring strategies. Strategy A is the default implementation strategy unless the permittee chooses to implement Strategy B in all or part of the area subject to the TMDL.

Permittees may rely on another entity to satisfy the monitoring component required by this TMDL. Permittees that are relying on another entity to satisfy this monitoring obligation remain responsible for permit compliance if the other entity fails to perform the required monitoring.

Strategy A, Targeted Implementation Approach

- Within 4 months of permit issuance, prepare and submit to Ecology for review, a Quality Assurance Project Plan (QAPP) for the sampling of streams and/or discharges from stormwater conveyances within the jurisdictions boundaries in order to determine areas with

highest bacteria concentrations (high priority areas). Provisions for additional monitoring in high priority areas shall be included in order to locate pollution sources where they are not obvious.

- The QAPP shall be prepared following Ecology's "Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies, Ecology Publication No. 01-03-003 (or most recent version). Ecology will review and provide comments within 30 days of when the plan is received. The sampling plan shall include an adequate number of sampling points and adequate sampling frequency to reasonably characterize the receiving water or waste stream. Monitoring shall begin no later than 9 months after permit issuance.

- No later than 12 months prior to permit renewal application, a Bacterial Pollution Control Plan shall be developed. The Bacterial Pollution Control Plan shall, at a minimum, consider the use of the following approaches:
  1) pet waste ordinance,
  2) evaluation of water pollution control enforcement capabilities,
  3) evaluation of the critical areas ordinance in relation to TMDL goals,
  4) educational program directed at reducing bacterial pollution,
  5) investigation and implementation of methods that prevent additional stormwater bacterial pollution through stormwater treatment, reducing stormwater volumes, and preventing additional sources of stormwater in association with new development,
  6) implementation of activities in the North Creek Watershed Management Plan,
  7) ambient water quality and stormwater quality sampling to specifically identify bacterial pollution sources, and
  8) livestock ordinance and compost ordinance (Phase I Permittees only.)
- No later than 9 months prior to permit renewal application, conduct public review of the Bacterial Pollution Control Plan.
- Submit the final Bacterial Pollution Control Plan to Ecology at the time of permit renewal application.

Strategy B: Early Action Approach.

- Prepare an Early Action BMP plan within 12 months of permit issuance. The Early Action Plan shall contain those BMPs that the permittee believes will be effective in reducing bacteria levels within the MS4 (or otherwise in local waters). The Early Action Plan must include the schedule for the implementation of the required baseline requirements for this TMDL as previously discussed in this section.
- The Early Action BMP Plan shall, at a minimum, consider the use of the following approaches:
  1) pet waste ordinance,

2) evaluation of water pollution control enforcement capabilities,
3) evaluation of the critical areas ordinance in relation to TMDL goals,
4) educational program directed at reducing bacterial pollution,
5) investigation and implementation of methods that prevent additional stormwater bacterial pollution through stormwater treatment, reducing stormwater volumes, and preventing additional sources of stormwater in association with new development,
6) implementation of activities in the North Creek Watershed Management Plans (as applicable) Watershed Management Plan,
7) ambient water quality and stormwater quality sampling to specifically identify bacterial pollution sources, and
8) livestock and compost ordinances (Phase I permittees only)

- Conduct and complete public review of the Early Action BMP plan within 15 months of permit issuance. Permittees may satisfy this requirement by incorporating the Early Action BMP Plan into their Stormwater Management Plan as a separate and distinct chapter or section.
- Begin implementation of Early Action BMPs as specified in the plan within 18 months of permit issuance. BMPs shall be place within 36 months of permit issuance unless otherwise approved by Ecology.
- Within 30 months of permit issuance, prepare and submit to Ecology for review, a Quality Assurance Project Plan (QAPP) for the sampling of streams and/or discharges from stormwater conveyances within the jurisdictions boundaries in order to assess whether or not affected water bodies and/or stormwater discharges, are meeting state water quality standards.
- The QAPP shall be prepared following Ecology's "Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies, Ecology Publication No. 01-03-003 (or most recent version). Ecology will review and provide comments within 30 days of when the plan is received. The sampling plan shall include an adequate number of sampling points and adequate sampling frequency to reasonably characterize the receiving water or waste stream. Monitoring shall begin no later than 36 months after permit issuance.

- No later than 9 months prior to permit renewal, a Bacterial Pollution Control Plan shall be developed. The Plan shall consider all available monitoring data and the approaches noted for the Early Action BMP Plan above.
- No later than 9 months prior to permit renewal application, conduct public review of the Bacterial Pollution Control Plan. Permittees that have already incorporated the Early Action BMP Plan into their Stormwater Management Plan during year two of the permit satisfy the public review requirement by incorporating the Bacterial Pollution Control Plan into that plan as a separate and distinct chapter or section.
- Submit the Bacterial Pollution Control Plan to Ecology at the time of permit renewal application for review.

4. Name of TMDL: Swamp Creek

Location of Original 303 (d) Listings
WA-08-1060

Area where TMDL Requirements Apply:
TMDL coverage includes areas draining to the portion of the WASWIS segment SM74QQ starting at the confluence with the Sammamish River and including all upstream tributaries within the jurisdiction of the Permittee and within the geographic area covered by this permit contributing to the Swamp Creek segment of WASWIS GJ57UL.

TMDL coverage includes the areas indicated in the *Swamp Creek Fecal Coliform Bacteria TMDL Water Quality Improvement Report and Implementation Plan* dated May 2006, in Figure 2, Appendix D. This TMDL can be found at http://www.ecy.wa.gov/programs/wq/tmdl/watershed/tmdl_info-nwro.html.

Parameter –
Fecal Coliform

Approval Date –
16-Aug. 2006

Potential MS4 Permittees –
Phase I permit: Snohomish County
Phase II permit: Everett, Bothell, Lynnwood, Brier, Mountlake Terrace, and Kenmore.
WSDOT permit: WSDOT. Note: For WSDOT in the Swamp Creek Watershed area defined above, compliance with the WSDOT permit shall constitute compliance with the Swamp Creek Fecal Coliform TMDL.

1) Pollution Source Control Activities

"The ordinance or other regulatory mechanism (developed or updated pursuant to S5) that effectively prohibits non-stormwater, illegal discharges, and/or dumping into the Permittees MS4 also prohibits non-stormwater discharges from commercial animal handling areas and commercial composting facilities. *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 *commercial composting facilities* (definition in accordance with Chapter 173-350 WAC). Permittees shall require source control BMPs equivalent to those in the 2005 Western Washington Stormwater Manual Volume IV, pages 2-10, through 2-12 for these facility types."

2) Public Involvement

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

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

3) TMDL Activity Documentation and Tracking

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

4) Public Outreach and Education

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

5) Water Quality Monitoring

All municipal stormwater permittees must perform or contract out, water quality monitoring in accordance with either Options 1 or 2 below. This monitoring shall be described in a plan prepared in accordance with Ecology's Guidelines for Preparing Quality Assurance Project Plans (QAPPs) for Environmental Studies (Ecology Publication No. 01-03-003 or most

current version). Phase II permittees shall submit their QAPP to Ecology for approval within 120 days of permit issuance.

To ensure consistency in its county-wide TMDL monitoring program, Phase I permittee Snohomish County has the option of following monitoring timelines and dates for submitting their QAPP, BPCP, and Early Action Plan (if applicable) following the timelines set forth in the North Creek and Snohomish Tributaries TMDL Detailed Implementation Plans.

Permitteees may rely on another entity to satisfy the required TMDL monitoring component. Permittees that are relying on another entity to satisfy this monitoring obligation remain responsible for permit compliance if the other entity fails to perform the required monitoring.

TMDL related monitoring shall begin within 180 days of permit issuance. The monitoring start date will be extended day for day if Ecology requires more than 30 days to review the QAPP. Permittees shall choose one of the two options discussed below

Option 1, Direct Measurement of Stormwater: Estimate the concentration and loading of bacteria to Swamp Creek from stormwater within the permit holder's jurisdiction by sampling representative outfalls within the MS4. Specific sampling locations and frequencies of stormwater outfall monitoring will be determined during Ecology's approval of a prepared QAPP.
Option 2, Indirect Measurement of Pollution Sources (Recommended): Estimate changes in bacterial levels in Swamp creek as a result of stormwater inputs through receiving water monitoring coupled with flow duration or comparable analyses.

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

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

Option 2 monitoring must be performed at a frequency that will produce at least 60 data points at each monitoring station over the five year permit cycle. Permittees must also perform continuous flow monitoring at each monitoring point, or a representative location

as approved by Ecology, to determine if a sampling event is affected, or dominated, by storm flows.

6) Coordination of Stormwater Management Activities

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

7) Illicit Discharge Detection and Elimination

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

> Phase I Permit—Snohomish County shall give strong consideration to prioritizing Outfall Reconnaissance Inventories (ORIs) in areas where bacterial TMDLs are in place. All ORIs conducted in area covered by this TMDL shall include bacteria source screening for sewage/septic sources. The County shall develop threshold values for responding to obvious bacterial pollution problems and initiating investigation/termination activities as defined in permit condition S5C8(b)(vii).
>
> Phase II Permit—Water bodies addressed by the TMDL shall be designated as high priority water bodies (see permit condition S.5.C.3.(c)(ii)) and shall receive field assessments and screening prior to other receiving water bodies unless approved in writing from Ecology. The presence of sewage/septic system sources shall be investigated as part of all screenings.

5. Name of TMDL: South Prairie Creek Bacteria and Temperature TMDL

Location of Original 303(d) Listings –
WA-10-1085, WA-10-1087

Area Where TMDL Requirements Apply:

<u>TMDL coverage includes South Prairie Creek, Spiketon Creek and Tributary One</u>

Parameter –
Fecal Coliform

Approval Date
August 5, 2003

Potential MS4 Permittees
Phase I Pierce County,
Phase II Town of Buckley

Action Required
The following implementation activities should be pursued in the time period from 2006 to 2009.

Pierce County

Increase review requirements and inspection frequency for permitted land conversions (clearing/grading/grubbing) and other land use actions where potential sediment loading to South Prairie Creek or tributaries could occur. (Planning and Land Services)

Town of Buckley

In cooperation with the Pierce Conservation District, investigate Spiketon Creek bacterial sources impacting the city's stormwater drainage system adjacent to Spiketon Creek while it remains out of compliance with clean water standards. If necessary, identify activities impacting surface discharges to the drainage system and perform sampling to verify bacterial sources, determine the relative contributions of bacteria from these activities, and the combined contribution from the stormwater drainage system at their outfalls to Spiketon Creek.

Assess current roadway maintenance practices adjacent to the city's stormwater drainage system along Spiketon Road. Determine the type, frequency, and schedule of maintenance activity and identify those which indirectly support bacterial contributions. Revise or modify maintenance activities to minimize bacterial contributions.

The following implementation activities should be pursued by Pierce County in the time period from 2010 to 2013.

Investigate Tributary 1 bacterial sources impacting the county's stormwater drainage system upstream of SR162. Identify activities impacting surface discharges to the drainage system and perform sampling to verify bacterial sources. Determine the contributions from the drainage system at their outfalls to Tributary 1 for both the growing season (May through October) and the non-growing season (November through April) periods.

Investigate bacterial sources impacting the county's stormwater drainage system upstream of SR165 along Spiketon Road, Mundy Loss Road, and Spiketon Ditch Road. Identify activities impacting surface discharges to the drainage system and perform sampling to verify bacterial sources. Determine the contributions from the drainage system at their outfalls to Spiketon Creek for both the growing season (May through October) and the non-growing season (November through April) periods.

Assess current roadway maintenance practices adjacent to the county's stormwater drainage system upstream of SR162. Determine the type, frequency, and schedule of maintenance activities and identify those which indirectly support bacterial contributions. Revise or modify roadway maintenance activities to minimize bacterial contributions.

Distribute educational materials on stormwater source controls/best management practices to landowners adjacent to the county's stormwater drainage system

Refer landowners to the Pierce Conservation District for technical assistance where agricultural or livestock impacts contribute direct flows or sheet flows to the county stormwater drainage system upstream of SR162 or along Spiketson Ditch road.

APPENDIX 3 – Annual Report Form for Cities, Towns and Counties Covered under the Western Washington Phase II Municipal Stormwater Permit

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Annual Report for Calendar Year_____.

Two printed copies and one electronic copy of this report are due to Ecology by March 31, of the following calender year. For all annual reports complete sections I through VI. For the third and all following annual reports also complete section VII. Do not leave any questions blank.

I. Permittee Information

Permittee Name	*Permit Coverage Number*	
Contact Name	*Phone Number*	
Mailing Address		
City	*State*	*Zip + 4*
Email Address		

II. Regulated Small MS4 Location

Jurisdiction
Entity Type ☐ *County* ☐ *City or Town* ☐ *Other* _____
Major receiving water(s)

III. Relying on another Governmental Entity

If you are relying on another governmental entity to satisfy one or more of the permit obligations, list the entity and the permit obligation(s) they are implementing on your behalf below. ***Attach a copy of your agreement with the other entity.***

IV. Certification

All annual reports must be signed and certified by the responsible official(s) of permittee or co-permittees

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.

Name_____Title_____Date_____

Name_____Title_____Date_____

Name_____Title_____Date_____

V. Submittal

Deliver two printed copies and one electronic copy (MS Word format or PDF, by email or on CD ROM) of this report by March 31 to:

Department of Ecology
Water Quality Program
Municipal Stormwater Permits
P.O. Box 47696
Olympia, WA 98504-7696

VI. Status Report Covering Calendar Year_____.

Please label any attachments with corresponding question numbers.

Note: Items that have future compliance dates must still be checked to indicate status.

1. YES ☐ NO ☐	**Attached** annual written update of Permittee's Stormwater Management Program (SWMP), including applicable requirements under S5.A.2 and S9. *Comments:*
2. YES ☐ NO ☐	**Attached** 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, and implications for the SWMP as per S9.E.3. *Comments:*
3. YES ☐ NO ☐	Implemented an ongoing program for gathering, tracking, maintaining, and using information to evaluate SWMP development, implementation and permit compliance and to set priorities. (S5.A.3) *Comments:*
4. YES ☐ NO ☐	Began tracking costs or estimated costs of the development and implementation of the SWMP. (*Required* no later than January 1, 2009, S5.A.3.a) *Comments:*
5. YES ☐ NO ☐	SWMP includes an education program aimed at residents, businesses, industries, elected officials, policy makers, planning staff and other employees of the Permittee. (*Required to begin by* February 15, 2009, S5.C.1) *Comments:*
6. YES ☐ NO ☐	Distributed appropriate information to target audiences identified in the area served by the MS4. (*Required to begin* by February 15, 2009, S5.C.1.a) *Comments:*

7. YES ☐ NO ☐	Tracked the types of public education and outreach activities implemented. (*Required to begin* by February 15, 2009, S5.C.1.b and S5.A.3.b) Number of activities implemented: _____ *Comments:*
8. YES ☐ NO ☐	Measured the understanding and adoption of the targeted behaviors among at least one targeted audience in at least one subject area. (*Required to begin* by February 15, 2009, S5.C.1.b) *Comments:*
9. YES ☐ NO ☐	Provided opportunities for the public to participate in the decision making processes involving the development, implementation and updates of the Permittee's SWMP. (*Required* by February 15, 2008, S5.C.2.a) *Comments:*
10. YES ☐ NO ☐	Developed and implemented a process for public involvement and consideration of public comments on the SWMP. (*Required* by February 15, 2008, S5.C.2.a) *Comments:*
11. YES ☐ NO ☐	Made the most current version of the SWMP available to the public. (S5.C.2.b) *Comments:*
12. YES ☐ NO ☐	Posted the SWMP on your website. (S5.C.2.b) Site address: _____ *Comments:*
13. YES ☐ NO ☐	Initiated or implemented an ongoing program to detect and remove illicit connections and illicit discharges into the Permittee's MS4. (*Required* August 19, 2011, S5.C.3) *Comments:*
14a. YES ☐ NO ☐	Developed and currently maintain a map of your MS4. (*Required* by February 16, 2011, S5.C.3.a) *Comments:*

14b. YES ☐ NO ☐	Initiated a program to develop and maintain a map of all connections to the MS4 authorized or allowed after the permit effective date. (*Required* by February 16, 2011, S5.C.3.a) *Comments:*
15. YES ☐ NO ☐	Map shows the location of all known municipal separate storm sewer outfalls, receiving waters and structural stormwater BMPs owned, operated, or maintained by the Permittee. (*Required* by February 16, 2011, S5.C.3.a.i) *Comments:*
16. YES ☐ NO ☐	Map shows all storm sewer outfalls with a 24 inch nominal diameter or larger, or an equivalent cross-sectional area for non-pipe systems and includes tributary conveyances, associated drainage areas and land use. (*Required* by February 16, 2011, S5.C.3.a.i) *Comments:*
17. YES ☐ NO ☐	Map shows geographic areas served by the Permittee's MS4 that do not discharge stormwater to surface waters. (*Required* by February 16, 2011, S5.C.3.a.iii) *Comments:*
18. YES ☐ NO ☐	Map has been made available upon request. (S5.C.3.a.iv) *Comments:*
19. YES ☐ NO ☐	Developed and implemented regulatory actions necessary to effectively prohibit non-stormwater, illicit discharges into the Permittee's MS4. (*Required* by August 15, 2009, S5.C.3.b) *Comments:*
20. YES ☐ NO ☐	Developed and implemented an ongoing program to detect and address non-stormwater illicit discharges, including spills, and illicit connections into the Permittee's MS4. (*Required* by August 19, 2011, S5.C.3.c) *Comments*
21. YES ☐ NO ☐	Developed procedures for locating priority areas likely to have illicit discharges, including at a minimum: evaluating land uses and associated business/industrial activities present; areas where complaints have been

registered in the past; and areas with storage of large quantities of materials that could result in illicit discharges, including spills. (*Required* by August 19, 2011, S5.C.3.c.i)

Comments:

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22. YES ☐ NO ☐ Implemented field assessment activities, including visual inspection of priority outfalls identified during dry weather, and for the purposes of verifying outfall locations, identified previously unknown outfalls, and detected illicit discharges. (*Required* by August 19, 2011, S5.C.3.c.ii)

Comments:

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23. YES ☐ NO ☐ Prioritized receiving waters for visual inspection. (*Required* by February 15, 2010, S5.C.3.c.ii)

Comments:

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24. YES ☐ NO ☐ Conducted field assessments for three high priority water bodies. (*Required* by February 16, 2011, S5.C.3.c.ii)

Comments:

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25. YES ☐ NO ☐ Conducted field assessments on at least one high priority water body. (*Required* annually **after** February 16, 2011, S5.C.3.c.ii)

Comments:

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26. YES ☐ NO ☐ Developed and implemented procedures for characterizing the nature of, and potential public or environmental threat posed by, any illicit discharges found by or reported to the Permittee. (*Required* by August 19, 2011, S5.C.3.c.iii)

Comments:

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27. YES ☐ NO ☐ Developed and implemented 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. (*Required* by August 19, 2011, S5.C.3.c.iv)

Comments:

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28. YES ☐ NO ☐ Developed and implemented procedures for removing the source of the illicit discharge, including notification of appropriate authorities;

notification of the property owner; technical assistance for eliminating the discharge; follow-up inspections; and escalating enforcement and legal actions if the discharge is not eliminated. (*Required* by August 19, 2011, S5.C.3.c.v.)

Comments:

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29. YES ☐ NO ☐ Inform public employees, businesses, and the general public of hazards associated with illegal dischargesand improper disposal of waste. (*Required* by August 19, 2011, S5.C.3.d)

Comments:

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30. YES ☐ NO ☐ Distributed appropriate information to target audiences identified pursuant to S5.C.1. (*Required* by August 19, 2011, S5.C.3.d.i)

Comments:

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31. YES ☐ NO ☐ Publicized a hotline or other local telephone number for public reporting of illicit discharges, including spills. (Required by February 15, 2009, S5.C.3.d.ii)
Number of calls received_____
Number of follow-up actions taken _____

Comments:

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32. YES ☐ NO ☐ Maintained a hotline or other local telephone number for public reporting of illicit discharges, including spills. List the phone number under *Comments.* (*Required by* February 15, 2009 (S5.C.3.d.ii)

Comments:

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33. YES ☐ NO ☐ Tracked the number of illicit discharges, including spills, identified. (*Required* by August 19, 2011, S5.C.3.e)
Number of illicit discharges, including spills, identified: _____.

Comments:

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34. YES ☐ NO ☐ Tracked the number inspections made for illicit connections. (*Required* by August 19, 2011, S5.C.3.e)
Number of inspections:_____.

Comments:

35. YES ☐ NO ☐ Received feedback from IDDE public education efforts. (*Required* by August 19, 2011, S5.C.3.e)

Comments:

36. YES ☐ NO ☐ **Attached** report on IDDE public education efforts. (*Required* by August 19, 2011, S5.C.3.e)

Comments:

37. YES ☐ NO ☐ Municipal field staff responsible for identification, investigation, termination, cleanup, and reporting of illicit discharges and illicit connections are trained to conduct these activities. (*Required* by August 15, 2009, S5.C.3.f.i)
Number of trainings provided: _____
Number of staff trained: _____

Comments:

38. YES ☐ NO ☐ Provided follow-up training as needed to address changes in procedures, techniques or requirements. (*Required* by August 15, 2009, S5.C.3.f.i)
Number of trainings provided: _____
Number of staff trained: _____

Comments:

39. YES ☐ NO ☐ Developed and implemented an ongoing training program on the identification of an illicit discharge/connection, and on the proper procedures for reporting and responding to the illicit discharge/connection for all municipal field staff, which, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system. (*Required* by February 15, 2010, S5.C.3.f.ii.)
Number of trainings provided: _____
Number of staff trained: _____

Comments:

40. YES ☐ NO ☐ Developed, implemented and enforced a program to reduce pollutants in stormwater runoff to a regulated small MS4 from new development, redevelopment and construction site activities? (*Required by* February 16, 2010, S5.C.4)

Comments:

41. YES ☐	NO ☐	Applied stormwater runoff program to all sites that disturb a land area 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale (*Required by* February 16, 2010, S5.C.4) *Comments:*
42. YES ☐	NO ☐	Applied stormwater runoff program to private and public development, including roads (*Required by* February 16, 2010, S5.C.4) *Comments:*
43. YES ☐	NO ☐	Applied the "Technical Thresholds" in Appendix 1 to all sites 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale. (*Required* by February 16, 2010, S5.C.4) *Comments:*
44. YES ☐	NO ☐	Adopted and implemented regulatory mechanism (such as an ordinance) necessary to address run-off from new development, redevelopment and construction site activities. (*Required* by February 16, 2010, S5.C.4.a) *Comments:*
45. YES ☐	NO ☐	Retained existing local requirements to apply stormwater controls at smaller sites, or at lower thresholds, than required pursuant to S5.C.4. (*Required from the effective date of the permit.*) *Comments:*
46. YES ☐	NO ☐	The ordinance or other enforceable mechanism includes the minimum requirements, technical thresholds, and definitions in Appendix 1 (or an equivalent approved by Ecology under the NPDES Phase I Municipal Stormwater Permit) for new development, redevelopment, and construction sites. (*Required* by February 16, 2010, S5.C.4.a.i) *Comments:*
47. YES ☐	NO ☐	The ordinance or other enforceable mechanism includes exceptions and variance criteria equivalent to those in Appendix 1. (*Required* by February 16, 2010, S5.C.4.a.i., and Section 6 of Appendix 1) *Comments:*

48. YES ☐ NO ☐ Were exceptions or variances to the minimum requirements in Appendix 1 granted? If so, how many were granted? _____. (*Required* by February 16, 2010, S5.C.4.a.i., and Section 6 of Appendix 1)

Comments:

49. YES ☐ NO ☐ The ordinance or other enforceable mechanism includes a site planning process and BMP selection and design criteria that, when used to implement the minimum requirements in Appendix 1 (or equivalent approved by Ecology under the Phase I Permit) will protect water quality, reduce the discharge of pollutants to the maximum extent practicable and satisfy the state requirement under Chapter 90.48 RCW to apply all known, available and reasonable methods of prevention, control and treatment (AKART) prior to discharge.
Cite documentation to meet this requirement:_____
(*Required* by February 16, 2010, S5.C.4.a.ii)

Comments:

50. YES ☐ NO ☐ The ordinance or other enforceable mechanism provides the legal authority, through the approval process for new development, to inspect private stormwater facilities that discharge to the Permittee's MS4. (*Required* by February 16, 2010, S5.C.4.a.iii)

Comments:

51. YES ☐ NO ☐ The ordinance or other enforceable mechanism allows non-structural preventive actions and source reduction approaches such as Low Impact Development (LID) Techniques to minimize the creation of impervious surfaces and minimize the disturbance of native soils and vegetation. (*Required* by February 16, 2010, S5.C.4.a.iv)

Comments:

52. YES ☐ NO ☐ If the ordinance or regulatory mechanism allows construction sites to apply the "Erosivity Waiver" in Appendix 1, Minimum Requirement #2, does it include appropriate, escalating enforcement sanctions for construction sites that provide notice to the Permittee of their intention to apply the waiver but do not meet the requirements (including timeframe restrictions, limits on activities that result in non-stormwater discharges, and implementation of appropriate BMPs to prevent violations of water quality standards) to qualify for the waiver? (If waiver is allowed, the qualification is *required* by February 16, 2010, S5.C.4.a.v)

Comments:

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53. YES ☐ NO ☐ Developed and implemented a permitting process to address run-off from new development, redevelopment and construction site activities with plan review, inspection and enforcement capability. (*Required* by February 16, 2010, S5.C.4.b)

Comments:

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54. YES ☐ NO ☐ Applied permitting process to all sites that disturb a land area 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale. (*Required* by February 16, 2010, S5.C.4.b)

Comments:

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55. YES ☐ NO ☐ Reviewed *Stormwater Site Plans* for new development and redevelopment projects. (*Required* by February 16, 2010, S5.C.4.b.i)
Number of site plans reviewed during the reporting period: _____.

Comments:

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56. YES ☐ NO ☐ Inspected, prior to clearing and construction, 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.* (*Required* by February 16, 2010, S5.C.4.b.ii)
Number of qualifying sites inspected prior to clearing and construction during the reporting period: _____.

Comments:

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57. YES ☐ NO ☐ Inspected construction-phase stormwater controls at all known permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls. (*Required* by February 16, 2010, S5.C.4.b.iii)
Number of qualifying sites inspected during the construction phase for the reporting period: _____.

Comments:

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58. YES ☐ NO ☐ Enforced as necessary based on the inspection at new development and redevelopment projects. (*Required* by February 16, 2010, S5.C.4.b.iii)
Number of enforcement actions taken during the reporting period: _____.

Comments:

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59. YES ☐ NO ☐ Inspected qualifying permitted development sites upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater controls such as stormwater facilities and structural BMPs. (*Required* by February 16, 2010, S5.C.4.b.iv and v)
Number of sites known during the reporting period: _____.
Number of sites inspected during the reporting period: _____.

Comments:

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60. YES ☐ NO ☐ Verified that a maintenance plan is completed and responsibility for maintenance is assigned for qualifying projects. (*Required* by February 16, 2010, S5.C.4.b.iv)

Comments:

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61. YES ☐ NO ☐ Enforced regulations as necessary based on the inspection. (*Required* by February 16, 2010, S5.C.4.b.iv)
Number of enforcement actions taken during the reporting period: _____.

Comments:

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62. YES ☐ NO ☐ Developed and implemented an enforcement strategy to respond to issues of non-compliance with the regulations for qualifying projects? (*Required* by February 16, 2010, S5.C.4.b.vi)

Comments:

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63. YES ☐ NO ☐ Did the Permittee choose to allow construction sites to apply the "Erosivity Waiver" in Appendix 1, Minimum Requirement #2? (S5.C.4.b.vii)
If yes, how many waivers were allowed ? _____.

Comments:

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64. YES ☐ NO ☐ Developed and implemented a long-term operation and maintenance (O&M) program for post-construction stormwater facilities and BMPs. (*Required* by February 16, 2010, S5.C.4.c)

Comments:

65. YES ☐	NO ☐	Adopted an ordinance or other regulatory mechanism that clearly identifies the party responsible for maintenance, requires inspection of facilities and establishes enforcement procedures. (*Required* by February 16, 2010, S5.C.4.c.i) *Comments:*
66. YES ☐	NO ☐	Inspected post-construction stormwater controls, including structural BMPs, at new development and redevelopment projects. (*Required* by February 16, 2010, S5.C.4.c) Number of sites inspected during the reporting period: ____. Number of structural BMPs inspected during the reporting period: ____. Number of enforcement actions taken during the reporting period: ____. *Comments:*
67. YES ☐	NO ☐	Established maintenance standards that are as protective, or more protective, of facility function as those specified in Chapter 4 of Volume V of the 2005 *Stormwater Management Manual for Western Washington.* (*Required* by February 16, 2010, S5.C.4.c.ii) *Comments:*
68. YES ☐	NO ☐	Performed timely maintenance as per S5.C.4.c.ii. **Attach** documentation of any maintenance delays. (*Required* by February 16, 2010, S5.C.4.c.ii) *Comments:*
69. YES ☐	NO ☐	Established a program designed to annually inspect all stormwater treatment and flow control facilities (other than catch basins) permitted by the Permittee according to S5.C.4.b. unless there are maintenance records to justify a different frequency. (*Required* by February 16, 2010, S5.C.4.c.iii) *Comments:*
70. YES ☐	NO ☐	If using reduced inspection frequency, **Attached** documentation as per S5.C.4.c.iii. (*Required* by February 16, 2010, S5.C.4.c.iii)

Comments:

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71. YES ☐ NO ☐ Inspected new stormwater treatment and flow control facilities owned or operated, including catch basins, for new residential developments that are a part of a larger common plan of development or sale, every 6 months during the period of heaviest house construction (i.e., 1 to 2 years following subdivision approval) to identify maintenance needs and enforce compliance with maintenance standards as needed. (*Required* by February 16, 2010, S5.C.4.c.iv)
Number of facilities inspected during the reporting period: ____.

Comments:

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72. YES ☐ NO ☐ Implemented a procedure for keeping records of inspections and enforcement actions by staff, including inspection reports, warning letters, notices of violations, other enforcement records, maintenance inspections and maintenance activities. (*Required* by February 16, 2010, S5.C.4.d)

Comments:

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73. YES ☐ NO ☐ 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 from the effective date of the permit,* S5.C.4.e)

Comments:

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74. YES ☐ NO ☐ 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 were trained to conduct these activities. (*Required* by February 16, 2010, S5.C.4.f)
Number of trainings provided: _____
Number of staff trained: _____

Comments:

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75. YES ☐ NO ☐ Developed and implemented 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. (*Required* by February 16, 2010, S5.C.5)

Comments:

76. YES ☐ NO ☐ Adopted maintenance standards as protective, or more protective, of facility function as those specified in Chapter 4 of Volume V of the 2005 *Stormwater Management Manual for Western Washington*. (*Required* by February 16, 2010, S5.C.5.a)

Comments:

77. YES ☐ NO ☐ Performed timely maintenance as per S5.C.5.a.ii.
Attach documentation of any maintenance delays. (*Required* by February 15, 2010, S5.C.5.a.ii)

Comments:

78. YES ☐ NO ☐ Established a program designed to annually inspect and maintain all municipally owned or operated permanent stormwater treatment and flow control facilities (other than catch basins). (*Required* by February 16, 2010, S5.C.4.b)
Number of known facilities: _____
Number of facilities inspected during the reporting period: _____

Comments:

79. YES ☐ NO ☐ If using reduced inspection frequency,
Attached documentation as per S5.C.5.b. (*Required* by February 16, 2010, S5.C.5.b)

Comments:

80. YES ☐ NO ☐ Conducted spot checks of potentially damaged permanent treatment and flow control stormwater facilities after major storms.
Number of known facilities: _____
Number of facilities inspected during the reporting period: _____.
(*Required* by February 16, 2010, S5.C.5.c)

Comments:

81. YES ☐ NO ☐ Inspected municipally owned or operated catch basins at least once before the end of the Permit term? (*Required* by February 16, 2010, S5.C.5.d)
Number of known catch basins:_____.
Number of inspections:_____.
Number of catch basins cleaned:_____.

Comments:

82. YES ☐	NO ☐	Established and implemented practices to reduce stormwater impacts associated with runoff from streets, parking lots, roads or highways owned or maintained by the Permittee, and road maintenance activities conducted by the Permittee? (*Required* by February 16, 2010, S5.C.5.f) *Comments:*
83. YES ☐	NO ☐	Established and implemented policies and procedures to reduce pollutants in discharges from all lands owned or maintained by the Permittee and subject to this Permit, including but not limited to: parks, open space, road right-of-way, maintenance yards, and stormwater treatment and flow control facilities? (*Required by* February 16, 2010, S5.C.5.g) *Comments:*
84. YES ☐	NO ☐	Implemented 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? (*Required by* February 16, 2010, S5.C.5.h.) Number of trainings provided: _____ Number of staff trained: _____ *Comments:*
85. YES ☐	NO ☐	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 that are not required to have coverage under the *General NPDES Permit for Stormwater Discharges Associated with Industrial Activities* or another NPDES stormwater permit ? (*Required by* February 16, 2010, S5.C.5.i) *Comments:*
86. YES ☐	NO ☐	Is there an approved Total Maximum Daily Load (TMDL) applicable to stormwater discharges from a MS4s owned or operated by the Permittee? (S7)
87. YES ☐	NO ☐ NA ☐	Complied with the specific requirements identified in Appendix 2. (S7.A) *Comments:*
88. YES ☐	NO ☐ NA ☐	**Attached** status report of TMDL implementation. (S7.A) *Comments:*

89. YES ☐ NO ☐ NA ☐ Where monitoring was required in Appendix 2, did you conduct the monitoring according to a Quality Assurance Project Plan? (S7.A)

Comments:

90. YES ☐ NO ☐ NA ☐ Took appropriate action to correct or minimize , welfare, discharges from or into the Permittee's MS4 which may constitute a threat to human health, welfare, or the environment? (G3)

Comments:

90a. YES ☐ NO ☐ NA ☐ **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:

91. 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:

92. YES ☐ NO ☐ NA ☐ Notified Ecology immediately in cases where the Permittee becomes aware of a discharge from or into the Permittees MS4 which could constitute a threat to human health, welfare, or the environment? (G3)

Comments:

93. YES ☐ NO ☐ **Attached a** summary of identified barriers to the use of low impact development (LID) and measures to address the barriers. (*Required by* March 31, 2011, S9.E.4.a.)

Comments:

94. YES ☐ NO ☐ **Attached** a report completed either individually or in cooperation with other Permittees describing current, potential or planned activities to implement and promote LID pursuant to requirements in S9.E.4.b.i through S9.E.4.b.iv. (*Required by* March 31, 2011, S9.E.4.b.)

Comments:

VII. Information Collection, BMP Evaluation, and Monitoring

Complete sections A for each annual report. Complete sections B and C for the Third and all following annual reports. Complete section D below for the fourth annual report only.

A. Information Collection

List below either the results of information collected and analyzed during the reporting period, including monitoring data (if any) and who to contact for additional information OR summarize the results of information collected and indicate how more complete information can be obtained. (S8.B.1., and S9)

B. SWMP Evaluation

You are required to assess the appropriateness of the BMPs you have selected to implement your SWMP. This evaluation is necessary to evaluate whether the MEP standard set by the permit is protective of water quality in your receiving water bodies. This assessment may be entirely qualitative. Select "NA" if you are not yet fully implementing the entire program of BMPs for a component of the SWMP. (S8.B.2. and S9)

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1. YES ☐ NO ☐ NA ☐ Are the BMPs selected and implemented for Public Outreach appropriate to minimize pollutants in the MS4 to the MEP?

Comments:

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2. YES ☐ NO ☐ NA ☐ Are the BMPs selected and implemented for Public Involvement appropriate to minimize pollutants in the MS4 to the MEP?

Comments:

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3. YES ☐ NO ☐ NA ☐ Are the BMPs selected and implemented for Illicit Discharge Detection and Elimination appropriate to minimize pollutants in the MS4 to the MEP?

Comments:

4. YES ☐ NO ☐ NA ☐ Are the BMPs selected and implemented for Construction Stormwater Pollution Prevention appropriate to minimize pollutants in the MS4 to the MEP?

Comments:

5. YES ☐ NO ☐ NA ☐ Are the BMPs selected and implemented for Post-Construction Runoff Management appropriate to minimize pollutants in the MS4 to the MEP?

Comments:

6. YES ☐ NO ☐ NA ☐ Are the BMPs selected and implemented for Good Housekeeping for Municipal Operations appropriate to minimize pollutants in the MS4 to the MEP?

Comments:

C. Changes in BMPs or objectives (S8.B)

If any of the BMPs or objectives is being changed, list the old BMP and objective, the new BMP and objective, and a justification for the change below. (S8.B.2., and S9)

1. Old BMP:	Old Objective:
2. New BMP:	New Objective:
Justification for change:	
1. Old BMP:	Old Objective:
2. New BMP:	New Objective:
Justification for change:	

D. Preparation for future, long-term monitoring

Complete section D below for the fourth annual report only.

1. YES ☐	NO ☐ NA ☐	Identified outfalls or conveyances for long-term stormwater monitoring? **Attach** report with the status of site identification, site maps and descriptions and documentation of how sites were selected. Permittees in a single Urbanized Area or WRIA may collaborate on a single submission. (S8.C.1.a and S8.C.2.a.i) *Comments:*
2. YES ☐	NO ☐ NA ☐	Identified at least two questions for SWMP effectiveness monitoring and developed monitoring plans? (S8.C.1.b and S8.C.2.a.ii) **Attach** a summary of the proposed questions and the status of the monitoring plans, and monitoring plans for SWMP effectiveness monitoring . *Comments:*

APPENDIX 4 – Annual Report Form for Secondary Permittees

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Annual Report for Calendar Year _____

Two printed copies and one electronic copy of this report are due to Ecology by March 31 following the reporting period (S9 *Reporting Requirements*). The reporting period is the previous calendar year. Complete sections I through VI. Do not leave any questions blank.

I. Permittee Information

Permittee Name	*Permit Coverage Number*	
Contact Name	*Phone Number*	
Mailing Address		
City	*State*	*Zip + 4*
Email Address:		

II. Regulated Small MS4 Location

Jurisdiction
Entity Type: ☐ Port ☐ Diking/drainage district ☐ Flood control district ☐ College/University ☐ Public school district ☐ Park district ☐ State agency_____ ☐ Other _____
Major receiving water(s):

III. Relying on another Governmental Entity

If you are relying on another governmental entity to satisfy one or more of the permit obligations, list the entity and the permit obligation they are implementing on your behalf below. ***Attach a copy of your agreement with the other entity (unless previously submitted).***

IV. Certification

Must be signed by the responsible official(s) of permittee

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.

Name_____Title_____Date_____

Name_____Title_____Date_____

Name_____Title_____Date_____

V. Submittal

Deliver two printed and signed copies and one electronic copy (e-mail the report in Excel format from Ecology website or send CD ROM in MS Word format or PDF) of this report by March 31 to:

Department of Ecology
Water Quality Program
Municipal Stormwater Permits
P.O. Box 47696
Olympia, WA 98504-7696

VI. Status Report Covering Calendar Year _____

Answer all the questions. If a requirement is not yet due based on your permit coverage date, answer "No" and note in *Comments* that the requirement is not yet due. The deadlines for specific requirements may vary from those shown as established by Ecology for individual permittees. For questions that allow for a NA (not applicable) answer, if the requirement does not apply to you, answer "NA." Please label any attachments with corresponding question numbers.

S6.D Stormwater Management Program

1. YES ☐ NO ☐ **Attached** a copy of the Permittee's Stormwater Management Program (SWMP) as per S6.A.5 (*Required* annually).

Comments:

2. YES ☐ NO ☐ NA ☐ **Attached** a notification of any jurisdictional boundary changes resulting in an increase or decrease in the Permittee's geographic area of coverage during the reporting period, and implications for the SWMP. (*Required annually,* S9.F.2)

Comments:

S6.D.1 Public Education and Outreach

3. YES ☐ NO ☐ Labeled at least 50% of all storm drain inlets owned or operated by the Permittee that are located in maintenance yards, in parking lots, along sidewalks, and at pedestrian access points? (*Required by* 3 years from permit coverage date, S6.D.1.a)
Number of inlets labeled: _____

Comments:

4. YES ☐ NO ☐ NA ☐ (Public ports, colleges, and universities) 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 by* 3 years from permit coverage date, S6.D.1.b)

Comments:

5. YES ☐ NO ☐ Labeled all storm drain inlets owned or operated by the Permittee that are located in maintenance yards, in parking lots, along sidewalks, and at pedestrian access points. (*Required by* August 15, 2011 or date established by Ecology, S6.D.1.a.ii)
Number of inlets labeled: _____

Comments:

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6. YES ☐ NO ☐ Re-labeled all storm drain inlets with labels when no longer clearly visible and/or easily readable within 90 days. (*Required after* deadline for S6.D.1.a.iii)
Number of inlets labeled: _____

Comments:

S6.D2 Public Involvement and Participation

7. YES ☐ NO ☐ Published a public notice or posted SWMP on website and solicited public review of the SWMP. (*Required by* August 15, 2011 or date established by Ecology, S6.D.2.a)

Comments:

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8. YES ☐ NO ☐ Made the latest version of the SWMP available to the public. If posted on website, list address. (*Required by* August 15, 2011 or date established by Ecology, S5.D.2.b)

Comments:

S6.D.3 Illicit Discharge Detection and Elimination

9. YES ☐ NO ☐ Complied with all relevant ordinances, rules, and regulations of the local jurisdiction(s) that govern non-stormwater discharges. (*Required* after permit coverage date, S6.D.3.a)

Comments:

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10. YES ☐ NO ☐ Developed and adopted policies to prohibit illicit discharges and identified enforcement mechanisms. (*Required by* 1 year from permit coverage date, S6.D.3.b)

Comments:

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11. YES ☐ NO ☐ Implemented policies to prohibit illicit discharges, including an enforcement plan. (*Required* 1 year from permit coverage date, S6.D.3.b)

Comments:

12. YES ☐ NO ☐	Developed a map of the storm sewer system showing all known storm drain outfalls, receiving waters, and areas contributing runoff to each outfall. Made map available on request to Ecology or others, if requested. (*Required by* August 15, 2011 or date established by Ecology, S6.D.3.c) *Comments:*
13. YES ☐ NO ☐	Conducted field inspections and visually inspected for illicit discharges at approximately one third of all known outfalls. (*Required to begin by* 2 years from permit coverage date, S6.D.3.d) Number of outfalls inspected: ____ *Comments:*
14. YES ☐ NO ☐	Developed and implemented procedures to identify and remove illicit discharges. (*Required by* 2 years from permit coverage date, S6.D.3.d) *Comments:*
15. YES ☐ NO ☐	**Attached** summary of illicit discharges discovered and actions taken to eliminate the discharges. (*Required* annually, S9) *Comments:*
16. YES ☐ NO ☐	Developed and implementing a spill response plan that includes coordination with a qualified spill responder. (*Required by* August 15, 2011 or date established by Ecology, S6.D.3.e) *Comments:*
17. YES ☐ NO ☐	Provided staff training or coordinated with existing training to educate relevant staff on proper BMPs for preventing illicit discharges, including spills. (*Required by* 2 years from permit coverage date, S6.D.3.f) *Comments:*

S6.D.4 Construction Site Stormwater Control

18. 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* permit coverage date, S6.D.4.a) *Comments:*
19. YES ☐ NO ☐ NA ☐	Obtained NPDES permit coverage for all applicable construction projects under the control of the Permittee. (*Required* after permit coverage date, S6.D.4.b) *Comments:*
20. YES ☐ NO ☐ NA ☐	Coordinated with local jurisdictions on construction projects owned or operated by other entities that discharge into Permittee's MS4. (*Required* after permit coverage date, S6.D.4.c) *Comments:*
21. YES ☐ NO ☐ NA ☐	Provided training for relevant staff in erosion and sediment control BMPs and requirements, or hired trained contractors to perform the work for all construction projects owned and operated by the Permittee. (*Required* S6.D.4.d) *Comments:*
22. YES ☐ NO ☐ NA ☐	Provided access, as requested, for inspection of construction sites under the control of the Permittee during the active grading and/or construction period. (*Required* after permit coverage date, S6.D.4.e) *Comments*:

S6D.5 Post-Construction Stormwater Management for New Development and Redevelopment

23. 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 permit coverage date, S6.D.5.a) *Comments*:

24. YES ☐ NO ☐ NA ☐ Coordinated with local jurisdiction regarding projects owned and operated by other entities which discharge into the Permittee's MS4. (*Required* after permit coverage date, S6.D.5.b)

Comments:

S6.D.6 Pollution Prevention and Good Housekeeping for Municipal Operations

25. YES ☐ NO ☐ Developed and implemented an Operation and Maintenance program. (*Required by* 3 years from permit coverage date, S6.D.6.a)

Comments:

26. YES ☐ NO ☐ Conducted spot checks of stormwater facilities after major storms. (*Required to begin by* 3 years from permit coverage date, S6.D.6.a.i)

Comments:

27. YES ☐ NO ☐ NA ☐ Have NPDES permit coverage for *Stormwater Discharges Associated with Industrial Activities* for all applicable industrial facilities operated by the Permittee. (S6.D.6.b)

Comments:

28. YES ☐ NO ☐ Provided adequate training for staff to carry out the Operations and Maintenance plan to minimize impacts to water quality. (*Required to begin by* 3 years from permit coverage date, S6.D.6.d)

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:

30. YES ☐ NO ☐ NA ☐ Complied with the specific requirements identified in Appendix 2. (S7.A)

Comments:

31. YES ☐ NO ☐ NA ☐ Attached status report of TMDL implementation. (S7.A)

Comments:

32. YES ☐ NO ☐ NA ☐ Where monitoring was required in Appendix 2, conducted the monitoring according to a Quality Assurance Project Plan. (S7.A)

Comments:

General Conditions

33. 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:

34. YES ☐ NO ☐ NA ☐ Notified Ecology immediately in cases where the Permittee becomes aware of a discharge into or from the Permittee's MS4 which may constitute a threat to human health, welfare, or the environment. (G3)

Comments:

35. 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

36. 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.A, S8.B & S9)

List below either the results of information collected and analyzed during the reporting period, including monitoring data (if any) and how to contact for additional information OR summarize the results of information collected and indicate how more complete information can be obtained.

B. Evaluation of your SWMP (S8.B & S9) Complete for the third and following annual reports.

You are required to assess the appropriateness of the BMPs you have selected to implement your SWMP. This evaluation is necessary to evaluate whether the MEP standard set by the permit is protective of water quality in your receiving water bodies. This assessment may be entirely qualitative. Select "NA" if you are not yet fully implementing the entire program of BMPs for a component of the SWMP.	
1. YES ☐ NO ☐ NA ☐	Are the BMPs selected and implemented for Public Outreach appropriate to minimize pollutants in the MS4 to the MEP? *Comments:*
2. YES ☐ NO ☐ NA ☐	Are the BMPs selected and implemented for Public Involvement appropriate to minimize pollutants in the MS4 to the MEP? *Comments:*
3. YES ☐ NO ☐ NA ☐	Are the BMPs selected and implemented for Illicit Discharge Detection and Elimination appropriate to minimize pollutants in the MS4 to the MEP? *Comments:*
4. YES ☐ NO ☐ NA ☐	Are the BMPs selected and implemented for Construction Stormwater Pollution Prevention appropriate to minimize pollutants in the MS4 to the MEP? *Comments:*

5. YES ☐	NO ☐	NA ☐	Are the BMPs selected and implemented for Post-Construction Runoff Management appropriate to minimize pollutants in the MS4 to the MEP? *Comments:*
6. YES ☐	NO ☐	NA ☐	Are the BMPs selected and implemented for Good Housekeeping for Municipal Operations appropriate to minimize pollutants in the MS4 to the MEP? *Comments:*

C. Changes in BMPs or objectives (S8.B)

If any of the BMPs or objectives is being changed, list the old BMP and objective, the new BMP and objective, and a justification for the change below.	
1. Old BMP:	Old Objective:
2. New BMP:	New Objective:
Justification for change:	
1. Old BMP:	Old Objective:
2. New BMP:	New Objective:
Justification for change:	

APPENDIX 5 – Notice of Intent (NOI) for Coverage under a National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater General Permit

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Introduction

This form must be used by all entities seeking coverage under one or more of the following municipal separate storm sewer permits:

- **Phase I Permit** – "National Pollutant Discharge Elimination System and State Waste Discharge General Permit for Discharges from Large and Medium Municipal Separate Storm Sewer Systems"
- **Phase II Permit for Western Washington** – "National Pollutant Discharge Elimination System and State Waste Discharge General Permit for Discharges from Small Municipal Separate Storm Sewers in Western Washington"
- **Phase II Permit for Eastern Washington** – "National Pollutant Discharge Elimination System and State Waste Discharge General Permit for Discharges from Small Municipal Separate Storm Sewers in Eastern Washington"

The Department of Ecology (Ecology) will use the information provided to determine if coverage under one or more of the above municipal stormwater general permits is required and/or appropriate. Please answer all questions accurately and completely. If a question does not apply, answer NA to that question. See instructions at the back of the form for more information.

Operators of municipal separate storm sewer systems (MS4s) seeking permit coverage must complete this application and return it to Ecology. You may print this form and complete it by hand, or download the form from Ecology's Web site and fill it out electronically. The form is available at: http://www.ecy.wa.gov/biblio/ecy070207.html.

An authorized signature is needed to complete the application. Please reference supporting documents in the text and attach as necessary.

Mail completed NOI to:

Department of Ecology
Water Quality Program
Municipal Stormwater Permits
P.O. Box 47696
Olympia, WA 98504-7696

Ecology will send each applicant an acknowledgment of receipt. If you have questions about this application, please contact the appropriate Ecology employee listed in the instructions at the end of this form, or call Ecology's Water Quality Program at 360-407-6600.

Ecology is an equal opportunity agency.

Part 1 - Owner/Operator Information

A. Applicant Information			**B. Responsible Official or Representative**		
Name of city, county, or special district:			Name		
			Title		
			Phone		
			Email		
Mailing Address			Mailing Address		
PO Box (Optional)			PO Box (Optional)		
City	State	Zip	City	State	Zip

C. Billing Address, if different			**D. Contact Person**
Name			Name
Mailing Address			Title
PO Box (Optional)			Phone No. Business Ext.
City	State	Zip	Email
			Fax No. (Optional)

E. Ownership Status (check appropriate box)
☐ City or Town ☐ County ☐ Federal ☐ Tribal
Special Purpose District:(secondary permittee) ☐ Diking/drainage district ☐ Port ☐ Flood control district ☐ University ☐ Public school district ☐ Park district ☐ State agency (give name) _____ ☐ Other (please describe) _____

Part 2 – Geographic Area Where the applicant's MS4s are located (see instructions)

☐ Phase I Municipal Stormwater Permit
☐ Phase II Municipal Stormwater Permit for Western Washington
☐ Phase II Municipal Stormwater Permit for Eastern Washington

If you operate municipal separate storm sewer systems which are located in areas covered by more than one permit please list the locations of all of the municipal separate storm sewer systems for which you are requesting permit coverage.

Part 3 – Population served by the MS4

Estimated population (resident and commuter) served by the MS4 within the geographic area(s) covered by the permits: _____

Part 4 – Map(s)

A. Is part of the MS4 located on tribal lands (within a reservation or on land held in trust for a tribe)? For the Puyallup reservation only, check "yes" if MS4 is located on trust lands and "no" if any part of the MS4 is located on fee lands. ☐ Yes ☐ No

B. For special purpose districts only, attach a map or maps delineating the geographic area served by the MS4.
☐ Attach map(s) to this form
☐ Not applicable

Part 5 – Co-Permittee information

Complete this part of the NOI only if you are co-applying with another entity to meet the requirements of the permit. Permittees that co-apply are responsible for meeting permit conditions related to their discharge(s).

If you are co-applying with another entity or entities please include, as an **attachment to this NOI, a summary of the permit obligations** that will be carried out jointly among co-applicants. The summary must identify the other co-applicant(s) and must be signed by the other co-applicant(s).

☐ Attach a summary of joint permit obligations
☐ Summary is signed by all co-applicants
☐ Not Applicable

Part 6 – Relying on another entity to satisfy permit requirement(s)

Complete this part of the NOI only if you are relying on another entity to satisfy one or more of the requirements of the permit. Permittees that rely on another entity to satisfy one or more of their permit obligations remain responsible for permit compliance if the other entity fails to implement the permit conditions. Permittees may rely on another entity provided:

1. The other entity agrees to take on responsibility for implementation of the permit requirement(s),

   AND

2. The other entity implements the permit requirements.

If you are relying on another entity or entities to satisfy one or more of the permit obligations, please include as an **attachment to this NOI a summary of the permit obligations** that will be carried out by another entity. The summary must identify the other entity or entities and must be signed by the other entity or entities.

☐ Attach summary of permit obligations carried out by another entity
☐ Summary is signed by all other entities
☐ Not Applicable

Part 7 – Public Notice

A public notice must be published at least ***once each week for two consecutive weeks*** in a ***single*** newspaper of general circulation in the county or city in which the district or entity is located. See the NOI instructions for the public notice language requirements. Permit coverage will not be granted sooner than ***31 days*** after the date of the second public notice.

Submit the NOI and public notice to Ecology before the date of the first public notice. A copy of the NOI and public notice may be faxed to (360) 407-6426.

Name of the newspaper that will publish the public notices: _____

Provide the **exact** dates (mm/dd/yy) that the first and second public notices will appear in the newspaper:

Date of the first notice ____/____/____

Date of second notice ____/____/____

Part 8 – 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 gather and evaluate the information submitted. 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 knowing violations.

_____

Print or type name of responsible official or representative **Title**

/ /

_____

Signature of responsible official or representative **Date**

INSTRUCTIONS

These instructions will help you prepare an application, referred to as a Notice of Intent (NOI), for coverage under a National Pollutant Discharge Elimination System (NPDES) General Permit and State Waste Discharge Permit for stormwater discharges associated with municipal separate storm sewer systems in Washington State.

Questions?

If you have questions, please contact the Ecology employee who manages the permit in the county or counties in which your facility or district is located:

- Island, Skagit, and Whatcom Counties:
  contact Steve Hood at 360-738-6254
- King, Kitsap, and Snohomish Counties:
  contact Anne Dettelbach at 425-649-7093
- Clark, Cowlitz, Clallam, Grays Harbor, Lewis, Pierce, and Thurston Counties:
  contact Alison Chamberlin at 360-407-0245
- Benton, Chelan, Kittitas, Douglas, and Yakima Counties:
  contact Terry Wittmeier at 509-574-3991
- Asotin, Franklin, Grant, Spokane, Walla Walla, and Whitman Counties:
  contact Dave Duncan at 509-329-3554

Or, call Ecology's Water Quality Program office at 360-407-6600, and the receptionist will direct you to another staff member who can assist you.

Who must apply?

Federal and state law requires all operators of regulated municipal separate storm sewer systems (MS4s) to apply for and obtain coverage under this permit, or to be permitted under a separate individual permit, unless exempted in accordance with conditions described below.

What is an MS4?

A municipal separate storm sewer system (MS4) is a conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels and/or storm drains which is:

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

b. Designed or used for collecting or conveying stormwater.

c. Not a combined sewer system.

d. Not part of a publicly owned treatment works (POTW) (see 40 CFR 122.2).

MS4s also include systems similar to separate storm sewer systems in municipalities such as: universities, prison complexes, highways and other thoroughfares, and flood control districts.

Storm sewers in very discrete areas such as individual buildings do not require coverage under this permit. Storm drain systems operated by non-governmental, private entities such as: individual buildings; private schools, colleges, and universities; and industrial and commercial entities **are not** subject to these permits.

Who needs a permit?

1. A regulated MS4 is a municipal separate storm sewer system that:
   - Is located within, or partially within, the unincorporated areas of Clark, King, Pierce or Snohomish counties; or
   - Is located within, or partially within, the cites of Seattle or Tacoma; or
   - Is located within the other areas defined in the permits. See list of cities and counties in Part 2 of the line-by-line instructions or Ecology's maps of permit coverage www.ecy.wa.gov/programs/wq/stormwater/phase_2/maps.html for more information on these locations; or
   - Is designated by Ecology

   AND
   - Discharges stormwater from the MS4 to a surface water of Washington State; and
   - Is not eligible for an exemption.
2. All operators of municipal separate storm sewers which meet the criteria listed above must obtain coverage under this permit. Operators of municipal separate storm sewer systems may also include, but are not limited to: public flood control districts, public diking, and drainage districts, public schools including universities, and correctional facilities that own or operate an MS4 serving non-agricultural land uses.
3. If Ecology determines the MS4 is a significant source of pollution to surface waters of the state, Ecology may require any other operators of small municipal separate storm sewer systems to obtain permit coverage. Ecology will notify the affected MS4 that permit coverage is required by issuing an administrative order (see RCW 90.48).

Who does not need to apply?

State and federal laws do not require a regulated MS4 to obtain permit coverage, if either of the following conditions applies:

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

- The small MS4 is not contributing substantially to the pollutant loadings of a physically interconnected MS4 that is regulated by the NPDES stormwater program.
- 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.
- In areas where an EPA approved Total Maximum Daily Load (TMDL), or water quality improvement plan for impaired waters, has been completed, stormwater controls on the MS4 have not been identified as being necessary.

***In determining the total population served, include both resident and commuter populations as follows:*

- *For publicly operated school complexes including universities and colleges, the total population served includes the sum of the average annual student enrollment plus staff.*
- *For flood control, diking, and drainage districts, the total population served includes residential population and any non-residents regularly employed in the areas served by the small MS4.*

MS4s operated by:

- The federal government on military bases or other federal lands; or by the United States Military, the Bureau of Land Management, the United States Park Service, or other federal agencies; or
- Federally recognized tribes located within tribal lands

Are not covered under this permit but may need coverage under a permit issued by the USEPA.

When to apply

Submit the NOI to the Department of Ecology on or before the date of the first public notice required in part 5 of this NOI. Ecology must have the permit application during the public comment period in order to provide the public access to the applications as required by state law (WAC 173-226-130(5)). Ecology cannot grant permit coverage until 31 days after the date of the second public notice.

Upon receipt of a complete NOI, Ecology will notify the applicant by mail of confirmation of coverage under the permit. An NOI is deemed complete only after the 30-day public comment period and all other requested information has been supplied. Permit coverage will begin on the date specified in Ecology's letter of confirmation.

Where to apply

Mail the signed NOI to: Washington Department of Ecology
Water Quality Program
Municipal Stormwater Permits
P.O. Box 47696
Olympia, WA 98504-7696

Fees

There is no application fee. Ecology will bill the applicant(s) for permit fees after permit coverage is issued. Call Bev Poston at 360-407-6425 or email bpos461@ecy.wa.gov for questions relating to fees.

If you need this publication in an alternate format, please call the Water Quality Program at 360-407-6401. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Line-by-line Instructions

Part 1 – Owner/Operator information

A. Applicant information - Fill out the name and mailing address of the city, county, or public entity that will receive coverage under the permit.
B. Responsible Official or Representative – Fill out the name, address and contact information for the principal executive officer or ranking elected official responsible for signing the application and all reports. See Part 8 for more information.
C. Billing information - If a separate department or office handles billing, enter the appropriate contact information. There is an annual permit fee associated with this permit.
D. Contact person - Enter the name, title, phone number, and email for the person who will be in charge of developing the stormwater management program and meeting the stormwater permit requirements.
E. Ownership status - Check the appropriate box indicating the ownership status (e.g., city, county, or special district type).

Part 2 – Permit(s) under which the applicant is requesting coverage

Check the box that corresponds to the permit(s) under which you are applying for coverage. The geographic locations covered by each permit break down as follows:

- **Phase I** – regulates entities within, or partially within the unincorporated areas of Clark, King, Pierce, or Snohomish counties; or the cities of Seattle or Tacoma.
- **Phase II Western Washington** – regulates entities in the census-defined urban areas of western Washington and some cities with populations over 10,000.
- **Phase II Eastern Washington –** regulates entities in the census-defined urban areas of eastern Washington and some cities with populations over 10,000.

Note: Applicants may submit a single NOI to request coverage of all of the regulated MS4s which they operate. For example, a single NOI may be submitted to cover the main campus and any satellite campuses of a university which may require permit coverage. Applicants requesting coverage for multiple sites/locations must list the locations for each site/location for which coverage is being requested. When more than one permit is checked, Ecology will assign the permit that will provide coverage.

Part 3 – Population served by the MS4

Provide an estimate of the population served by the MS4 within the geographic area(s) covered by the permits. The estimate must include both resident and commuter populations. For example, a university may have a resident population of students who live on campus and a commuter population of students and employees who commute to campus.

Part 4 – Map requirements

A. Is part of the MS4 located on tribal lands (within a reservation or on land held in trust for a tribe)? For the Puyallup reservation only, check "yes" if MS4 is located on trust lands and "no" if any part of the MS4 is located on fee lands. The portion of the MS4 that is located on tribal lands will not be covered under these permits.
B. For special purpose districts only, attach a map or maps delineating the geographic area served by the MS4.

Part 5 – Co-Permittee information
Complete this part of the NOI only if you are co-applying with another entity to meet the requirements of this permit. Permittees that co-apply are responsible for meeting permit conditions related to their discharge(s).

If you are co-applying with another entity or entities, please include as an attachment to this NOI a summary of the permit obligations that will be carried out jointly among co-applicants. The summary must identify the other co-applicant/s and must be signed by the other co-applicant/s.

Part 6 - Relying on another entity to satisfy permit requirement(s)
Complete this part of the NOI only if you are relying on another entity to satisfy one or more of the requirements of the permit. Permittees may rely on another entity provided the entity satisfies all of the requirements it agrees to undertake (see 40 CFR 122.35(a)).

That other entity **must agree** to take responsibility and **implement** the permit requirement(s).

Permittees that rely on another entity to satisfy one or more of their permit obligations remain responsible for permit compliance with those obligations if the other entity fails to implement the permit conditions.

If you are relying on another entity or entities to satisfy one or more of the permit obligations, please include as an attachment to this NOI a summary of the permit obligations that will be carried out by another entity. The summary must identify the other entity or entities and must be signed by the other entity or entities.

Part 7 – Public notice
You must publish a public notice in a newspaper of general circulation in the county or city in which the district or entity is located. The following sample public notice contains the required public notice elements.

Sample Public Notice

(Name and address of municipality, district or other public entity) is seeking coverage under (select one of the following):

- **Phase I Permit** – "National Pollutant Discharge Elimination System and State Waste Discharge General Permit for Discharges from Large and Medium Municipal Separate Storm Sewer Systems"
- **Phase II Permit for Western Washington** – "National Pollutant Discharge Elimination System and State Waste Discharge General Permit for Discharges from Small Municipal Separate Storm Sewers in western Washington"
- **Phase II Permit for Eastern Washington** – "National Pollutant Discharge Elimination System and State Waste Discharge General Permit for Discharges from Small Municipal Separate Storm Sewers in eastern Washington"

The proposed permit will regulate stormwater discharges from the municipal separate storm sewer system located in (*city, town or county*). The permit requires *(Name of municipality, district or other public entity*) to develop and implement a stormwater management program that:

1. Reduces the discharge of pollutants to the maximum extent practicable.
2. Protects water quality.
3. Satisfies appropriate requirements of the Clean Water Act.

Any person desiring to present views to the Department of Ecology concerning this application may notify Ecology in writing within 30 days from the last date of publication of this notice.

Submit comments to:

Washington Department of Ecology
Water Quality Program
Municipal Stormwater Permits
P.O. Box 47696
Olympia, WA 98504-7696

Fax: 360-407-6426

Part 8 - Certification

An authorized person, such as a principal executive officer or ranking elected official, must sign the certification statement.

OR

A duly authorized representative of the executive officer (or ranking elected official) may sign the certification as long as:

1. The signator receives written authorization from the executive officer or ranking elected official. This document must be submitted to Ecology.
2. The authorization specifies an individual or position that has responsibility for the overall development and implementation of the stormwater management program.

If you need this publication in an alternate format, please call the Water Quality Program at 360-407-6401. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

APPENDIX 6 – Street Waste Disposal

Street Waste Liquids

General Procedures:
Street waste collection should emphasize retention of solids in preference to liquids. Street waste solids are the principal objective in street waste collection and are substantially easier to store and treat than liquids.

Street waste liquids require treatment before their discharge. Street waste liquids usually contain high amounts of suspended and total solids and adsorbed metals. Treatment requirements depend on the discharge location.

Discharges to sanitary sewer and storm sewer systems must be approved by the entity responsible for operation and maintenance of the system. Ecology will not generally require waste discharge permits for discharge of stormwater decant to sanitary sewers or to stormwater treatment BMPs constructed and maintained in accordance with Ecology's Stormwater Management Manual for Western Washington.

The following order of preference, for disposal of catch basin decant liquid and water removed from stormwater treatment facilities, is required.

1. **Discharge of catch basin decant liquids to a municipal sanitary sewer connected to a Public Owned Treatment Works (POTW) is the <u>preferred disposal option</u>.** Discharge to a municipal sanitary sewer requires the approval of the sewer authority. Approvals for discharge to a POTW will likely contain pretreatment, quantity and location conditions to protect the POTW. Following the conditions is a permit requirement.

2. **Discharge of catch basin decant liquids may be allowed into a Basic or Enhanced Stormwater Treatment BMP, if option 1 is not available.**
   Decant liquid collected from cleaning catch basins and stormwater treatment wetvaults may be discharged back into the storm sewer system under the following conditions:

- The preferred disposal option of discharge to sanitary sewer is not reasonably available, and
- The discharge is to a Basic or Enhanced Stormwater Treatment Facility. If pretreatment does not remove visible sheen from oils, the treatment facility must be able to prevent the discharge of oils causing a visible sheen, and
- The discharge is as near to the treatment facility as is practical, to minimize contamination or recontamination of the collection system be, and
- The storm sewer system owner/operator has granted approval and has determined that the treatment facility will accommodate the increased loading. Pretreatment

conditions to protect the treatment BMP may be issued as part of the approval process. Following local pretreatment conditions is a requirement of this permit.

- Flocculants for the pretreatment of catch basin decant liquids must be non-toxic under the circumstances of use and must be approved in advance by the Department of Ecology.

The reasonable availability of sanitary sewer discharge will be determined by the Permittee, by evaluating such factors as distance, time of travel, load restrictions, and capacity of the stormwater treatment facility.

3. **Water removed from stormwater ponds, vaults and oversized catch basins may be returned to the storm sewer system.** Stormwater ponds, vaults and oversized catch basins contain substantial amounts of liquid, which hampers the collection of solids and pose problems if the removed waste must be hauled away from the site. Water removed from these facilities may be discharged back into the pond, vault or catch basin provided:

- Clear water removed from a stormwater treatment structure may be discharged directly to a down gradient cell of a treatment pond or into the storm sewer system.
- Turbid water may be discharged back into the structure it was removed from if
  - the removed water has been stored in a clean container (eductor truck, Baker tank or other appropriate container used specifically for handling stormwater or clean water); and
  - there will be no discharge from the treatment structure for at least 24 hours.
- The discharge must be approved by the storm sewer system owner/operator.

APPENDIX 7 – Determining Construction Site Sediment Damage Potential

The following rating system allows objective evaluation of a particular development site's potential to discharge sediment. Permittees may use the rating system below or develop alternative process designed to identify site-specific features which indicate that the site must be inspected prior to clearing and construction. Any alternative evaluation process must be documented and provide for equivalent environmental review.

Step one is to determine if there is a sediment/erosion sensitive feature downstream of the development site. If there is such a site downstream complete step two, assessment of hydraulic nearness. If there is a sediment/erosion sensitive feature and it is hydraulically near the site then go to step three to determine the construction site sediment transport potential.

STEP 1 – Sediment/Erosion Sensitive Feature Identification

Sediment/erosion sensitive features are areas subject to significant degradation due to the effect of sediment deposition or erosion. Special protection must be provided to protect them. Sediment/erosion sensitive features include but are not limited to:

i. Salmonid bearing fresh water streams and their tributaries or freshwater streams that would be Salmonid bearing if not for anthropogenic barriers;
ii. Lakes;
iii. Category I, II, and III wetlands;
iv. Marine near-shore habitat;
v. Sites containing contaminated soils where erosion could cause dispersal of contaminants; and
vi. Steep slopes (25% or greater) associated with one of the above features.

Identify any sediment/erosion sensitive features, and proceed to step two. If there are none the assessment is complete.

STEP 2 – Hydraulic Nearness Assessment

Sites are hydraulically near a feature if the pollutant load and peak quantity of runoff from the site will not be naturally attenuated before entering the feature. The conditions that render a site hydraulically near to a feature include, but are not limited to, the following:

i. The feature or a buffer to protect the feature is within 200 feed downstream of the site.
ii. Runoff from the site is tight-lined to the feature or flows to the feature through a channel or ditch.

A site is not hydraulically near a feature if one of the following takes place to provide attenuation before runoff from the site enters the feature:

i. Sheet flow through a vegetated area with dense ground cover
ii. Flow through a wetland not included as a sensitive feature
iii. Flow through a significant shallow or adverse slope, not in a conveyance channel, between the site and the sensitive feature.

Identify any of the sediment/erosion sensitive features from step one that are hydraulically near the site, and proceed to step three. If none of the sediment/erosion sensitive features are hydraulically near the site the assessment is complete.

STEP 3 – Construction Site Sediment Transport Potential

Using the worksheet below, determine the total points for each development site. Assign points based on the most critical condition that affects 10% or more of the site.

If soil testing has been performed on site, the results should be used to determine the predominant soil type on the site. Otherwise, soil information should be obtained from the county soil survey to determine Hydrologic Soil Group (Table of Engineering Index Properties for step 1.D) and Erosion Potential (Table of Water Features for step 1.E)

When using the county soil survey, the dominant soil type may be in question, particularly when the site falls on a boundary between two soil types or when one of two soil types may be present on a site. In this case, the soil type resulting in the most points on the rating system will be assumed unless site soil tests indicate that another soil type dominates the site.

Use the point score from Step 3 to determine whether the development site has a high potential for sediment transport off of the site.

Total Score	Transport Rating
<100	Low
≥100	High

A high transport rating indicates a higher risk that the site will generate sediment contaminated runoff.

Construction Site Sediment Transport Potential Worksheet

A. Existing slope of site (average, weighted by aerial extent): Points
- 2% or less 0
- >2-5% 5
- >5-10% 15
- >10-15% 30
- >15% 50

B. Site Area to be cleared and/or graded:
- <5,000 sq. ft. 0
- 5,000 sq. ft. – 1 acre 30
- >1 acres 50

C. Quantity of cut and/or fill on site:
- <500 cubic yards 0
- 500 – 5,000 cubic yards 5
- >5,000 – 10,000 cubic yards 10
- >10,000 – 20,000 cubic yards 25
- >20,000 cubic yards 40

D. Runoff potential of predominant soils (Natural Resources Conservation Service):
- Hydrologic soil group A 0
- Hydrologic soil group B 10
- Hydrologic soil group C 20
- Hydrologic soil group D 40

E. Erosion Potential of predominant soils (Unified Classification System):
- GW, GP, SW, SP soils 0
- Dual classifications (GW-GM, GP-GM, GW-GC, GP-GC, SW-SM, SW-SC, SP-SM, SP-SC) 10
- GM, GC, SM, SC soils 20
- ML, CL, MH, CH soils 40

F. Surface or Groundwater entering site identified and intercepted[1]:
- Yes 0
- No 25

G. Depth of cut or height of fill >10 feet:
- Yes 25
- No 0

H. Clearing and grading will occur in the wet season (October 1 – May 1):
- Yes 50
- No 0

TOTAL POINTS..... _____

[1] If no surface or groundwater enters site, give 0 points.

APPENDIX B

Gap Analysis and Needs Assessment

GAP ANALYSIS AND NEEDS ASSESSMENT

City of Edmonds Stormwater Comprehensive Plan and Stormwater Management Program Update

Prepared for

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March 30, 2009

Note:
Some pages in this document have been purposefully skipped or blank pages inserted so that this document will copy correctly when duplexed.

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1. Introduction

The City of Edmonds (City) is located in southwestern Snohomish County, Washington on the shores of Puget Sound. The City has a land area of approximately 8.9 square miles and a population of approximately 40,760 (Edmonds 2005, 2009). Edmonds is the second largest city in Snohomish County and was incorporated in 1890. According to the City of Edmonds Comprehensive Plan (Edmonds 2006), 99.4 percent of the City's area is composed of the following land use categories: single-family residential (54.8 percent), City-owned right-of-way (19.2 percent), vacant or unclassified (6.6 percent), community facilities (5.0 percent), multifamily residential (4.8 percent), commercial (4.6 percent), and recreation and open space (4.4 percent).

The urban development that has occurred in Edmonds since 1890 has adversely affected the quantity and quality of the generated stormwater runoff. This runoff has increased peak flow rates causing stream bank erosion and increased pollutant loading to streams, wetlands, Lake Ballinger, and Puget Sound. The City's first drainage ordinance (number 1924), approved by the City Council on June 28, 1977 (effective July 6, 1977), began addressing runoff problems caused by development. The City substantially updated its stormwater regulations in March 1995 when the Council adopted Ordinance 3013, which became Chapter 18.30 of the Edmonds Community Development Code. This revision was in response to the 1994 Puget Sound Water Quality Management Plan.

The purpose of the City's stormwater management program (SWMP), as defined in the Stormwater Comprehensive Plan (Edmonds 2003), is to manage the quantity and quality of stormwater runoff to meet regulatory requirements and minimize adverse effects on the environment and private and public property. The City is subject to the regulatory requirements under the Department of Ecology's (Ecology) *Western Washington Phase II Municipal Stormwater Permit* (Phase II Permit) (Ecology 2007) that address a variety of issues associated with stormwater runoff.

To address new regulations and recent developments in the practice of stormwater management, the City is preparing an update to its Stormwater Comprehensive Plan. This report outlines gaps in the current SWMP and specific needs that must be addressed to meet the regulatory requirements and other City objectives. The Phase II permit issued by Ecology on January 17, 2007 (with an effective date of February 16, 2007) specifies requirements for the following components of the City's SWMP (Ecology 2007):

- Public education and outreach
- Public involvement and participation
- Illicit discharge detection and elimination

- Controlling runoff from new development, redevelopment, and construction sites
- Pollution prevention, operation, and maintenance for municipal operations

The stormwater management program is primarily the responsibility of the Public Works Department, with support from the departments of Planning and Development Review; Engineering; and Parks, Recreation, and Cultural Services.

This report is intended to guide many aspects of the update to the 2003 Stormwater Comprehensive Plan, while also identifying new issues that were not addressed in the 2003 plan (Edmonds 2003). To facilitate the development of the SWMP document required by Section S5.A.2 of the Phase II permit, this report is organized according to the sections of the Phase II permit requirements, with the following sections:

- Methods of Analysis
- Public Education and Outreach (Section S5.C.1 of the permit)
- Public Involvement and Participation (Section S5.C.2 of the permit)
- Illicit Discharge Detection and Elimination (Section S5.C.3 of the permit)
- Controlling Runoff from New Development, Redevelopment, and Construction Sites (Section S5.C.4 of the permit)
- Pollution Prevention and Operation and Maintenance for Municipal Operations (Section S5.C.5 of the permit)
- Compliance with Total Maximum Daily Load Requirements (Section S7 and Appendix 2 of the permit)
- Monitoring (Section S8 of the permit)
- Reporting (Section S9 of the permit)
- Conclusions
- References

2. Methods of Analysis

Herrera Environmental Consultants (Herrera), in cooperation with City staff, compared the current stormwater program activities to the existing stormwater regulatory requirements.

Stormwater issues were identified during a review of available documents and through two workshops involving Herrera and City staff. Existing and planned City programs were compared to regulatory requirements, with particular attention given to the new Phase II permit requirements. In addition to considering regulatory requirements stemming from the Phase II permit, other issues of concern to the City that relate to stormwater management were researched and discussed in the workshops.

2.1 Document Review

During its evaluation of the City's stormwater program, Herrera reviewed all pertinent documents, including drainage basin studies and City planning documents. A complete list of background documents is provided in Appendix A.

2.2 Workshops

To examine the components of the City's SWMP in more detail and to identify previously undocumented issues, several City staff members representing all aspects of the City's stormwater program attended workshops on January 20, 2009, at the Public Works Maintenance Shop and on February 2, 2009, at Edmonds City Hall. A SWMP status survey was used to facilitate a discussion of Phase II permit requirements, other regulatory requirements (e.g., requirements related to total maximum daily load (TMDL), underground injection control, and Endangered Species Act compliance), staffing needs, funding needs, and other issues of concern to stormwater managers and staff. The SWMP status survey and a list of workshop attendees are provided in Appendix B. Not all of the items listed in the status survey were covered in the workshops, but most of the survey contents were discussed as appropriate and as time allowed.

2.3 Gap Analysis and Needs Assessment

After the workshops with City staff, the current City SWMP document (Edmonds 2008) was compared to the Phase II permit requirements, other regulatory requirements, and other stormwater-related concerns unique to the City of Edmonds that were raised in the workshops. The findings of this process, including SWMP needs, are presented in the following sections. These findings include a summary of applicable Phase II permit requirements, a list of current SWMP activities that satisfy the permit requirements and meet other City objectives, and a list of planned activities that will accomplish the same. For planned activities, the permit deadline and status are also listed. For this report, status is defined as follows:

- *Ongoing*: an activity that is already being implemented by the City but will continue to be modified to meet the Phase II permit requirements

- *Under development*: an activity that has not yet been implemented by the City but is currently being developed

- *To be developed*: an activity that has not been developed yet but is a requirement of the Phase II permit that the City is planning to implement

3. Public Education and Outreach

The SWMP requirements for public education and outreach (Section S5.C.1 of the Phase II permit) are summarized below followed by a description of the current and planned SWMP activities that meet these requirements.

3.1 Permit Requirements

Section S5.C.1.a-c of the Phase II permit lists the following requirements:

- Provide an education and outreach program targeting the following audiences:
  - General public
  - General public, businesses (including home-based and mobile businesses)
  - Homeowners, landscapers, and property managers
  - Engineers, contractors, developers, City staff involved in review of development projects, and City staff involved in land use planning
- Measure the understanding and adoption of target behaviors among the targeted audiences
- Track and maintain records of public education and outreach activities

3.2 Current Activities

The City currently provides the educational materials and public outreach activities summarized in Table 3-1. Although extensive public education and outreach is currently available, the City still needs to implement a method to measure the understanding and adoption of target behaviors. The City currently tracks and maintains records of public education and outreach activities.

3.3 Planned Activities

In addition to the public education and outreach activities discussed in the previous section, Table 3-2 outlines planned activities and the associated permit deadlines.

Table 3-1. Current public education and outreach activities in Edmonds.

Educational Material/Activity	Description of Educational Material/Activity	Phase II Permit Sections(s) (and Target Audience)
Where in the World Is Your Watershed? brochure	Brochure describes pollutant sources from lawns and gardens, pet wastes, land clearing and construction activity, and vehicles. It provides a list of actions that citizens can do to protect their watershed.	S5.C.1.a.i (general public) S5.C.1.a.ii (general public) S5.C.1.a.iii (homeowners)
Streamside Landowners Best Management Practices web page	This portion of the City's website discusses leaving stream banks natural, planting native plants and trees, limiting the use of lawn chemicals, proper car washing, and keeping pets out of streams.	S5.C.1.a.i general public) S5.C.1.a.ii (general public) S5.C.1.a.iii (homeowners)
Sound Salmon curriculum	This school curriculum for grades 5 through 9, which can be downloaded from the City website, discusses decisions people make that can affect water quality such as disposing of waste oil and paint, washing cars, and landscaping.	S5.C.1.a.i (general public) S5.C.1.a.ii (general public)
Shared Waters booklet	This booklet is used in elementary schools primarily for salmon education; it also discusses storm drains, hazardous waste disposal, pet waste disposal, washing cars, and landscaping.	S5.C.1.a.i (general public) S5.C.1.a.ii (general public)
How to be a Salmon Friendly Gardener brochure	Brochure describes building healthy soil with compost, using natural fertilizers, directing runoff to pervious areas, and protecting shoreline habitat.	S5.C.1.a.i (general public) S5.C.1.a.iii (homeowners)
Salmon-Friendly Lawn yard sign	Homeowners sign a pledge that declares their intent to place the sign and to practice natural lawn care and to educate neighbors and others on the basics of such care	S5.C.1.a.i (general public) S5.C.1.a.iii (homeowners)
Safer Alternatives for the Home and Garden fact sheets	Fact sheets prepared by the Washington Toxics Coalition that describe alternatives to common toxic products for control of slugs, aphids, and weeds, and choosing fertilizers.	S5.C.1.a.ii (general public) S5.C.1.a.iii (homeowners)
Watershed Mystery Tour in Yost Park	Self-guided tour map that provides information on the general impacts of stormwater runoff and the impacts of growth and development.	S5.C.1.a.i (general public)
Let's Discreetly Discuss Fluffy's Pet Waste brochure	Brochure prepared by the Snohomish County Solid Waste Management Division that outlines best practices for pet waste disposal.	S5.C.1.a.i (general public)
Mutt Mitt pet waste stations	Scoop and Leash Your Dog signs are posted throughout Edmonds. Mutt Mitt pet waste stations are located at the City dog park.	S5.C.1.a.i (general public)
Storm drain stenciling	Information regarding storm drain stenciling is provided on the City website. Free assistance and stenciling supplies are offered to volunteer groups that apply the stencil.	S5.C.1.a.i (general public)
Classroom presentations	Engineering Division gives educational presentations on stormwater issues and takes classes out for a day in the field.	S5.C.1.a.i (general public)

Table 3-1 (continued). Current public education and outreach activities in Edmonds.

Educational Material/Activity	Description of Educational Material/Activity	Phase II Permit Sections(s) (and Target Audience)
Stream identification signs	Signs have been placed at stream crossing locations that identify the name of the stream, "Please Protect," and a graphic of a fish.	S5.C.1.a.i (general public)
Household Hazardous Waste Drop-off Station bookmarks	Information regarding the County's Household Hazardous Waste Drop-off Station and proper disposal of lawn and garden chemicals, fertilizer, etc.	S5.C.1.a.ii (general public)
Charity car wash kit	Charity car wash kit with car wash runoff control materials is available to organizations that host car washes.	S5.C.1.a.ii (general public)
Business mailings	In August 2007, letters discussing best management practices and illegal discharges were mailed to automotive sales (new and used) companies, automotive repair companies, concrete contractors, and food service providers.	S5.C.1.a.ii (businesses)
Natural Lawn Care booklet	This booklet was prepared by Seattle/King County and Washington State University Extension and is available at Edmonds City Hall.	S5.C.1.a.iii (homeowners)
Rain Gardens, Rain Barrels, and Your Backyard	A 2-hour course taught by Snohomish Conservation District staff that provides step-by-step instructions for how to build your own rain barrel and rain garden (advertised in The CRAZE, a recreation newsletter published by Edmonds, Lynnwood, and Mountlake Terrace).	S5.C.1.a.iii (homeowners)
Detention pond maintenance	Public Works Department educates businesses and homeowners associations on proper maintenance.	S5.C.1.a.iii (property managers)
Watershed Fun Fair	Family event with displays and information about backyard wildlife habitat, recycling, energy, water conservation, and other environmental topics.	Currently does not have a stormwater focus but will address S5.C.1.a.i (general public) in the future.

Table 3-2. Planned public education and outreach activities in Edmonds.

Task ID	Task Description	Phase II Permit Section(s)	Phase II Permit Deadline	Status
PE-1	Incorporate additional stormwater education materials into the Discovery Programs and the Watershed Fun Fair.	S5.C.1.a.i	February 15, 2009	Under development
PE-2	Place a version of the City watershed map on the City website	S5.C.1.a.i	None	Under development
PE-3	Advertise the illegal discharge phone number(s) by placing stickers on brochures and handouts distributed by the City.	S5.C.1.a.ii	February 15, 2009	Under development
PE-4	Identify the list of home-based and mobile businesses (i.e., carpet cleaning businesses) and provide public education and outreach materials for them.	S5.C.1.a.ii and S5.C.1.a.iii	February 15, 2009	Under development
PE-5	Provide education on yard care techniques that are protective of water quality and pesticide and fertilizer storage, in partnership with Snohomish County.	S5.C.1.a.iii	February 15, 2009	Under development
PE-6	Provide information regarding LID techniques (site design, pervious paving, retention of forests and mature trees) on the City website.	S5.C.1.a.iii	February 15, 2009	Under development
PE-7	Provide public education regarding stormwater pond maintenance on the City website.	S5.C.1.a.iii	February 15, 2009	Under development
PE-8	Provide educational materials regarding the Stormwater Management Manual for Western Washington (Ecology 2005) for engineers, contractors, developers, review staff, and land use planners.	S5.C.1.a.iv	February 15, 2009	Under development
PE-9	Provide LID educational materials for engineers, contractors, developers, review staff, and land use planners.	S5.C.1.a.iv	February 15, 2009	Under development
PE-10	Develop and implement methods to measure the understanding and adoption of the targeted behaviors.	S5.C.1.b	February 15, 2009	Under development
PE-11	Update records of public education and outreach activities.	S5.C.1.c	February 15, 2009	Ongoing

LID = low impact development

4. Public Involvement and Participation

The SWMP requirements for public involvement and participation (Section S5.C.2 of the Phase II permit) are summarized below followed by a description of the current and planned SWMP activities that meet these requirements.

4.1 Permit Requirements

Section S5.C.2.a-b of the Phase II permit lists the following requirements:

- Create opportunities for the public to participate in the decision-making processes involving the development, implementation, and update of the SWMP
- Develop and implement a process for consideration of public comments on the SWMP
- Make the SWMP document and annual report submitted to Ecology available to the public

4.2 Current Activities

In 2008, the City provided several opportunities for public involvement and participation as summarized in Table 4-1.

Table 4-1. Current public involvement and participation opportunities in Edmonds.

Date	Stormwater Program Public Involvement and Participation Opportunity	Phase II Permit Section
February 13, 2008	Planning board public hearing.	S5.C.2.a
March 4, 2008	Edmonds City Council public hearing.	S5.C.2.a
March 11, 2008	A citizen comment sheet was provided on the City website and at the front counter of Edmonds City Hall.	S5.C.2.a
March 11, 2008	SWMP document posted on the City website.	S5.C.2.b
March 31, 2008	Annual report for 2007 stormwater program activities posted on the City website.	S5.C.2.b
March 31, 2008	Invited public comments on the SWMP and the annual report via the city website and TV station.	S5.C.2.a

SWMP = stormwater management program.

4.3 Planned Activities

In 2009, the City will be updating its Stormwater Comprehensive Plan (last updated in 2003). Table 4-2 outlines recently completed and planned activities that offer opportunities for public involvement and participation in the City's stormwater program, and the associated Phase II permit deadlines.

Table 4-2. Planned public involvement and participation opportunities in Edmonds.

Task ID	Task Description	Phase II Permit Section	Proposed Schedule
PI-1	Edmonds City Council briefing	S5.C.2.a	February 24, 2009
PI-2	Public meetings during the Stormwater Comprehensive Plan update process	S5.C.2.a	April and October 2009
PI-3	Periodic updates regarding the Stormwater Comprehensive Plan update process in the Update on Edmonds newsletter	S5.C.2.a	Updates in April and October 2009 newsletters
PI-4	Planning board meetings	S5.C.2.a	To be determined in 2009
PI-5	Development stakeholders meeting	S5.C.2.a	Spring 2009
PI-6	Public hearing on Edmonds Community Development Code updates	S5.C.2.a	Summer 2009
PI-7	Edmonds City Council working session	S5.C.2.a	Summer 2009
PI-8	Revised SWMP document and Phase II permit annual report on the City website	S5.C.2.b	March 31, 2009

SWMP = stormwater management program.

5. Illicit Discharge Detection and Elimination

The SWMP requirements for illicit discharge detection and elimination (IDDE) (Section S5.C.3 of the Phase II permit) are summarized below, followed by a description of the current and planned SWMP activities that meet these requirements.

5.1 Permit Requirements

Section S5.C.3.a-f of the Phase II permit lists the following requirements:

- Develop a storm sewer map
- Develop and implement an illicit discharge ordinance
- Develop and implement an ongoing program to detect and address illicit discharges, spills, illicit connections, and illegal dumping
- Inform public employees, businesses, and the general public of the hazards associated with illegal discharges and improper disposal of waste

- Adopt and implement procedures for IDDE program evaluation and assessment
- Provide training to staff on identification and reporting of illegal discharges

5.2 Current Activities

The City has accomplished the IDDE activities summarized in Table 5-1.

Table 5-1. Current illicit discharge detection and elimination activities in Edmonds.

Task	Description of Work	Phase II Permit Section
Storm sewer map	The City has developed a storm sewer map using AutoCAD and GIS software and is in the process of compiling all of this information in GIS.	S5.C.3.a
Illicit discharge ordinance	The City currently has an ordinance (Edmonds Community Development Code, Section 7.200.070) prohibiting illegal discharges, which will be reviewed in 2009 for consistency with Ecology's guidance.	S5.C.3.b
Distribution of public information	In August 2007, the City mailed out information on best management practices and illegal discharges to food service businesses, auto repair facilities, auto sales businesses, and concrete contractors. The City also distributes information to known violators of the Illegal Discharge Code.	S5.C.3.d.i
Public listing for illegal discharge hotline	There is a phone number on the Streams, Lakes, Wetlands, and Critical Areas web page of the City website for use by any citizen who sees signs of pollutant spills near or in a storm drain or water body.	S5.C.3.d.ii
Procedures for program evaluation and assessment	The City's Stormwater Engineering Program manager responds to incidents, takes photos, documents the details of the incident and how it was dealt with, and logs this information in a spreadsheet.	S5.C.3.e

GIS = geographic information system.

5.3 Planned Activities

In addition to the IDDE activities discussed in the previous section, Table 5-2 outlines planned activities and the associated permit deadlines.

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

The SWMP requirements for controlling runoff from new development, redevelopment, and construction sites (Section S5.C.4 of the Phase II permit) are summarized below, followed by a description of the current and planned SWMP activities that meet these requirements.

Table 5-2. Planned illicit discharge detection and elimination activities in Edmonds.

Task ID	Task Description	Phase II Permit Section	Phase II Permit Deadline	Status
IDDE-1	Complete the storm sewer map, including tributary conveyances, drainage areas, and land use associated with large outfalls (i.e. outfalls with a pipe diameter of at least 24 inches) and verification of the locations and types of catch basins and compile all of this information on a GIS storm sewer map.	S5.C.3.a	February 15, 2011	Ongoing
IDDE-2	Review the current illicit discharge ordinance for consistency with Ecology's guidance and revise, if necessary.	S5.C.3.b	August 15, 2009	Under development
IDDE-3	Develop and implement an ongoing program to detect and eliminate illicit discharges that includes the following: ▪ Procedures for locating priority areas ▪ Field assessment activities ▪ Discharge characterization procedure ▪ Source tracing procedures ▪ Source removal procedures.	S5.C.3.c	August 19, 2011	To be developed
IDDE-4	Develop a prioritized list of water bodies and associated drainage areas for IDDE focus.	S5.C.3.c.ii	February 15, 2010	To be developed
IDDE-5	Conduct field assessment on three high-priority water bodies.	S5.C.3.c.ii	February 15, 2011	To be developed
IDDE-6	Conduct field assessment on one site per year.	S5.C.3.c.ii	After February 15, 2011	To be developed
IDDE-7	Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.	S5.C.3.d	August 19, 2011	To be developed
IDDE-8	Advertise the illegal discharge phone number(s) by placing stickers on brochures and handouts distributed by the City.	S5.C.3.d	February 15, 2009	Under development
IDDE-9	Adopt procedures for IDDE program evaluation (number and type of spills, ID, inspections, and feedback from public education efforts).	S5.C.3.e	August 19, 2011	To be developed
IDDE-10	Conduct training for all municipal staff who are responsible for identification, investigation, termination, cleanup, and reporting illicit discharges.	S5.C.3.f.i	August 15, 2009	Under development
IDDE-11	Conduct training for all municipal staff who might come in contact with or observe an illicit discharge/connection on the proper procedures for identifying, reporting, and responding to the illicit discharge/connection.	S5.C.3.f.ii	February 15, 2010	Under development

IDDE = illicit discharge detection and elimination.

6.1 Permit Requirements

Section S5.C.4.a-f of the Phase II permit lists the following requirements:

- Develop and adopt a new ordinance or ordinance revisions that address runoff from new development, redevelopment, and construction projects in a manner that meets the minimum requirements established by Ecology
- Adopt a site planning process and selection and design criteria for best management practice (BMPs) that will protect water quality and reduce the discharge of pollutants to the maximum extent practicable
- Develop an approval process for new development that includes inspections of private stormwater facilities
- Develop provisions for techniques for low impact development (LID) that take into account site conditions, access, and long-term maintenance
- Develop and implement a permitting process with plan review, inspection, and enforcement capability for all sites that disturb a land area of 1 acre or more
- Inspect all construction sites before construction if they exhibit high potential for sediment transport during construction to ensure adequate erosion and sediment control BMPs, and again upon completion of construction to ensure proper installation of permanent stormwater controls
- Adopt an ordinance or other enforceable mechanism to verify long-term operation and maintenance (O&M) of postconstruction facilities and BMPs
- Establish standards for stormwater facility maintenance that are equivalent to those included in Ecology's Stormwater Management Manual for Western Washington (Ecology 2005)
- Conduct annual inspections of stormwater treatment and flow control facilities permitted by the City; inspect all new flow control and water quality treatment facilities for new residential developments that are part of a larger common plan for development or sale
- Develop a record-keeping procedure for inspection reports, warning letters, notices of violations, and other enforcement records
- Provide copies of notice of intent (NOI) letters to representatives of proposed new development and redevelopment projects
- Train City staff responsible for implementing the program described above, including staff involved with permitting, plan review, construction site inspections, and enforcement

6.2 Current Activities

The City has accomplished the activities listed in Table 6-1 to control runoff from new development, redevelopment, and construction sites.

6.3 Planned Activities

In addition to the activities discussed in the previous section, Table 6-2 outlines planned activities and the associated permit deadlines.

7. Pollution Prevention and Operation and Maintenance for Municipal Operations

This section summarizes Phase II permit requirements related to pollution prevention and O&M for municipal operations (Section S5.C.5) and describes current and planned SWMP activities related to these requirements.

7.1 Permit Requirements

Section S5.C.5.a-f of the Phase II permit lists the following requirements:

- Develop maintenance standards for facilities that currently do not have maintenance standards
- Inspect municipally owned or operated permanent stormwater treatment and flow control facilities (other than catch basins) annually and take appropriate maintenance actions
- Conduct spot checks of potentially damaged permanent treatment and flow control facilities (other than catch basins) after major (greater than 24-hour, 10-year recurrence interval rainfall) storm events
- Inspect all catch basins and inlets owned or operated by the City at least once before the end of the Phase II permit term; clean catch basins if necessary
- Establish and implement practices to reduce stormwater impacts associated with runoff from streets, parking lots, roads, or highways owned or maintained by the City and road maintenance activities conducted by the City
- Establish and implement policies and procedures to reduce pollutants in discharges from all lands owned and maintained by the City, including parks, open space, road rights-of-way, maintenance yards, and stormwater treatment and flow control facilities

Table 6-1. Current activities to control runoff from new development, redevelopment, and construction sites in Edmonds.

Task	Description of Work	Phase II Permit Section
Private stormwater facility inspections	The City has legal authority, through the maintenance inspection program, to inspect private stormwater facilities that discharge to the City's storm sewer system.	S5.C.4.a.iii
Erosivity Waiver	The City does not allow construction sites to apply for the Erosivity Waiver.	S5.C.4.a.v S5.C.4.b.vii
Stormwater site plan review	The City Engineering Division (Public Works Department) requires all development and construction projects with more than 1 acre of disturbed soils to develop a stormwater pollution prevention plan that is reviewed by the City Development Services Department.	S5.C.4.b.i
Inspections before clearing and construction	The City Engineering Division inspects, before clearing (pre-construction inspection) and during construction, (TESC inspection) all known development sites that have a high potential for sediment transport.	S5.C.4.b.ii
Inspections during construction	The City Engineering Division inspects all known permitted development sites during construction to verify proper installation and maintenance of erosion and sediment control BMPs.	S5.C.4.b.iii
Inspections upon completion of construction	The City Engineering Division inspects all permitted development sites upon completion of construction to ensure proper installation of permanent stormwater facilities and structural BMPs.	S5.C.4.b.iv
Enforcement strategy	The City Engineering Division has an enforcement strategy to respond to issues of noncompliance (Edmonds Community Development Code, Section 18.30.080).	S5.C.4.b.vi
Long-term operation and maintenance ordinance	The City has ordinances that identify ownership, maintenance, repairs, operation, and inspection of private stormwater systems (Edmonds Community Development Code, Sections 18.30.100 and 18.30.120 and 18.30.130).	S5.C.4.c.i
Inspections of existing facilities	The City has a maintenance inspection program but is not inspecting all stormwater treatment and flow control facilities on an annual basis.	S5.C.4.c.iii
Inspections of new facilities	The City's engineering technicians currently inspect new flow control and water quality treatment facilities.	S5.C.4.c.iv
Record-keeping	The City uses PermitTrax software to keep records of inspections and enforcement actions by staff related to development projects that require a bulding permit. For those sites that do not require a building permit, other electronic tracking means are used. In all cases the following are tracked: inspection reports, warning letters, notices of violations, and other enforcement records.	S5.C.4.d
Notice of intent availability	The City Development Services Department has made available copies of the Notice of Intent for Construction Activity and copies of the Notice of Intent for Industrial Activity. For large site projects where a pre-application meeting is needed, these two docmuments are included in the agenda.	S5.C.4.e
Training	City engineering inspectors have attended formal workshops and training courses regarding erosion and sediment control practices and inspections. Five Engineering staff members are Certified Erosion and Sediment Control Leads (CESL). New inspectors and plan reviewers receive on-the-job training regarding inspection practices, review of erosion and sediment control practices, and review of permanent stormwater facilities.	S5.C.4.f

BMP = best management practice.

Table 6-2. Planned activities to control runoff from new development, redevelopment, and construction sites in Edmonds.

Task ID	Task Description	Phase II Permit Section	Phase II Permit Deadline	Status
DEV-1	Develop and adopt a new ordinance or ordinance revisions that address runoff from new development, redevelopment, and construction projects.	S5.C.4.a	August 15, 2009	Under development
DEV-2	Adopt a site planning process and selection and design criteria for BMP that will protect water quality and reduce the discharge of pollutants to the maximum extent practicable.	S5.C.4.a.ii	August 15, 2009	Under development
DEV-3	Develop provisions for LID techniques that take into account site conditions, access, and long-term maintenance.	S5.C.4.a.iv	August 15, 2009	Under development
DEV-4	Review the inspection record-keeping system to determine whether 95 percent of sites are inspected.	S5.C.4.b.v	August 15, 2009	Under development
DEV-5	Require formal maintenance plans upon completion of construction for permanent stormwater controls such as stormwater treatment and detention facilities and other structural BMPs.	S5.C.4.c.i	August 15, 2009	Under development
DEV-6	Establish maintenance standards equivalent to those specified in the Stormwater Management Manual for Western Washington (Ecology 2005).	S5.C.4.c.ii	August 15, 2009	Under development
DEV-7	Increase frequency of stormwater treatment and flow control facility inspections to an annual basis, unless there are maintenance records to justify a different frequency.	S5.C.4.c.iii	August 15, 2009	Under development
DEV-8	Increase frequency of flow control and water quality treatment facility inspections for new residential developments (that are part of a larger common plan of development or sale) to once every 6 months during the period of heaviest home construction.	S5.C.4.c.iv	August 15, 2009	Under development
DEV-9	Ensure training is provided to all City staff who are responsible for implementing the program to control stormwater runoff from new development, redevelopment, and construction sites, including staff involved with permitting, plan review, construction site inspections, and enforcement, and develop and implement a system for tracking this training.	S5.C.4.f	August 15, 2009	Under development

BMP = best management practice.
LID = low impact development.

- Develop and implement an ongoing training program for City employees whose construction, operations, or maintenance job functions may adversely affect stormwater quality
- Develop and implement a stormwater pollution prevention plan for all heavy equipment maintenance or storage yards and material storage facilities owned or operated by the City
- Maintain records of inspections and maintenance or repair activities

7.2 Current Activities

The City has accomplished the following activities related to pollution prevention and O&M for municipal operations that are listed in Table 7-1.

Table 7-1. Current pollution prevention and operation and maintenance activities in Edmonds.

Task	Description of Work	Phase II Permit Section
Maintenance standards	The City currently has maintenance standards (Edmonds Community Development Code, Section 18.30.100) but will revise them in 2009 to make them equivalent with the Stormwater Management Manual for Western Washington (Ecology 2005).	S5.C.5.a
Poststorm spot checks	The City storm crew does spot checks of some potentially damaged permanent stormwater treatment and flow control facilities after major storm events. The City conducts repairs to systems immediately if necessary to protect the public health, safety, welfare, or public resources.	S5.C.5.c
Catch basin and inlet inspections	The City has already inspected all if its catch basins and inlets during this permit cycle. The City will continue routine inspections and can typically cover 70 to 100 percent of its catch basins and inlets annually.	S5.C.5.d
Practices to reduce stormwater impacts from runoff and road maintenance	The City currently has established practices to reduce stormwater impacts due to runoff from streets, parking lots, and highways owned or maintained by the City and road maintenance activities conducted by the City, but it needs to formalize these procedures to meet the requirements of the Phase II permit.	S5.C.5.f
Policies and procedures to reduce pollutants in discharges	The City has established and implemented many policies and procedures to reduce pollutants in discharges from lands owned and maintained by the City, but further work is needed to meet this requirement.	S5.C.5.g

7.3 Planned Activities

In addition to the activities discussed in the previous section, Table 7-2 outlines planned activities and the associated permit deadlines.

Table 7-2. Planned pollution prevention and operation and maintenance activities in Edmonds.

Task ID	Task Description	Phase II Permit Section	Phase II Permit Deadline	Status
PPOM-1	Revise maintenance standards to be equivalent with the Stormwater Management Manual for Western Washington (Ecology 2005).	S5.C.5.a	February 15, 2010	Under development
PPOM-2	Conduct annual inspections of stormwater treatment and flow control facilities.	S5.C.5.b	February 15, 2010	Under development
PPOM-3	Establish and implement a system to track inspection and maintenance related to the Phase II permit requirements.	S5.C.5.e	February 15, 2010	Ongoing
PPOM-4	Formalize practices to reduce impacts due to runoff from streets, parking lots, and highways owned or maintained by the City and road maintenance activities conducted by the City for the following activities: ▪ 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.	S5.C.5.f	February 15, 2010	Under development
PPOM-5	Establish and implement policies and procedures to reduce pollutants in discharges from lands owned and maintained by the City for the following activities: ▪ Application of fertilizer, pesticides, and herbicides, including the development of nutrient management and integrated pest management plans ▪ Sediment and erosion control ▪ Landscape maintenance and vegetation disposal ▪ Trash management ▪ Building exterior cleaning and maintenance.	S5.C.5.g	February 15, 2010	Under development

Table 7-2 (continued). Planned pollution prevention and operation and maintenance activities in Edmonds.

Task ID	Task Description	Phase II Permit Section	Phase II Permit Deadline	Status
PPOM-6	Develop and implement a training program for construction and operation and maintenance staff.	S5.C.5.h	February 15, 2010	Under development
PPOM-7	Develop and implement a municipal stormwater pollution prevention plan for all heavy equipment maintenance or storage yards and material storage facilities owned or operated by the City.	S5.C.5.i	February 15, 2010	Under development
PPOM-8	Maintain records of inspections and maintenance or repair activities.	S5.C.5.j	February 15, 2010	Under development

8. Compliance with Total Maximum Daily Load Requirements

This section summarizes Phase II permit requirements related to established TMDL limits for targeted pollutants (Section S7 and Appendix 2) and describes current and planned SWMP activities related to these requirements.

8.1 Permit Requirements

Section S7 of the Phase II permit lists the following requirements:

- Implement the specific requirements identified in Appendix 2 of the Phase II permit for applicable TMDLs listed in Appendix 2.
- Conduct monitoring according to a quality assurance project plan (QAPP) approved by Ecology where monitoring is required in Appendix 2 of the Phase II permit.
- Compliance with the permit constitutes compliance with applicable TMDLs not listed in Appendix 2 of the Phase II permit
- Comply with permit modifications and TMDL implementation plans prepared by Ecology for TMDLs that are approved by the U.S. Environmental Protection Agency after the Phase II permit has been issued.

8.2 Current Activities

The City is currently not affected by any TMDLs listed in Appendix 2 of the Phase II permit. A TMDL for total phosphorus was established for Lake Ballinger in 1993 and is currently being met according to the Lake Ballinger Total Phosphorus Total Maximum Daily Load Water Quality Attainment Monitoring Report (Ecology 2008).

8.3 Planned Activities

The City will comply with TMDL implementation plans developed by Ecology in the future for TMDLs that affect water bodies or watersheds within the city limits.

9. Monitoring

This section summarizes Phase II permit requirements related to stormwater monitoring (Section S8) and describes current and planned SWMP activities related to these requirements.

9.1 Permit Requirements

Section S8 of the Phase II permit lists the following requirements:

- Conduct water quality monitoring required for compliance with TMDLs listed in Appendix 2 of the Phase II permit
- Conduct sampling or testing required for characterizing illegal discharges
- Provide a description of stormwater monitoring or studies conducted during the reporting period
- Provide an assessment of the appropriateness of the BMPs identified for each component of the SWMP, any changes made or expected to be made, and the reasons for these changes
- Identify sites for long-term stormwater monitoring
- Develop proposed questions and identify sites for SWMP effectiveness monitoring

9.2 Current Activities

The City currently is not conducting any monitoring efforts.

9.3 Planned Activities

Table 9-1 outlines planned activities related to monitoring and the associated permit deadlines.

Table 9-1. Planned monitoring activities in Edmonds.

Task ID	Task Description	Phase II Permit Section	Phase II Permit Deadline	Status
MON-1	Identify two outfall or conveyance locations suitable for long-term monitoring (one commercial and one high-density residential).	S8.C.1.a.iv	December 31, 2010	To be developed
MON-2	Identify two suitable questions to monitor for SWMP effectiveness, select sites to monitor, and develop a monitoring plan for each question.	S8.C.1.b	December 31, 2010	To be developed
MON-3	Describe the status of identification of sites for stormwater monitoring, include a summary of the proposed questions for the SWMP effectiveness monitoring, and describe the status of the development of the SWMP effectiveness monitoring plan in the fourth annual report.	S8.C.2.a	March 31, 2011	To be developed

SWMP = stormwater management program.

10. Reporting

This section summarizes Phase II permit requirements related to reporting (Section S9) and describes current and planned SWMP activities related to these requirements.

10.1 Permit Requirements

Section S9 of the Phase II permit lists the following requirements:

- Submit two printed copies and one electronic copy of an annual report to Ecology no later than March 31 of each year (beginning in 2008)
- Keep all records related to the Phase II permit and the SWMP for at least 5 years
- Make records related to the Phase II permit and the SWMP available to the public at reasonable times during business hours

10.2 Current Activities

The City has accomplished the activities related to SWMP reporting listed in Table 10-1.

Table 10-1. Current reporting activities in Edmonds.

Task	Description of Work	Phase II Permit Section
Annual report	First annual report (March 2008) and copy of initial 2007 SWMP document were submitted to Ecology and are posted on the City website.	S9.A

SWMP = stormwater management program.

10.3 Planned Activities

Planned activities related to reporting and the associated permit deadlines are listed in Table 10-2.

Table 10-2. Planned reporting activities in Edmonds.

Task ID	Task Description	Phase II Permit Section	Phase II Permit Deadline	Status
RPT-1	Submit second annual report and copy of current SWMP document.	S9.A	March 31, 2009	Under development
RPT-2	Submit third annual report and copy of current SWMP document.	S9.A	March 31, 2010	To be developed
RPT-3	Submit fourth annual report and copy of current SWMP document.	S9.A	March 31, 2011	To be developed

SWMP = stormwater management program.

11. Conclusions

The City's current SWMP and Stormwater Comprehensive Plan provide a good foundation for meeting the expanded needs of the Phase II permit requirements. Although all areas of the existing stormwater program will need to be expanded to meet the Phase II permit requirements, the existing program is particularly strong in the area of public involvement and participation. As noted above, the SWMP has specific strengths in the following areas that will form the foundation for SWMP expansion and refinements:

- GIS mapping (approximately 60 percent of the City's drainage systems have been mapped)
- Illicit discharge ordinance
- Permitting, plan review, and inspection processes for development and redevelopment
- O&M of municipally owned facilities
- Pollution prevention through street sweeping and catch basin cleaning

Despite major recent accomplishments of the SWMP, significant progress will need to be made by February 15, 2012, in order to meet the requirements of the Phase II permit. The most significant work will be required for the following tasks:

- Expansion of public education and outreach, including new material related to pollution prevention at problem industries
- Revisions to the existing IDDE code to reflect the latest guidance from Ecology
- Development and implementation of a formal IDDE program
- Development and implementation of a maintenance inspection and enforcement program for private stormwater facilities (approximately 425 facilities)
- Revisions to the existing City code for controlling runoff from new development, redevelopment, and construction sites to meet Phase II permit requirements and remove barriers to LID
- Expansion of LID as a component of the SWMP
- Development and implementation of a formal O&M plan

- Expansion of O&M resources for municipal facilities
- Development of municipal stormwater pollution prevention plans that incorporate existing facility-specific procedures

More detailed recommendations for satisfying the requirements of the Phase II permit are included in Appendix C.

12. References

Ecology. 2005. Stormwater Management Manual for Western Washington. Publications 05-01-029 through 05-10-033. Washington State Department of Ecology, Olympia, Washington. February 2005.

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Edmonds, City of. 2008. City of Edmonds Surface Water Management Program (SWMP) Document. March 11, 2008.

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APPENDIX A

Background Document List

Table A-1. Background document list.

Title	Author	Year
City of Edmonds Stormwater Comprehensive Plan	City of Edmonds	2003
City of Edmonds Comprehensive Plan	City of Edmonds	2005
City of Edmonds Surface Water Management Program (SWMP) Document	City of Edmonds	2008
City of Edmonds 2007 Annual Report	City of Edmonds	2008
Shell Creek Basin Study	URS Consultants	1987
Edmonds Drainage Basin Studies (Edmonds Way, Perrinville, and Meadowdale Basins)	RW Beck	1991
Chase Lake/Lake Ballinger Sub Basin Study	URS Consultants	1987
Edmonds Drainage Basin Studies (Shellabarger, Talbot Park, Northstream, and Five Corners Basins)	URS Consultants	1989
Southwest Edmonds Basin Study	Earth Tech	2002
Edmonds Stream Inventory and Assessment	Pentec Environmental	2002

APPENDIX B

City of Edmonds Stormwater Management Program Status Survey and Workshop Attendance

City of Edmonds Stormwater Management Program Status Survey and Workshop Attendance

Program Overview

1. Has the City prepared any portions of the National Pollutant Discharge Elimination System (NPDES) Phase II Appendix 3 annual report form (due March 31, 2009)?

2. Is the City interested in collaborating with other jurisdictions in order to achieve NPDES permit compliance (e.g., code changes to ensure that code is consistent across jurisdictions)?

3. What elements of the stormwater program work well?

4. What elements have been successfully integrated into the City's "normal" operating procedures?

5. What are the stormwater program problem areas and needs (i.e. what is not getting done; what needs to be done better)?

6. What are the top three things the City would like to accomplish with the stormwater comprehensive plan update?

7. What elements of the stormwater program pose the greatest challenges to City staff?

8. Are there certain aspects of the stormwater program that are a challenge to implement due to recurring circumstances, such as work that gets put aside in the wet season when staff are diverted to flood response, citizen complaints, etc.?

Public Education and Outreach

9. Does the City currently conduct any stormwater education and outreach?

10. Does the City do any of the following education/outreach:

    a. Distribute educational brochures?

    b. Stencil storm drains (if so, is it implemented citywide?)

c. Provide water quality educational materials to school districts?

d. Provide water quality educational materials when requested?

e. Collaborate with volunteer organizations on education projects?

f. Host stormwater discussions?

g. Issue stormwater public service announcements or news releases? What media?

h. Display stormwater exhibits at community locations?

i. Have a stormwater page on its website?

11. Has any other City department developed a body of literature to provide education or assistance to the public? Could the same format be used for stormwater (e.g., how to build a rain garden)?

12. Is the City currently participating in STORM (the regional public education group)?

13. Has the City developed any materials to measure the public's baseline understanding of stormwater issues and the effectiveness of the public education program?

Public Involvement and Participation

14. Did the City perform any public involvement during the 2008 annual reporting process (annual report and stormwater management program [SWMP])?

15. Does the City plan to perform any public involvement during the 2009 annual reporting process (annual report and SWMP)?

16. Has the City ever held public meetings on stormwater issues?

17. Is there an established stakeholder advisory panel related to stormwater (in addition to the Edmonds Planning Board)? If not, has the City ever considered it?

18. If there is such a panel, who is on the panel and how do they provide input?

19. Does the City have a system (phone number, website, etc) for the public to log general stormwater-related complaints in addition to flooding problems (e.g., construction site runoff)? How is the system advertised? How does the City respond to calls from the public?

20. Does the City pass on public complaints related to construction site runoff to the field inspectors?

Illicit Discharge Detection and Elimination

21. Does the City storm sewer mapping data include each stormwater outfall and connection?

22. Does City enforce code prohibitions of illicit discharges on private property or discharge of waste to the public stormwater system?

23. Are there any known or suspected illicit discharges in the City's stormwater system? How were they identified? Has the City taken any action against these offenders?

24. Does the City ever search for illicit discharges? How is the search conducted (e.g., outfall inspections, other inspections, or other methods)?

25. Does the City have a spill response plan for public facilities and the storm drain system?

26. Does the City provide training to educate staff about spill prevention and control and illicit discharges? If so, how is the training conducted?

Controlling Runoff from New Development, Redevelopment, and Construction Sites

27. When was/were the City's ordinance(s) regulating stormwater last updated?

28. What design manual(s) does the city use for public works and private development projects?

29. What concerns does the City have about adopting the Washignon State Department of Ecology's Stormwater Management Manual for Western Washington? Items for consideration:

a. Consistency between small and large site regulations

b. Manual adoption for all sites

c. Manual adoption for large sites and updates to the code for small sites

d. Basin-specific or other geography-specific requirements.

30. Does the City review site plans before construction to ensure compliance with:

    a. Temporary erosion and sediment control (TESC) requirements? Are TESC plans scrutinized for adequacy to truly work in the field as part of permit approval?

    b. Flow control and water quality requirements?

31. How does the City verify facility performance during plan review (e.g., modeling, calculations, or professional judgment)?

32. What system does the City use to track permits, plan review, and inspections? Is this system adequate for reporting NPDES permit requirements (e.g., number of permits, number of plan reviews, and number of inspections)?

33. Does the City inspect all construction sites that are required to implement erosion and sediment control plans?

34. Are erosion control measures usually implemented correctly?

35. Does the City ensure that maintenance is performed on private stormwater facilities? If so, how is that accomplished (e.g., code, maintenance covenants, or plat documents)?

36. What performance standards does the City use when evaluating maintenance needs for private stormwater facilities?

37. Does the City provide training or other educational information to the public on erosion control and stormwater best management practices (BMPs)?

38. Does the City provide contractors, developers, and staff with information on external training opportunities?

Pollution Prevention and Operation and Maintenance for Municipal Facilities

39. Does the City maintain an up-to-date list of stormwater facilities (e.g., catch basins, manholes, pipes, detention facilities, water quality BMPs, ditches, and streams) in a database or geographic information system (GIS)?

40. Does the City maintain a list of maintenance problem locations (e.g., places that are checked by Public Works staff during and/or after major storms)?

41. Are stormwater facilities ever inspected before or during maintenance (e.g., measurements of sediment/debris and facility condition)?

42. Does the City currently track the stormwater maintenance activities that are performed? If so, how?

43. How many full-time equivalent (FTE) personnel are currently required to meet the maintenance needs of the storm drainage system?

44. Does the City track the work these personnel perform (e.g., FTE per activity)?

45. Is any operation and maintenance (O&M) work performed by contract staff/companies?

46. Does the City anticipate any major upcoming O&M equipment purchases?

47. What municipal facilities does the City operate (e.g., fleet vehicle yard, maintenance shop(s), or parking garage(s))?

48. Has the City developed a municipal stormwater pollution prevention plan for municipally owned heavy equipment maintenance and storage yards and material storage facilities?

49. Do street and storm drain system maintenance staff adhere to any BMP guidelines developed regionally?

50. Does the City provide O&M training for City employees?

51. Does the City have a municipal facilities O&M plan? When was it last updated? Does it cover all facilities?

52. Does the O&M plan cover the following:

    a. Pollution prevention?

    b. Equipment fueling and maintenance?

    c. Equipment washing practices?

    d. Dust control?

    e. Catch basin cleaning?

    f. Catch basin sediment waste management?

    g. Street sweeping?

    h. Deicing and snow removal?

    i. Other waste disposal?

    j. Other aspects of O&M?

53. Do maintenance staff engage in projects/work that should be covered in the plan but currently are not covered?

54. Is the O&M plan followed and updated diligently?

55. Are portions of the O&M plan difficult to follow? Which ones?

56. Which areas of the O&M plan need further definition and/or guidelines to be effective?

57. Does the O&M plan cover parks and open spaces?

58. Does the O&M plan include a waste disposal procedure?

59. What is the City's street sweeping procedure?

Compliance with Total Maximum Daily Load Requirements

60. Is there a local or regional program for monitoring baseline conditions and evaluating surface water program effectiveness in the Lake Ballinger watershed?

61. Is the City aware of any pending additions to the Department of Ecology's list of impaired water bodies that will eventually require a TMDL?

Capital Improvement Projects

62. What is the status of the capital improvement projects identified in the 2003 Stormwater Comprehensive Plan?

63. What are the major roadblocks to execution of projects in the current capital facilities plan?

64. What capital improvement projects are still needed but not addressed in the current capital facilities plan? Why?

Staffing

65. What is the current level of staffing (i.e., FTEs) for the stormwater management program?

66. What are the current unmet staffing needs?

67. Has the City decided to hire additional staff to meet the NPDES Phase II requirements? If so, have specific tasks been identified for new staff?

Program Funding

68. Does the City currently track stormwater program funding?

69. If asked by the Department of Ecology, could the City easily produce a report that quantifies the costs of compliance with the NPDES Phase II stormwater permit?

70. Which of the following funding sources are currently used to fund activities associated with the stormwater management program:

    - ☐ Stormwater utility?
    - ☐ Grants?
    - ☐ Loans?

- ☐ Development review (permit) fees?
- ☐ Revenue bonds for capital improvement projects?
- ☐ Fee in lieu of onsite stormwater control (to pay for regional stormwater facilities)?
- ☐ General fund?
- ☐ Special purpose/local improvement district(s)?
- ☐ Drainage for flood control zone district(s)?
- ☐ System development charges?
- ☐ Intergovernmental coordination/leveraging?
- ☐ Charges paid by upstream jurisdictions?

Tracking and Reporting

71. Who in the City is responsible for NPDES permit compliance reporting?

72. Is the City aware of industrial (stormwater) NPDES permittees and other regulatory requirements targeting specific businesses?

Underground Injection Control Rule

73. How many infiltration facilities (e.g., trenches and dry wells) does the City manage?

74. Are publicly owned infiltration facilities located, mapped, and registered?

75. How many infiltration facilities are privately owned?

76. Is any City-owned drainage infrastructure draining to drywells?

77. Are privately owned infiltration facilities documented?

78. Does the City have an ordinance related to underground injection control? When was the ordinance last updated? How does the City enforce construction standards for infiltration facilities?

79. Does the City have other concerns related to underground injection controls (e.g., inspection and maintenance of public facilities, risk-based strategy for permitting approval, design standards, pollution prevention plan, groundwater degradation, replacement strategy, staff training, or reporting to the Department of Ecology)?

Endangered Species Act

80. Does the City assess stormwater impacts on listed species when making land use decisions (e.g., Puget Sound Chinook salmon, Coastal–Puget Sound bull trout, Puget Sound steelhead, Southern Resident killer whale)?

81. What (if any) policies are in place to reduce stormwater runoff, reduce impervious surfaces, and retain native vegetation for the benefit of fish and wildlife?

82. Do issues related to the Endangered Species Act seem to be a major issue with stakeholder groups?

83. What challenges do considerations related to the Endangered Species Act create for stormwater management in Edmonds?

84. Does the City coordinate its Endangered Species Act compliance strategy with other agencies (e.g., Snohomish County, neighboring cities, or the Washington State Department of Fish and Wildlife)?

Annexation

85. Does the City plan to annex any urban growth areas?

Table B-1. City of Edmonds Stormwater Management Program Workshop, January 20, 2009.

Attendee	Organization and Department	Email	Phone
Jerry Shuster	City of Edmonds - Engineering Division	shuster@ci.edmonds.wa.us	(425) 771-0220
Rob English	City of Edmonds - Engineering Division	english@ci.edmonds.wa.us	(425) 771-0220
Joanne Zulauf	City of Edmonds - Engineering Division	zulauf@ci.edmonds.wa.us	(425) 771-0220
Ed Sibrel	City of Edmonds - Engineering Division	sibrel@ci.edmonds.wa.us	(425) 771-0220
Mike Johnson	City of Edmonds - Public Works Department	johnsonm@ci.edmonds.wa.us	(425) 771-0235
Tod Moles	City of Edmonds - Public Works Department	moles@ci.edmonds.wa.us	(425) 771-0235
Noel Miller	City of Edmonds - Public Works Department	nmiller@ci.edmonds.wa.us	(425) 771-0235
Mark Ewbank	Herrera Environmental Consultants	mewbank@herrerainc.com	(206) 441-9080
Craig Doberstein	Herrera Environmental Consultants	cdoberstein@herrerainc.com	(206) 441-9080
Rebecca Dugopolski	Herrera Environmental Consultants	rdugopolski@herrerainc.com	(206) 441-9080

Table B-2. City of Edmonds Stormwater Management Program Workshop, February 2, 2009.

Attendee	Organization and Department	Email	Phone
Jerry Shuster	City of Edmonds - Engineering Division	shuster@ci.edmonds.wa.us	(425) 771-0220
Rob English	City of Edmonds - Engineering Division	english@ci.edmonds.wa.us	(425) 771-0220
Steve Fisher	City of Edmonds - Public Works Department	recycleguy@ci.edmonds.wa.us	(425) 771-0235
Rob Chave	City of Edmonds - Planning and Development Review	Chave@ci.edmonds.wa.us	(425) 771-0220
Michael Clugston	City of Edmonds - Planning and Development Review	clugston@ci.edmonds.wa.us	(425) 771-0220
Duane Bowman	City of Edmonds - Planning and Development Review	Bowman@ci.edmonds.wa.us	(425) 771-0220
Jen Machuga	City of Edmonds - Planning and Development Review	Machuga@ci.edmonds.wa.us	(425) 771-0220
Sally Lider	City of Edmonds - Parks, Recreation, and Cultural Services	lider@ci.edmonds.wa.us	(425) 771-0227
Mark Ewbank	Herrera Environmental Consultants	mewbank@herrerainc.com	(206) 441-9080
Alice Lancaster	Herrera Environmental Consultants	alancaster@herrerainc.com	(206) 441-9080
Rebecca Dugopolski	Herrera Environmental Consultants	rdugopolski@herrerainc.com	(206) 441-9080

APPENDIX C

Stormwater Management Program Needs Related to Phase II Permit

Complete NPDES Reference	Annual Report Question Number	Requirement	Current City Practices	Needs	Ecology Deliverable or Documentation in Annual Report	Due Date	Planned Action (If Known)	Other Suggestions	Comments/Questions/Notes
S1.Permit Coverage Areas and Permittees									
S1.D.2.		Submit a notice of intent to Ecology				February 16, 2007			
S2.Authorized Discharges									
S2.A.		Stormwater may be discharged to surface waters and to groundwaters of the state (authorized by this condition of the permit).							
S2.B.		Non-stormwater may be discharged to surface waters and groundwaters of the state only under the following conditions: Discharge is covered by another NPDES or State Waste Discharge Permit Discharge from emergency fire fighting activities Discharge that is already managed according to S5.C.3.b							
S2.C.		Entities that cause illicit discharges are still responsible and liable under state and federal laws and regulations.							
S2.D.		Discharges from separate storm sewers constructed after February 16, 2007, shall receive all applicable state and local permits and use authorizations, including compliance with SEPA.							
S3.Responsibilities of Permittees									
S3.A.1.		Comply with all the conditions of this permit.							
S4.Compliance with Standards									
S4.A.		No discharge of toxics							
S4.B.		No violation of surface water quality standards, groundwater quality standards, sediment management standards, or federal toxics rule							
S4.C.		Reduce discharge of pollutants to maximum extent practicable							
S4.D.		Use all known, available, reasonable methods of prevention, control and treatment (AKART)							
S4.E.		Comply with S3							
S4.F.	90-92	Respond to violations of water quality standards							
S4.F.1.	90-92	Notify Ecology within 30 days of becoming aware of water quality standard violation				30 days after becoming aware of a violation			
S4.F.2.	90-92	If Ecology identifies violation, then permittee will be required to submit a corrective action plan and report to Ecology				60 days after receiving notice from Ecology			
S4.G		Comply with any permit modifications made by Ecology							

Complete NPDES Reference	Annual Report Question Number	Requirement	Current City Practices	Needs	Ecology Deliverable or Documentation in Annual Report	Due Date	Planned Action (If Known)	Other Suggestions	Comments/Questions/Notes
S5. Stormwater Management Program for Cities, Towns, and Counties									
S5.A. Develop and Implement SWMP									
S5.A.1.		Develop and Implement SWMP				August 20, 2011			
S5.A.2.	1	Prepare written documentation of SWMP (attachment for annual report--stormwater management plan and documentation identified in S9.)			Attachment for Annual Report	March 31 of each year starting in 2008			
S5.A.3.	3	SWMP tracking							
S5.A.3.a.	4	Track the cost of development and implementation of each component of the SWMP.	As part of this project the City will be tracking the cost of developing each component of the SWMP.			January 1, 2009		Develop a program for gathering, tracking, maintaining, and using cost related information.	
S5.A.3.b.	7	Track inspections, enforcement actions, and public education activities. (See S5.C.4. and S5.C.1.)			Number of events	February 15, 2009			
S5.A.5.a.		Coordinate with other MS4s (downstream and upstream jurisdictions) as necessary				NA			
S5.A.5.b.		Coordinate between City departments				NA			
S5.B		Continue current stormwater management efforts/plans							
S5.C.SWMP Components									
S5.C.1. Public Education and Outreach									
S5.C.1.a.	5, 6, 6b	Develop and implement a public education and outreach program. Provide an education and outreach program directed at residents, businesses, industries, elected officials, policy makers, planning staff, and City of Edmonds employees.	"Where In The World Is Your Watershed?", "How to be a Salmon Friendly Gardener", "Let's Discreetly Discuss Fluffy's Pet Waste", Household Hazardous Waste Drop-off Station, "Alternative", and "Natural Lawn Care" Activities for schools include the "Sound Salmon" curriculum, the "Shared Waters" booklet, and presentations by the Engineering division Watershed Mystery Tour in Yost Park self-guided tour Storm drain stenciling program "Mutt Mitt" pet waste stations "Scoop and leash your dog" signs throughout the City "Salmon-friendly lawn" yard sign Charity car wash kit Rain Gardens, Rain Barrels, and Your Backyard Workshop (hosted by Snohomish County Conservation District) Public Works Department educates businesses and homeowners associations on proper maintenance Streamside Landowners Best Management Practices (BMPs) webpage Business mailings sent to automotive sales (new and used) companies, automotive repair companies, concrete contractors, and food service providers discussing BMPs and illegal discharges	Advertise the illegal discharge phone number(s) Provide education on yard care techniques that are protective of water quality and pesticide and fertilizer storage, in partnership with Snohomish County Identify the list of home-based and mobile businesses (i.e., carpet cleaning businesses) and provide public education and outreach materials for them Provide information regarding Low Impact Development (LID) techniques (site design, pervious paving, retention of forests and mature trees) on the City website Provide public education regarding detention pond maintenance on the City website Provide educational materials regarding the Stormwater Management Manual for Western Washington (Ecology 2005) for engineers, contractors, developers, review staff, and land use planners Provide LID educational materials for engineers, contractors, developers, review staff, and land use planners		February 15, 2009	Document the education and outreach program in the SWMP. Develop specialized educational materials to target select groups of the population and distribute this information as appropriate for the group. Incorporate stormwater education into Discovery Program activities and the Watershed Fun Fair.	Adapt or use educational materials from material developed by EPA, Snohomish County, and other jurisdictions Advertise the illegal discharge phone number(s) by placing stickers on brochures and handouts distributed by the City	

Complete NPDES Reference	Annual Report Question Number	Requirement	Current City Practices	Needs	Ecology Deliverable or Documentation in Annual Report	Due Date	Planned Action (If Known)	Other Suggestions	Comments/Questions/Notes
S5.C.1.b.	5, 8	Measure the understanding and adoption of targeted behaviors among targeted audiences.		Identify target behaviors. Identify method to measure adoption and understanding of target behaviors. Conduct ongoing measurement activities.		February 15, 2009		Establish measurement method that includes recording of baseline data and measurement of future data against baseline. Develop a survey that will be used in association with the educational events (i.e., Watershed Fun Fair) Consider using a follow-up survey or phone call to visitors after educational events to measure any change in targeted behaviors.	
S5.C.1.c.	5, 7	Record education and outreach activities	The City currently records public education activities and the number of attendees in a spreadsheet.		Number of activities implemented	February 15, 2009			
S5.C.2. Public Involvement and Participation									
S5.C.2.a.	9, 10	Create an opportunity for involvement in SWMP update.	A series of planning board meeting, city council meetings, and public hearings are scheduled for 2009. Several planning board and city council meetings also occurred during 2008. Invited public comments on the 2007 SWMP and the annual report via the city website and TV station	Advertise opportunities for the public to participate in the development, implementation, and update of the SWMP. Provide periodic updates in the "Update on Edmonds" City newsletter		February 15, 2008	Provide a public comment period for Draft Stormwater Management Comprehensive Plan. Provide a public comment period for Final Stormwater Management Comprehensive Plan. Provide an opportunity for comment on the Final Code revisions.	Add information on website such as the following statements: "Stormwater Comprehensive Plan is currently being updated. Comments should be addressed to xxxxx contact info by xxxxx date. Opportunities for public comment on the revisions will be provided at a future date."	
S5.C.2.b.	11, 12	Make SWMP, annual report, and attachments available to the public by posting documents on the City website or Ecology's website.	The SWMP, annual report for 2007, and Stormwater Comprehensive Plan (Edmonds 2003) are currently available on the City website. The annual report for 2008 will be posted once it has been completed.			March 31 of each year starting in 2008			
S5.C.3. Illicit Discharge Detection and Elimination									
S5.C.3.a.	14, 15, 16, 14b, 17, 18,	Develop a map of the stormwater system	The City has developed a storm sewer map using Autocad and Geographic Information System (GIS) software.	Complete the verification of the locations and types of catch basins and compile all of this information into a GIS storm sewer map. Make the map available in electronic format upon request from Ecology.		February 15, 2011	Complete the verification of the locations and types of catch basins and compile all of this information into a GIS storm sewer map.		
S5.C.3.b.	19, 20	Develop, adopt, and implement an ordinance that prohibits non-stormwater, illegal discharges, and dumping in stormwater system. Develop an enforcement strategy.	The City currently has an ordinance (ECDC 7.200.070) that prohibits illegal discharges.	This ordinance will be reviewed in 2009 for consistency with Ecology's guidance.		August 15, 2009		Revise current ordinance to include all the categories listed in S5.C.3.b.ii. and any other categories that contribute pollution. Revisions should also include escalating enforcement procedures and actions.	
S5.C.3.c.	21, 22, 23, 24, 25, 26, 27, 28	Develop and implement a program for detection and elimination of illicit discharges. The program should include the following: Procedures for locating priority areas based on land uses, previous complaints, and material storage Field assessment activities. Procedures for characterizing, tracing, and removing the discharge.	City staff informally monitor for illicit discharge when performing "Creek Checks" every Friday. When illicit discharges are suspected, attempts are made to identify the source of the discharge and resolve issues.	Develop a documented procedure for detection, field assessment, characterization, tracing, and addressing illicit discharges. This procedure should include a prioritized list of water bodies for visual inspection. Assess three high priority water bodies by February 15, 2011. Assess one high priority water body per year after February 15, 2011.		August 19, 2011 (Prioritized list of water bodies by February 15, 2010, Field assessment of three high priority water bodies by February 15, 2011, Field assessment of one high priority water body each year after February 15 2011)	Develop IDDE implementation plan including specific goals, required staffing levels, objectives, schedule items, recordkeeping procedures, and designation of responsible staff during 2009.	Develop procedures based on Center for Watershed Protection, 2004.	

Complete NPDES Reference	Annual Report Question Number	Requirement	Current City Practices	Needs	Ecology Deliverable or Documentation in Annual Report	Due Date	Planned Action (If Known)	Other Suggestions	Comments/Questions/Notes
S5.C.3.d.	29, 30, 31,	Provide public information on IDDE and establish a hotline for IDDE reporting.	Phone number for illicit discharge reporting is provided on the City website. The City mailed out information on BMPs and illegal discharges to the following businesses: Food Service businesses, Auto Repair facilities, Auto Sales businesses, and Concrete Contractors. The City also distributes information to all known violators of the Illegal Discharge Code.	Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste	Number of calls received Number of follow-up actions taken.	August 19, 2011 (Public Ed) February 15, 2009 (Establish hotline)		Advertise the illegal discharge phone number(s) by placing stickers on brochures and handouts distributed by the City	
S5.C.3.e.	32, 33, 34, 35, 36	Adopt procedures for IDDE program evaluation (number and type of spills, ID, inspections, feedback from public education efforts).	The City's Stormwater Engineering Program Manager responds to incidents, takes photos, documents the details of the incident and how it was dealt with, and logs this information in a spreadsheet.	Develop and adopt a formal procedure for IDDE program evaluation.	Number of tracked events, summary of calls received and follow up actions taken	August 19, 2011		Define procedure.	
S5.C.3.f.	37, 38, 39	Provide IDDE training. Provide staff with initial training, follow-up training, and develop a training program.		Provide IDDE tracking staff with initial training. Provide follow-up training. Develop a training program. Train all staff who may encounter an IDDE as part of their job functions.	Number of trainings provided, number of staff trained	August 15, 2009 (identification, response, and enforcement training) February 15, 2010 (awareness level training)		Track training and training requirements in a spreadsheet.	Includes staff who are responsible for identification, investigation, termination, cleanup, and reporting IDDEs. Also anyone who may encounter an IDDE (general awareness training).
S5.C.4. Controlling Runoff from New Development, Redevelopment, and Construction Sites									
S5.C.4.a.	44	Develop and adopt new or revised ordinance.	The City requires all development/construction projects with more than 1 acre of disturbed soils to develop a stormwater pollution prevention plan (SWPPP) that is reviewed by the City Development Services Department	Identify and adopt new development, redevelopment, and construction requirements that are equivalent to the minimum requirements in Appendix I of the NPDES Phase II permit (i.e. equivalent to the Stormwater Management Manual for Western Washington (Ecology 2005). Adopt a site planning process and BMP selection and design criteria. Develop an approval process for new development that includes inspections.Include provisions for non-structural preventative action and source reduction approaches (LID).		August 15, 2009	Adopt new ordinance before August 2009	Develop and adopt an ordinance that officially adopts the Stormwater Management Manual for Western Washington (Ecology 2005)--either a blanket adoption or adoption of a geographically tailored version. Take a careful look at LID during development of the new ordinance. All LID techniques may not be feasible in all locations.	

Complete NPDES Reference	Annual Report Question Number	Requirement	Current City Practices	Needs	Ecology Deliverable or Documentation in Annual Report	Due Date	Planned Action (If Known)	Other Suggestions	Comments/Questions/Notes
S5.C.4.b.	53, 54	Have a permitting process in place for all sites greater than 1 acre including sites that are less than 1 acre, but are part of a larger development plan.	The City requires all development/construction projects with more than 1 acre of disturbed soils to develop a stormwater pollution prevention plan (SWPPP) that is reviewed by the City Development Services Department The City Development Services Department inspects, prior to clearing and construction, all known development sites that have a high potential for sediment transport The City Development Services Department inspects all known permitted development sites during construction to verify proper installation and maintenance of erosion and sediment control BMPs The City Development Services Department inspects all permitted development sites upon completion of construction to ensure proper installation of permanent stormwater facilities and structural BMPs The City Development Services Department has an enforcement strategy to respond to issues of non-compliance	Review and revise the actual permitting and inspection requirements and procedure to ensure all aspects meet the permit requirements Review/revise the current enforcement strategy Review the inspection record keeping system to determine whether 95 percent of sites are inspected.		August 15, 2009			
S5.C.4.c.	64, 66	Include provisions for long term O&M of stormwater facilities in code revisions.	The City has ordinances that identify ownership, maintenance, repairs, operation, and inspection of private stormwater systems (ECDC 18.30.100 and ECDC 18.30.120) The City has a maintenance inspection program, but is not inspecting all stormwater treatment and flow control facilities on an annual basis The City Engineering technicians currently inspect new flow control and water quality treatment facilities	Develop and adopt ordinance. Revise the facility specific maintenance standards of the maintenance covenant to be equivalent to the Stormwater Management Manual for Western Washington (Ecology 2005) Annual inspections of treatment and flow control facilities permitted by City (unless reduced frequency can be documented). Inspections of all new flow control and water quality treatment facilities	Number of sites inspected, number of structural BMPs inspected, number of enforcement actions taken	August 15, 2009	Require formal maintenance plans and assigned responsibility for maintenance upon completion of construction for permanent stormwater controls such as stormwater facilities and structural BMPs	Increase frequency of stormwater treatment and flow control facility inspections to an annual basis, unless there are maintenance records to justify a different frequency	

Complete NPDES Reference	Annual Report Question Number	Requirement	Current City Practices	Needs	Ecology Deliverable or Documentation in Annual Report	Due Date	Planned Action (If Known)	Other Suggestions	Comments/Questions/Notes
S5.C.4.d.	72	Record keeping procedure (inspection reports, warning letters, notices of violations, other records, projects greater than 1 acre).	The City uses Permit Tracks software to keep records of inspections and enforcement actions by staff, including inspection reports, warning letters, notices of violations, and other enforcement records.	Maintain records of the following program elements: inspection reports, warning letters, notices of violations, enforcement records, maintenance inspections, maintenance activities, and records of all projects that fall under the jursidiction of this ordinance. Annual report requires reporting on the following elements: number of site plan reviews, number of inspections conducted prior to construction, numer of sites inspection during construction, number of enforcement actions for construction erosion control, number of site inspections after construction, number of enforcement actions after construction, number of waivers allowed, number of sites inspected (to review maintainability and enforce maintenance standards), number of structural BMP's inspected (for maintenance requirements), number of enforcement actions (for maintenance), number of trainings provided by the City, and number of City staff trained.		August 15, 2009		Ensure that adequate records are kept to address Ecology reporting requirements.	
S5.C.4.e.	73	Make NOI letters available.	The City Development Services Department has made available copies of the “Notice of Intent for Construction Activity” and copies of the “Notice of Intent for Industrial Activity”						
S5.C.4.f.	74	Verify training of implementation staff	City Engineering inspectors have attended formal workshops and training courses regarding Erosion and Sedimentation Control (ESC) practices and inspections. New inspectors and plan reviewers receive on-the-job training regarding inspection practices, review of ESC practices, and review of permanent stormwater facilities.	Ensure that training records continue to be maintained (permitting, plan review, construction site inspections, and enforcement).	Number of trainings provided and number of staff trained.	August 15, 2009		Develop a training plan and schedule for implementation staff.	

Complete NPDES Reference	Annual Report Question Number	Requirement	Current City Practices	Needs	Ecology Deliverable or Documentation in Annual Report	Due Date	Planned Action (If Known)	Other Suggestions	Comments/Questions/Notes
S5.C.5. Pollution Prevention and Operation and Maintenance for Municipal Operations									
S5.C.5.		Develop and implement O&M Program.	The current O&M Program has limited documentation.	Incorporate current practices and the additional items noted below into a new O&M plan. Implement the plan.		February 15, 2010		Request funding from City council to address additional maintenance staff needs to implement the O&M plan.	
S5.C.5.a.	76, 77	Develop maintenance standards equivalent to the Stormwater Management Manual for Western Washington (Ecology 2005), perform inspections as necessary, and perform maintenance as necessary.	The City currently has maintenance standards (ECDC 18.30.100)	Develop maintenance standards equivalent to the Stormwater Management Manual for Western Washington (Ecology 2005) or adopt Ecology standards	Documentation of maintenance delays, if any	February 15, 2010		Adopt the Stormwater Management Manual for Western Washington (Ecology 2005) requirements. Revise current field inspection forms to include all items required by the Stormwater Management Manual for Western Washington (Ecology 2005). Implement field inspection forms. Develop and implement a procedure for tracking inspection and maintenance.	
S5.C.5.b.	78, 79	Conduct annual inspections of municipal stormwater treatment and flow control facilities (unless reduced frequency can be justified through documentation).		Conduct annual inspections in accordance with the Stormwater Management Manual for Western Washington (Ecology 2005) Volume 5.	Number of facilities known. Number of facilities inspected. Documentation for reduced inspection frequency.	February 15, 2010		Develop an inspection schedule in the O&M plan.	
S5.C.5.c.	80	Conduct spot checks after major storms (24hr-10yr)	The City Storm Crew does spot checks of some potentially damaged permanent stormwater treatment and flow control facilities after major storm events. The City conducts repairs to systems immediately if necessary to protect the public health, safety, welfare, or public resources.	Document all spot checks.	Number of facilities. Number of facilities inspected.	February 15, 2010		Document the requirement for spot checks in the O&M plan. Develop a tool to record spot checks and drainage problems.	
S5.C.5.d.	81	Inspect all catch basins and inlets once during permit term	The City has already inspected all if its catch basins and inlets through the City during this permit cycle. The City will continue routine inspections and can typically cover 70-100 percent of the City's catch basins and inlets annually. Maintenance is performed as needed.		Number of catch basins, number of catch basins inspected, number of catch basins cleaned.	February 15, 2012	Continue current catch basins and inlet inspection cycle unless it can be determined that more/less frequent inspections are necessary.	Develop inspection checklists using the Stormwater Management Manual for Western Washington (Ecology 2005) Volume 5 checklists. Count facilities cleaned last year and add to the annual report. Begin conducting inspections/maintenance as described in the Stormwater Management Manual for Western Washington (Ecology 2005).	
S5.C.5.e.		Establish an inspection program and achieve inspection of 95 percent of all sites	The City will continue routine inspections and can typically cover 70-100 percent of the City's catch basins and inlets annually.	Review the inspection record keeping system to determine whether 95 percent of sites are inspected.				Document the City Inspection Program. Consider incorporating the checklists used by development services into standard maintenance operations. These checklists are currently part of a maintenance covenant attached to each plat document. The checklists will need to be revised slightly to achieve equivalence with the Stormwater Management Manual for Western Washington (Ecology 2005). Develop an inspection schedule that will meet NPDES requirements. Perform inspections. Maintain records of the inspections. Track inspection results using a database and by performing daily data entry.	

Complete NPDES Reference	Annual Report Question Number	Requirement	Current City Practices	Needs	Ecology Deliverable or Documentation in Annual Report	Due Date	Planned Action (If Known)	Other Suggestions	Comments/Questions/Notes
S5.C.5.f.	82	Establish and implement practices to reduce the effect of roadway runoff (e.g. street sweeping).	The City owns two street sweeping and at least one is constantly out in the field year round. Downtown streets are swept once per week on Fridays; arterials are swept bi-monthly; sump areas are targeted in the fall	As part of the O&M program, assess each of the following activities for reducing stormwater impacts: pipe cleaning, cleaning of culverts, ditch maintenance, street cleaning, road repair and resurfacing, snow and ice control, utility installation, pavement striping maintenance, maintaining roadside areas, and dust control.			The City currently has established practices for runoff from streets, parking lots, or highways owned or maintained by the City and road maintenance activities conducted by the City, but needs to formalize these procedures to be in full compliance with the NPDES Phase II permit	Write a formal street sweeping plan and incorporate it into the O&M plan. In O&M plan, document the suggested list of activities, identify which activities from the list are performed by the City, evaluate the cost and benefit of activities that are currently not performed, and select potential options for consideration by City officials.	
S5.C.5.g.	83	Establish and implement policies and procedures to reduce pollutant discharge from all City properties.	The City has established and implemented many policies and procedures to reduce pollutants in discharges from lands owned and maintained by the City	Develop policies and procedures in the O&M plan that address pollution prevention for the following activities: Application of fertilizer, pesticides, and herbicides including the development of nutrient management and integrated pest management plans, sediment and erosion control, landscape maintenance and vegetation disposal, trash management, and building exterior cleaning and maintenance.				Review current City activities to identify existing, potentially undocumented, pollution prevention activities. Document these procedures in the O&M plan. Identify other activities that should have pollution prevention procedures/BMPs and develop these procedures as part of the stormwater program.	
S5.C.5.h.	84	Develop and implement a training program for construction, operations, and maintenance staff.		Develop and implement a training program for employees who's construction, operations, and maintenance job functions may affect stormwater quality.	Number of trainings provided and number of staff trained			Identify appropriate activities and job functions Determine appropriate BMPs Identify appropriate training materials and training approach (e.g., SOP, classroom, on-the-job training) Develop the training requirements and schedule for each applicable job function Provide training Document training	
S5.C.5.i.	85	Develop and implement a SWPPP for all heavy equipment maintenance and storage facilities.	Vehicles are stored and maintained at the Public Works Maintenance Facility.	Develop a SWPPP for all heavy equipment maintenance or storage yards and material storage facilities not covered by the Industrial Stormwater General Permit. Begin implementation of BMPs upon completion of the SWPPP.				Identify facilities that require a SWPPP Inventory these facilities Document current procedures Identify needed procedures and BMPs Develop a schedule and plan for implementing BMPs	
S5.C.5.j.		Maintain records of inspections and maintenance.	The City currently maintains records of catch basin cleaning	In the annual report, Ecology requires documented counts for the following activities: Documentation of maintenance delays, if any. Number treatment and flow control facilities known. Number of treatment and flow control facilities inspected. Documentation for reduced inspection frequency (if pursued by the City). Number of facilities and number of facilities spot checked after a storm event equal or greater than the 24hour-10year storm. Number of catch basins, number of catch basins inspected, number of catch basins cleaned. Number of trainings provided and number of staff trained				Develop a tool for tracking the required O&M records	

Complete NPDES Reference	Annual Report Question Number	Requirement	Current City Practices	Needs	Ecology Deliverable or Documentation in Annual Report	Due Date	Planned Action (If Known)	Other Suggestions	Comments/Questions/Notes
S6.Stormwater Management Program for Secondary Permittees									
Not Applicable									
S7.Compliance with Total Maximum Daily Load Requirements									
S7.A. Comply with TMDL requirements									
Not Applicable									
S8.Monitoring									
S8.A. Monitoring									
S8.A.1.		Not Applicable							
S8.A.2.		Conduct sampling required for IDDE (See S5.C.3.)							
S8.B. Reporting									
S8.B.		A description of stormwater monitoring (for annual report).		Prepare a brief description of any stormwater monitoring that was conducted, including the type of information gathered or received.	Description of any monitoring information gathered/ received for the annual report.	March 31 of each year			
S8.B.		An assessment of BMPs and summary of expected changes		Assess the appropriateness of BMP's identified by the SWMP. Describe any changes made to these BMPs. Prepare a document that summarizes the appropriateness of BMPs and any anticipated changes.	An assessment of BMP appropriateness and expected changes for annual report	March 31 of each year			
S8.B.		Information in S8.C.2 (monitoring program reporting requirements)		See S8.C.2.	See S8.C.2.				
S8.C. Preparation for future Long-term Monitoring									
S8.C.1.a.		Identify two outfall or conveyance locations suitable for long term monitoring (one commercial and one high density residential)		Identify two outfall or conveyance locations suitable for long term monitoring (one commercial and one high density residential)		December 31, 2010			Requirement for Cities with population between 10,000 and 75,000
S8.C.1.b.		Prepare to monitor the effectiveness of the SWMP Identify two suitable questions to monitor for and select sites to monitor Develop a monitoring plan		Identify two suitable questions to monitor for and select sites to monitor		December 31, 2010			
S8.C.2.a.		Describe status of stormwater site identification Summarize questions from S8.C.1.b.ii. and describe monitoring plan status		Prepare a description of the status of stormwater monitoring site identification. Prepare a summary of the required questions for the SWMP effectiveness monitoring. Prepare a description of the status of monitoring plan development, including proposed purpose, design, and methods.	Description of stormwater monitoring site identification status. Summary of monitoring questions and monitoring plan development.	March 31, 2011			
S8.C.2.b.		All portions of section S8. may be submitted on collaborative reports with other MS4s						The City may consider a collaborative monitoring report.	

Complete NPDES Reference	Annual Report Question Number	Requirement	Current City Practices	Needs	Ecology Deliverable or Documentation in Annual Report	Due Date	Planned Action (If Known)	Other Suggestions	Comments/Questions/Notes
S9.Reporting Requirements									
S9.A.	1	Submit annual report		Complete the annual report Complete a SWMP status update	Annual Report	March 31 of each year			
S9.B.		Submit two hard copies and one electronic copy							
S9.C.		Maintain permit related records for 5 years. With the exception of annual report documentation, documentation is only required upon request from Ecology.							
S9.D.		Make Annual report, supporting docs, and SWMP available to the public							
S9.E. Annual report components									
S9.E.1.		Provide Ecology with a copy of current SWMP		Develop a document that describes the current SWMP revision process to meet requirements in S5	Copy of the current SWMP	March 31 of each year			
S9.E.2.		Provide Ecology with a completed copy of Appendix 3 and supporting documentation.		Complete a copy of Appendix 3. The Annual Report may also include documentation that covers the following items: The status of implementation of each component of the SWMP in section S5 An assessment of progress towards meeting minimum performance standards for minimum control measures A description of activities being implemented to comply with each component of the SWMP SWMP implementation schedule A summary of the permittee's evaluation of their SWMP (also see S5.A.4. and S.5.B.2) Updated information from the prior annual report and any new monitoring information Certification and signature (See G19.D and G19.C)	Completed copy of Appendix 3	March 31 of each year			
S9.E.3.	2	Notification of annexation		Document any annexations and prepare the documentation to submit in the annual report	Documentation of annexations	March 31 of each year			
S9.F.		Not Applicable							

Notes:
If no deadline is given, August 19, 2011 can be assumed. This is the deadline for development and implementation of the revised SWMP.

APPENDIX C

Resolution No. 1220 – Public Participation Plan

0006.90000
WSS/nkr
01-12-10 nkr

RESOLUTION NO. 1220

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF EDMONDS, WASHINGTON, APPROVING PUBLIC PARTICIPATION PLANS FOR THE 2010 PROCESSES RELATING TO THE UPDATES OF THE UTILITIES ELEMENT, COMPREHENSIVE STORM AND SURFACE WATER PLAN, COMPREHENSIVE WATER PLAN, AND COMPREHENSIVE SEWER PLAN (INFILTRATION AND FLOW STUDY), ALL ELEMENTS OF THE EDMONDS COMPREHENSIVE PLAN.

WHEREAS, the City Council has adopted a general outline for public participation with regard to the adoption and amendment of its Comprehensive Plan elements, and,

WHEREAS, the staff has recommended a process relating to the 2010 update and amendments of the Utilities Element, Comprehensive Storm and Surface Water Plan, Comprehensive Water Plan, and Comprehensive Sewer Plan (Infiltration and Flow Study), all elements of the Edmonds Comprehensive Plan, and

WHEREAS, a copy of the Public Participation Plan is attached hereto as Exhibit A and incorporated by this reference as fully as if herein set forth, and

WHEREAS, the City Council finds the provisions to comply with its prior direction and the provisions of state law, Now Therefore,

THE CITY COUNCIL OF THE CITY OF EDMONDS, WASHINGTON, HEREBY RESOLVES AS FOLLOWS:

Section 1. The Public Participation Plan for the 2010 Comprehensive Plan updates and amendments to the Utilities Element, Comprehensive Storm and Surface Water Plan, Comprehensive Water Plan, and Comprehensive Sewer Plan (Infiltration and Flow Study), all elements of the Edmonds Comprehensive Plan, attached hereto as Exhibit A and incorporated by this reference as fully as if herein set forth, is hereby approved.

RESOLVED this 19th day of January, 2010.

APPROVED:

MAYOR, GARY HAAKENSON

ATTEST/AUTHENTICATED:

CITY CLERK, SANDRA S. CHASE

FILED WITH THE CITY CLERK: 01-15-2010
PASSED BY THE CITY COUNCIL: 01-19-2010
RESOLUTION NO. 1220

Exhibit A

2010 Comprehensive Plan Amendments
Public Participation Plan

This Public Participation Plan covers the following plan amendments which are proposed for consideration and adoption in 2010:

- Update to the Utilities Element consolidating utility policies and the following specific plan updates:
  - 2010 Comprehensive Storm and Surface Water Plan Update
  - 2010 Comprehensive Water Plan Update
  - 2010 Sewer Plan Infiltration and Inflow Study with Policy Recommendation for the Comprehensive Sewer Plan

A. Public Participation Goal
It is the goal of the City of Edmonds to provide early and continuous public notice for the proposed comprehensive plan amendments in advance of all opportunities to comment on the proposals, and to allow those who express an interest in any of the amendments to be able to track their progress through the legislative decision process.

B. Timing of Amendments
In order to provide adequate time for public comment to be heard and responded to, and due to logistic considerations, the Edmonds Planning Board and City Council will hold separate hearings on each plan amendment proposal. However, the City Council will consider and adopt the amendments described here, along with those amendments subject to other adopted public participation process(es), at one public meeting, which will occur during the final quarter of 2010. All public meetings will be advertised according to methods and standards described in this participation plan.

C. Participation Methods
The City of Edmonds will use the following methods to provide early and ongoing public notice of the proposed amendments.

1. Publishing notice of public meetings (including public hearings) in the Everett Herald, a newspaper of general circulation within the City.
2. Advertising public meetings and hearings on the local public access television channel, Channel 21.
3. Placing notices in the City newsletter, which is available online via the City website.
4. Compiling a mailing list of all interested parties, and sending notices of meetings and hearings to all those on the mailing list. Two types of lists will be maintained: an email list and a list of postal addresses. It is the choice of the individual as to which list they wish to be placed on.

5. Using the City's website (www.ci.edmonds.wa.us) to track progress, provide draft documents and plans, and provide information on how to comment or be added to a mailing list for the proposals.

D. Participation Standards

Information provided by the City of Edmonds as part of this public participation process will be designed to:

1. Use plain understandable language.
2. Provide broad dissemination of information regarding the proposals.
3. Provide early and continuous notification.
4. Provide opportunities for commenting in a variety of ways – verbally, in writing, and via email.

E. Formal Public Hearings

In addition to providing early and continuous information on the plan amendment proposals, the City of Edmonds will provide a formal adoption process with public hearings as follows:

1. The initial public hearing will take place with the Edmonds Planning Board. This is the first opportunity for formal public testimony on draft plan amendments. Public notice will be provided at least two weeks prior to the date of the hearing, via the methods described in Section B, above. Information on the documents and plans being considered will be available for free via the City's website, and printed documents may also be purchased at the cost of duplication, upon request. The Planning Board conclude its hearing(s) before making a recommendation to the City Council regarding the proposals.
2. The draft plan amendments will be considered in a public hearing before the City Council, along with the recommendations of the Planning Board. Public notice will be provided at least two weeks prior to the date of the hearing, via the methods described in Section B, above. Information on the documents and plans being considered will be available for free via the City's website, and printed documents may also be purchased at the cost of duplication, upon request.

F. Contact Information

Information on the update of these documents can be found at:

Mail:
City of Edmonds Engineering Division
121 5th Avenue North
Edmonds, WA 98020

Phone:
425-771-0220

Website:
http://www.ci.edmonds.wa.us

APPENDIX D

Applicable Regulations

Applicable Regulations and Policies

Introduction

This appendix summarizes regulations related to surface water management, water quality, flood protection, and habitat protection that affect the City of Edmonds' (City) surface water management program. Future surface water management requirements and regulations are also briefly discussed.

Federal and state regulations drive many aspects of the City stormwater management program. Recent significant regulatory changes, initiated by the Federal Water Pollution Control Act of 1972 (the Clean Water Act), include:

- Revised state water quality standards
- National Pollutant Discharge Elimination System (NPDES) municipal stormwater permit requirements
- Total maximum daily load (TMDL) cleanup action requirements for water bodies, on the Washington State Department of Ecology's Clean Water Act Section 303(d) list due to significant water quality degradation

Additional federal regulations that apply to the City's surface water management program include the National Flood Insurance Program (NFIP), administered by the Federal Emergency Management Act (FEMA) and the following listings related to the federal Endangered Species Act (ESA):

- Listing of Puget Sound Chinook salmon as threatened
- Listing of the Coastal-Puget Sound bull trout as threatened
- Listing of the Puget Sound steelhead as threatened
- Listing of the Southern Resident killer whale as endangered

Current Regulations and Regulatory Policies

Stormwater Management Program

Section 402 of the Clean Water Act requires some municipalities to obtain an NPDES permit for municipal stormwater discharges to receiving waters. In Washington State, the Department of Ecology (Ecology) is responsible for issuing and renewing these permits.

Discharges from municipal separate storm sewer systems ("MS4s") are regulated by Ecology under the NPDES program. An MS4 is a system designed to collect and convey stormwater runoff (such as from road drainage, constructed channels, and neighborhood storm drains). The municipal NPDES permit program seeks to control or reduce pollutant discharge to the maximum extent practicable, through primarily programmatic efforts.

The City is listed as a *small* MS4 in the Western Washington Phase II (NPDES) Municipal Stormwater Permit, and is regulated by Ecology as a permittee. The NPDES Phase II Permit became effective for the City and numerous other jurisdictions in western Washington on February 16, 2007.

The NPDES Phase II permit has nine special conditions (S1 through S9) and 21 general conditions (G1 through G21). Special requirements for the City's stormwater management program are presented under special condition 5 (S5) of the permit and are summarized below. The City is currently not subject to any TMDLs listed in special condition 7 (S7) or Appendix 2 of the NPDES Phase II permit. The permit was modified on June 17, 2009. Modifications include the extension of permit deadlines and requirements for the City to identify barriers to low impact development (LID) and develop a plan for implementing LID more broadly in the future.

S5. Stormwater Management Program for Cities, Towns, and Counties

- Develop and implement a stormwater management program that meets NPDES permit requirements by August 19, 2011
- Prepare and maintain written documentation of the stormwater management program
- Gather, track, and maintain information to evaluate stormwater management program implementation
- Incorporate mechanisms for interjurisdictional and interdepartmental coordination
- Design the stormwater management program to reduce discharge of pollutants to the maximum extent practicable; meet all known, available, and reasonable methods of prevention, control and treatment (AKART) requirements; and protect water quality
- Address the following components in the stormwater management program:
    - Public education and outreach
    - Public involvement and participation
    - Illicit discharge detection and elimination
    - Controlling runoff from new development, redevelopment, and construction sites
    - Pollution prevention and operation and maintenance for municipal operations

Applicability

The NPDES Phase II permit became effective for the City on February 15, 2007. The City must comply with all permit requirements by February 16, 2012.

Puget Sound Water Quality Management Plan and Action Agenda

The Puget Sound Partnership was established by Washington state statute in 1983 as the Puget Sound Water Quality Authority, later becoming the Puget Sound Action Team and eventually the Puget Sound Partnership in 2007. The Puget Sound Water Quality Authority was directed to identify pollution-related threats to Puget Sound's resources, conduct risk assessments, and coordinate and report on information relating to water quality in Puget Sound. The Puget Sound Water Quality Management Plan, first drafted in 1987, was last updated in 2001 for the period from 2001 through 2003 (PSAT 2000). The management plan was used to direct the work activities of the Action Team and to budget for addressing priority measures to restore and protect the health and diversity of the Sound.

In December 2008, the Puget Sound Partnership published an Action Agenda for restoration and protection of Puget Sound which was revised in May 2009 (PSP 2009). This sweeping document supersedes the previous water quality management plan, encompassing a wider range of ecological (including water quality), social, and economic issues. The Action Agenda calls on all governments and citizens in the Puget Sound basin to support its priorities and initiatives.

Applicability

A key theme of the Action Agenda is stormwater pollution. The Action Agenda and other work by the Puget Sound Partnership is not legally binding on the City. However, because the City is located within the Puget Sound drainage, many of the provisions of the Partnership's plan will affect the decisions of regulatory authorities in the region, indirectly affecting the City's stormwater management program.

Water Quality

Various federal and state laws related to water and sediment quality significantly affect stormwater management in the City. The primary regulatory influences are the federal Clean Water Act and several state-administered water quality programs, including Ecology's surface water quality standards set forth in Washington Administrative Code (WAC) section 173-201A and TMDLs that may be implemented in the near future to address water quality management for surface water bodies listed on the State's Clean Water Act Section 303(d) list.

State Surface Water Quality Standards

Surface water quality standards describe the quality of water expected to support beneficial surface water uses. Section 303(c) of the Clean Water Act states that water quality standards are the responsibility of states and qualified tribes. Ecology administers water quality standards in

Washington state to be "consistent with public health and public enjoyment of the waters and the propagation and protection of fish, shellfish, and wildlife" (WAC 173-201A).

Effective July 2003, Ecology restructured its surface water quality standards to more explicitly define water quality requirements for aquatic life, recreation, water supply, and other miscellaneous uses. For example, designated uses for aquatic life include: *char spawning and rearing*; *core summer salmonid habitat; salmonid spawning, rearing, and migration*; *salmonid rearing and migration only*; *non-anadromous interior redband trout;* and *indigenous warm water species.* There are now 18 designated uses in WAC 173-201A, and Ecology has established water quality criteria (such as maximum temperature and bacteria levels) for each of them.

Applicability

The City is responsible for regulating surface water discharges to receiving waters in its jurisdiction to meet Ecology's surface water quality standards. None of the water bodies in the City or downstream of the City are explicitly addressed in Ecology's water quality standards. However, in accordance with the NPDES Phase II permit, the City needs to manage stormwater discharges from its municipal drainage systems in a manner that supports achieving the water quality standards for all surface waters to the best of its ability.

TMDLs for Degraded Water Bodies

Ecology is required to establish a TMDL for each pollutant identified in each impaired water body on the Section 303(d) list. TMDL's represent the daily limit on pollutants the water body can contain while still complying with water quality standards. A TMDL is established with the use of data and modeling. The TMDL is then divided among all point source polluters and nonpoint sources of the pollutant in the tributary drainage area. The TMDL typically includes a margin of safety and accounts for future growth.

Ecology can limit pollutant discharge by prioritizing a TMDL allocation for the listed surface water or by using mechanisms such as the municipal NPDES permit program to establish water quality control requirements for individual drainage basins. This could lead to mandatory limits on human activities in that basin.

Puget Sound TMDL

Portions of North Central Puget Sound near the City are on Ecology's Section 303(d) list of impaired waters for fecal coliform bacteria (Ecology 2010); however, a TMDL implementation plan has not yet been developed for these areas. All water bodies on the state's Section 303(d) list are required to have TMDL's by 2013 in order to comply with a 1997 agreement between the U.S. Environmental Protection Agency and Ecology.

Lake Ballinger TMDL

A TMDL for phosphorus and a Quality Assurance Project Plan has been established for long-term monitoring of Lake Ballinger. The TMDL implementation plan was first prepared in 1993. In 2008, Ecology published a Water Quality Attainment Monitoring Report stating that the Lake Ballinger TMDL of 30 micrograms per liter (µg/L) was currently being met and that restoration efforts had been successful (Ecology 2008).

Applicability

Portions of North Central Puget Sound near the City are listed on the State's 303(d) list of threatened and impaired surface water bodies due to high levels of fecal coliform bacteria. Though there is currently not a TMDL implementation plan in place for these portions of Puget Sound, the City should consider activities and local requirements that could reduce fecal coliform bacteria loading to Puget Sound and position the City to take action if a TMDL is developed in the future.

In 1971, the City was a signatory party to an interlocal agreement to clean up Lake Ballinger. While the phosphorus concentration in Lake Ballinger continues to meet the TMDL set forth by Ecology in 1993, the City should still seek to reduce phosphorus loading in runoff within its jurisdiction to preserve the long-term water quality of Lake Ballinger.

Flood Protection

The U.S. Congress established the National Flood Insurance Program (NFIP) with the passage of the National Flood Insurance Act of 1968. The NFIP is a federal program enabling property owners in participating communities to purchase insurance as protection against flood losses, in exchange for floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between local communities and the federal government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk for new construction, the federal government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods. The Federal Emergency Management Agency (FEMA) is currently responsible for the NFIP.

Applicability

Section 1315 of the National Flood Insurance Act prohibits FEMA from providing flood insurance unless a community adopts and enforces floodplain management regulations that meet or exceed floodplain management criteria established under Section 1361(c) of the act. These floodplain management criteria are specified in the Code of Federal Regulations (CFR), Title 44, Part 60, Criteria for Land Management and Use. The emphasis of the National Flood Insurance Program (NFIP) floodplain management requirements is focused on reducing threats to lives and the potential for damages to property in flood-prone areas.

In addition to providing flood insurance and reducing flood damages through floodplain management regulations, the NFIP identifies and maps the nation's floodplains. Mapping of floodplains creates broad-based awareness of the flood hazards and provides the data needed for floodplain management programs and for determining flood insurance rates for new construction.

The City complies with the NFIP with a flood control ordinance and explicit code requirements for development in flood hazard areas. The City currently manages floodplain hazards through its Frequently Flooded Areas code (Chapter 23.70), which address areas of special flood hazard as identified by the Federal Insurance Administration in "The Flood Insurance Study for Snohomish County, Washington and Incorporated Areas," dated September 16, 2005. The flood insurance study and flood insurance rate map are on file at the City. Mapped floodplains in the City include flood hazard areas along the Edmonds Marsh and the southwest corner of Lake Ballinger.

Species and Habitat Protection

The Endangered Species Act

The Endangered Species Act (ESA) is a federal act administered by the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) (i.e., the Services) that provides for protection of species determined to be threatened or endangered of becoming extinct, and their habitat (i.e., critical habitat). The USFWS is responsible for predominant freshwater species (e.g., Puget Sound bull trout), terrestrial wildlife, and plants, whereas NOAA Fisheries is responsible for predominant marine species (e.g., Puget Sound Chinook). The Services consider a species *endangered* when it is "in danger of extinction throughout all or a significant portion of its range" and *threatened* when it is "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."

The ESA prohibits *take* of listed species defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct." *Take* also includes "significant modification or degradation of critical habitat." The *take* prohibition applies to all persons including private citizens and federal, state, and local government entities. Proponents of activities with a federal nexus (e.g., carried out by a federal agency, federally funded, or require a federal permit) are required to consult with the Services according to Section 7 of the ESA unless they are exempted according to a Section 4(d) rule as discussed below.

For species listed as endangered, Section 9 *take* prohibitions are applied. The Services protect threatened species through a more flexible ESA Section 4(d) rule that prohibits *take*. On July 10, 2000, NOAA Fisheries published a final rule under Section 4(d), which prohibits actions that *take* of Puget Sound salmon species listed as threatened. On September 25, 2008, NOAA Fisheries included Puget Sound steelhead within this rule based on its recent listing as threatened. The rule follows the standard practice of prohibiting the *take* of a threatened species without written authorization. However, the rule does not prohibit all *take.* The rule exempts certain activities from *take* prohibitions if the *take* occurs as the result of a program approved by

NOAA Fisheries that adequately protects listed species and their habitat. NOAA Fisheries specifies 13 categories of activities that can limit the situations in which *take* prohibitions apply, known as 4(d) limits. By providing limitation from *take* liability, NOAA Fisheries encourages governments and private citizens to adjust their programs and activities to be "salmon safe."

Applicability

In the vicinity of the City, the Services have listed the following species as threatened or endangered: Puget Sound Chinook salmon, Puget Sound steelhead, Coastal-Puget Sound bull trout, and Southern Resident killer whale. Furthermore, the Puget Sound has been listed as critical habitat for listed species. According to the Washington Department of Fish and Wildlife (WDFW), there is no evidence of listed fish species occurring within City streams. This is primarily attributable to the small size (flow rate and length) of these streams, as well as the limited (urbanized) habitat conditions. However, this does eliminate the potential for *take* because City streams and stormwater systems flow into Puget Sound where listed species are present and therefore could result in *take*.

For example, although not listed as threatened by the Services, Puget Sound coho salmon occurs in City streams and are potential prey species for listed species such as bull trout, Chinook, and steelhead. Activities adversely affecting coho salmon or other prey species could result in an indirect *take* of listed species. Activities potentially affecting the water quality or habitat of the streams in the City or the adjacent Puget Sound could trigger ESA protections and necessary consultation with the Services. If additional species are subsequently listed under the ESA, activities in areas used by these species for rearing, foraging, and migration within the City's jurisdiction could trigger ESA consultations.

Municipalities such as the City have the option to seek coverage under an existing 4(d) limit, but are not required to do so. One of the limitations on *take* prohibitions contained in the 4(d) rule that the City could pursue for approval by NOAA Fisheries is Limit 12 – Municipal, Residential, Commercial and Industrial (MRCI) Development and Redevelopment (MRCI). The 4(d) rule recognizes that MRCI development and redevelopment has a significant potential to degrade habitat and injure or kill salmon and steelhead in a variety of ways. In support of coverage under the 4(d) rule, the City could adopt MRCI development ordinances that adequately protect listed species and their habitat. NOAA Fisheries would individually apply the following 12 evaluation considerations when determining whether MRCI development ordinances or plans adequately conserve listed fish (NOAA 2000).

1. An MRCI development ordinance or plan ensures that development will avoid inappropriate areas such as unstable slopes, wetlands, areas of high habitat value, and similarly constrained sites.

2. An MRCI development ordinance or plan adequately prevents stormwater discharge impacts on water quality and quantity and stream flow patterns in the watershed – including peak and base flows in perennial streams.

3. An MRCI development ordinance or plan protects riparian areas well enough to attain or maintain Proper Functioning Condition (PFC), habitat that provided for the biological requirements of the fish, around all rivers, estuaries, streams, lakes, deepwater habitats, and intermittent streams.

4. An MRCI development ordinance or plan avoids stream crossings – whether by roads, utilities, or other linear development – wherever possible and, where crossings must be provided, minimize impacts.

5. An MRCI development ordinance or plan adequately protects historic stream meander patterns and channel migration zones and avoids hardening stream banks and shorelines.

6. An MRCI development ordinance or plan adequately protects wetlands, wetland buffers, and wetland function – including isolated wetlands.

7. An MRCI development ordinance adequately preserves permanent and intermittent streams' ability to pass peak flows.

8. An MRCI development ordinance or plan stresses landscaping with native vegetation to reduce the need to water and apply herbicides, pesticides, and fertilizer.

9. An MRCI development ordinance or plan contains provisions to prevent erosion and sediment runoff during (and after) construction and thus prevent sediment and pollutant discharge to streams, wetlands, and other water bodies that support listed fish.

10. An MRCI development ordinance or plan ensures that demands on the water supply can be met without affecting either directly or through groundwater withdrawals – the flows salmon need.

11. An MRCI development ordinance or plan provides mechanisms or monitoring, enforcing, funding, reporting, and implementing its program.

12. An MRCI development ordinance or plan complies with all other State and federal environmental and natural resource laws and permits.

Without coverage under a Section 4(d) limit, consultation with the Services is required for activities with a federal nexus (e.g., carried out by a federal agency, federally funded, or require a federal permit) proposed by the City, other government entities, or individuals, that could directly or indirectly modify critical habitat, or kill or injure listed species. Specific examples include:

- Constructing or maintaining barriers that eliminate or impede a listed species' access to habitat essential for its survival or recovery
- Removing, poisoning, or contaminating plants, fish, wildlife, or other biota required by the listed species for feeding, sheltering, or other essential functions
- Discharging pollutants (including those in stormwater runoff) into a listed species' habitat
- Removing or altering rocks, soil, gravel, vegetation, or other physical structures that are essential to the integrity and function of a listed species' habitat
- Removing water or otherwise altering streamflow when it is likely to impair spawning, migration, or other essential functions
- Releasing non-indigenous or artificially propagated individuals into a listed species' habitat
- Constructing or operating inadequate fish screens or fish passage facilities at dams or water diversion structures in a listed species' habitat
- Constructing or using inadequate bridges, roads, or trails on stream banks or unstable hill slopes adjacent or above a listed species' habitat
- Constructing or using inadequate pipes, tanks, or storage devices containing toxic substances, where the release of such a substance is likely to significantly modify or degrade listed species' habitat
- Conducting timber harvest, grazing, mining or other land use activities that increase sediment loading to streams
- Disturbing streambeds so as to trample eggs or trap adult fish preparing to spawn
- Altering lands or waters in a manner that promotes unusual concentrations of predators
- Shoreline and riparian disturbances that retard or prevent the development of habitat conditions upon which listed species depend
- Filling or isolating side channels, ponds and intermittent waters upon which listed species depend for refuge during high flows

Many of these activities are applicable to the City, either because the City is engaged in them or writes permits for private developments to engage in them.

The City does not have specific regulations addressing ESA. In enforcing the State Environmental Policy Act (SEPA), the City prompts applicants to identify ESA species in their project area. This does not require analysis to determine the potential for a project to result in a *take* of listed species if they are determined to be present in the vicinity of a proposed project. Project proponents with a federal nexus may be required to assess the project's potential impact on listed species and critical habitat in greater detail, and may be required to write a Biological Assessment report in support of consultation with the Services. The City code does contain protections for Fish and Wildlife Habitat Conservation Areas (Chapter 23.90), but these regulations do not ensure ESA compliance.

The following are examples of actions that may trigger impacts on ESA-listed species:

- Grading of a site
- Clearing of a site
- Work below the ordinary high watermark of any wetlands or creeks that have ESA listed species present, ESA species habitat, or drain to watercourses that have habitat for ESA listed species
- Installation of additional impervious surfaces
- Discharge of stormwater to watercourses that have ESA listed species, ESA species habitat, or drain to watercourses that have habitat for ESA listed species
- Processing, handling, storage, or treatment of hazardous substances in the vicinity of ESA listed species or their habitat
- Withdrawal, interception, or injection of groundwater
- Landscaping or reoccurring activities that require the application of herbicides, pesticides, and fertilizers
- Physical alterations to a watercourse or its banks

State Salmon Recovery Act

The State has responded to the ESA listings described above by enacting legislation authorizing (but not requiring) local governments and other stakeholders to take certain actions to promote salmon recovery. The Washington state legislature established the Salmon Recovery Act (RCW 77.85) through House Bill 2496 for the improvement and recovery of salmonid fish runs

throughout the state. This act established a Salmon Recovery Office within the Office of the Governor to coordinate a state strategy for salmon recovery to healthy sustainable population levels with the purpose of coordinating and assisting the development of salmon recovery plans.

Applicability

The Salmon Recovery Act authorizes a lead entity (a county, city, conservation district, special district, tribal government, or other entity) in a water resource inventory area (WRIA) to establish a committee to develop local watershed projects that address habitat concerns. The role of the committee is to compile a list of projects, prioritize project implementation, establish priorities for individual projects, and submit the list to the Salmon Recovery Funding Board (SRF Board) for funding.

The City is a member of the WRIA 8 salmon recovery council along with 26 other local governments (King County 2005). The City is also participating in watershed planning and restoration efforts within WRIA 8 (Lake Washington/Cedar/Sammamish River). Specific efforts are focused in the Lake Ballinger watershed in cooperation with Snohomish County and surrounding cities.

Growth Management Act

The Growth Management Act (GMA) was passed by the Washington state legislature in 1990. The GMA was enacted in response to rapid population growth and concerns about suburban sprawl, environmental protection, and quality of life. The GMA has been amended several times and is codified primarily in Chapter 36.70A of the Revised Code of Washington. Under the requirements of Section 4 of the GMA, the City must develop and adopt comprehensive plans and development regulations that prevent the adverse effects of uncontrolled development and poor land use practices. One of the key directives of the GMA is to use “best available science” to support effective land use planning that can avert environmental degradation.

Applicability

The GMA provides a framework for regional coordination. To satisfy GMA requirements, the City’s comprehensive planning must include the following elements: land use, housing, capital facilities, utilities, and transportation. The City’s planning must be consistent with Snohomish County’s planning efforts and growth management policies. The City is ineligible to receive state or federal funds if it is not compliant with the GMA. The City’s stormwater management program supports the City’s overall Comprehensive Plan, which addresses GMA compliance issues.

Evolving Regulations and Policies

The City faces several evolving regulations relevant to stormwater management. These regulations are expected to increase the City’s obligations to protect water quality and fish

habitat, increase monitoring requirements, and require greater integration and coordination between programs aimed at improving environmental protection. This section summarizes regulatory policies and requirements that the City will need to accommodate in its ongoing stormwater management program.

NPDES Phase II Permit Conditions

As described previously, the City must comply with Ecology's NPDES Phase II Municipal Stormwater Permit. The specific permit requirements imposed on the City are described in Appendix B, Gap Analysis and Needs Assessment Report (Herrera 2009). The current permit expires in February 2012, at which time a new permit will be developed and enforced by Ecology. The updated permit is likely to contain many of the same conditions as in the current permit, and is expected to include additional requirements, such as water quality monitoring requirements. Thus, there is a distinct possibility that the City's stormwater management program will need to be even stronger and more comprehensive in 2012 and beyond.

Low Impact Development Requirements

At the time this Surface Water Management Comprehensive Plan was written, Ecology was in the process of revising the NPDES Phase II permit for Western Washington to include definitive expectations of permittees regarding implementing LID techniques. A Washington State Pollution Control Hearings Board (PCHB) ruling in February 2009 directed Ecology to "…modify the permit to require permittees to identify barriers to implementation of LID and identify actions taken to remove those barriers, to establish goals regarding the future use of LID, and to require other specific actions on reasonable and flexible time frames…" It was concluded that more specific LID requirements should be incorporated in future NPDES Phase II permits; however, the only additional LID requirements added to the revised permit were two reporting requirements added to the March 31, 2011 annual report including:

- A summary of identified barriers to the use of LID within the area covered by the permit and measures to address the barriers. Each individual Permittee must complete this summary.
- A report completed by an individual Permittee or in cooperation with multiple Permittees describing, at a minimum:
  - LID practices that are currently available and that can reasonably be implemented within this permit term
  - Potential or planned non-structural actions and LID techniques to prevent stormwater impacts
  - Goals and metrics to identify, promote, and measure LID use
  - Potential or planned schedules for the Permittee(s) to require and implement the non-structural and LID techniques on a broader scale in the future

Lake Ballinger Watershed Action Plan

Increasing attention is being given to water quality and flooding problems upstream, downstream, and within Lake Ballinger. In 2008, jurisdictions around Lake Ballinger formed the Hall Lake, Hall Creek, Chase Lake, Echo Lake, Lake Ballinger, McAleer Creek Watershed Forum. The Forum includes representatives from the cities of Edmonds, Lake Forest Park, Lynnwood, Mountlake Terrace, Shoreline, and Snohomish County. Using grant money from the Ecology, the Forum contracted with a consultant team to develop a strategic action plan for the watershed. The strategic action plan included four identified water resource related issues (Otak et al. 2009):

- Issue A—Lake Ballinger/Hall Creek: Flooding
- Issue B—Lake Ballinger: Water Quality/Habitat
- Issue C—McAleer Creek: Downstream Flooding
- Issue D—McAleer Creek: Downstream Water Quality/Habitat

Implementation priorities for each of the watershed issues include the following (Otak et al. 2009):

- Issue A – Floodproofing of homes at south end of lake (privately initiated), weir modification, FEMA floodplain boundary mapping at the lake

- Issue B – Enhance water quality protection activities in compliance with NPDES Phase II permit and TMDL, restart operation of hypolimnetic pipe system, water quality/habitat enhancement plan, LID retrofits of existing infrastructure

- Issue C – Culvert replacement and associated channel widening on McAleer Creek, prevent Lyon Creek flows from entering McAleer Creek, floodproofing structures on lower McAleer Creek (privately initiated), FEMA floodplain boundary mapping at Sheridan Beach

- Issue D – Enhance water quality protection activities in compliance with the NPDES Phase II permit, remove barriers to fish passage on McAleer Creek, LID retrofits of existing infrastructure

Implementation priorities are not identified specifically for the City of Edmonds, but the strategic action plan does state that ongoing activities associated with NPDES Phase II permit compliance (i.e., increased street sweeping, catch basin cleaning, facility inspections, illicit discharge programs, public education, and updating stormwater codes) should be beneficial for Lake Ballinger. The strategic action plan also states that each jurisdiction in the Forum will need to contribute financially for the ongoing work regarding Lake Ballinger.

The strategic action plan also mentioned the City-wide infiltration and inflow (I/I) study of its sanitary sewer system that started in 2009 and is ongoing. The west side of Lake Ballinger was at the top of the priority list for detection and repair/replacement of any problem areas.

Future Listings and Critical Habitat Designations under the Endangered Species Act

NOAA Fisheries is in the process of completing the designation of critical habitat for Puget Sound steelhead. The Dolly Varden (*Salvelinus malma*) is identified by NOAA Fisheries as proposed for listing as threatened in Washington State due to its similarity of appearance to bull trout.

If a change in ESA listing occurs, and areas used as species habitat are identified in the City's jurisdiction, it could require changes in City policies and programs, including (but not limited to) road maintenance practices, stormwater treatment, maintenance of storm drainage facilities, monitoring of water quality and flow, and watershed programs.

At this time, the City should closely monitor the status of other salmonid populations (e.g., coho salmon) in the Puget Sound area, in addition to regulations addressing prey species for listed salmonids such as surf smelt (*Hypomesus pretiosus*), Pacific herring (*Clupea harengus pallasi*), or sand lance (*Ammodytes hexapterus*). The City should be prepared to comply with ESA if other salmon or marine forage fish are listed.

Puget Sound Partnership

The Puget Sound Partnership is a collective effort of citizens, governments, tribes, scientists, and businesses working together to restore and protect the Puget Sound. The governor and legislature requested that the PSP create a strong Action Agenda that leads to a healthy Puget Sound by 2020. As noted above, the Action Agenda produced in December 2008 (and revised in May 2009) prioritizes a variety of actions and policies to be coordinated amongst a broad array of federal, state, local, and tribal agencies and private entities. Decisions will be based on science, focusing on actions that have the biggest impact, and hold people and organizations accountable for results. The City is located in the South Central Puget Sound Action Area which includes the following priority action area strategies (PSP 2009):

A. Protect intact ecosystem processes, structure, and functions

- Growth and development: Implement Vision 2040 Plan
- Protect high value habitat
- Protect and conserve water flows; promote water conservation and reclaimed water use
- Protect and support long-term stewardship of working farms, forests, and shellfish farms.

B. Restore ecosystem processes, structures, and functions

- ☐ Implement priority ecosystem restoration projects (includes implementing Salmon Recovery 3year work plans for WRIA 8)
- ☐ Implement large-scale floodplain reconnection projects to restore habitat and protect public safety

C. Reduce sources of water pollution

- ☐ Prevent pollution through coordinated implementation of existing clean water plans and watershed management plans; maintain spill response efforts
- ☐ Manage stormwater runoff by implementing significant stormwater retrofits, LID strategies, and NPDES permits
- ☐ Manage on-site sewage systems (includes implementing Snohomish County's onsite management plans)
- ☐ Prioritize inwater and upland toxic cleanup sites

D. Work effectively and efficiently together on priority actions

E. Implement the Action Agenda (includes building on education and outreach program developed by the STORM [Stormwater Outreach for Regional Municipalities] consortium and continuing pharmaceutical take-back programs).

The City should closely monitor implementation of the Action Agenda, as this may lead to opportunities for grant funding, partnering with other local governments, and assistance with technical guidance that is of interest to the City.

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APPENDIX E

Capital Improvement Program Projects for Flood Protection, Water Quality Improvement, and Aquatic Habitat Improvement

Capital Improvement Program Projects for Flood Protection, Water Quality Improvement, and Aquatic Habitat Improvement

This appendix includes summary sheets for stormwater related capital improvement program projects. The projects have been developed in order to solve problems that were identified by City staff. The solutions presented in these summary sheets are based on limited design detail and itemized cost estimates that are provided in Appendix F. These costs are intended to provide an indication of the level of funding needed for implementation for CIP planning purposes, and should be assessed in greater detail and adjusted as necessary before launching analysis and design of any particular project. The costs estimates incorporate appropriate contingencies to account for uncertainty, the lack of detail in the design, and professional judgment. The projects are listed in Table E-1 below. The project summary sheets provided at the end of this appendix include information on the problem, proposed solution, cost estimate assumptions, map, photo, and estimated total project costs.

Table E-1 Capital Improvement Program Projects for Flood Protection, Water Quality Improvement, and Aquatic Habitat Improvement.

Project No.	Project Name	Project Cost (2010 Dollars)
Tier 1 Projects		
1A	Southwest Edmonds Basin Study Project 1 - Replace Infiltration Pipe (near 107th Pl W.)	$70,000
1B	Southwest Edmonds Basin Study Project 2 - Connect Sumps near Robin Hood Drive	$462,000
1C	Southwest Edmonds Basin Study Project 3 - Connect Sumps on 238th St SW to Hickman Park Infiltration System	$526,000
1D	Southwest Edmonds Basin Study Project 4 – Connect Sumps on 105th and 106th Ave W	$440,000
2A	Shellabarger Creek/Willow Creek/Edmonds Marsh 100-yr Flood Plain delineation	$239,000
2B	Willow Creek Pipe Rehabilitation (current Port of Edmonds portion)	$470,000
3A	Northstream Storm Repair and Abandonment South of Puget Drive	$200,000
3B	Northstream Pipe Culvert Rehabilitation	$73,000
4A	Talbot Road / Perrinville Creek Drainage Improvement and Habitat Enhancement Project	$522,000
4B	Talbot Road / Perrinville Creek Culvert Replacement	$1,253,000
5	95th/93rd Place project	$726,000
6	City-wide Drainage Replacement Projects	$840,000
7	Lake Ballinger Associated Projects	$600,000
8	North Talbot Rd. Drainage Improvement Project	$178,000
9	Public Facilities Water Quality Upgrades	$366,000
10	Shell Valley Emergency Access Rd, Drainage Portion	$195,000
11	Stormwater Utility Contribution for Transportation Projects	$300,000
Tier 2 Projects		
12	Edmonds Marsh Restoration	$2,786,000
13	Daylight Willow Creek in Marina Beach Park	$3,254,000
14	Shell Creek Channel Restoration in Yost Park	$160,000
15	Perrinville Creek High Flow Diversion and Habitat Restoration	$7,779,000

Capital Improvement Program Project Summary Sheet

Stormwater Project: 1A

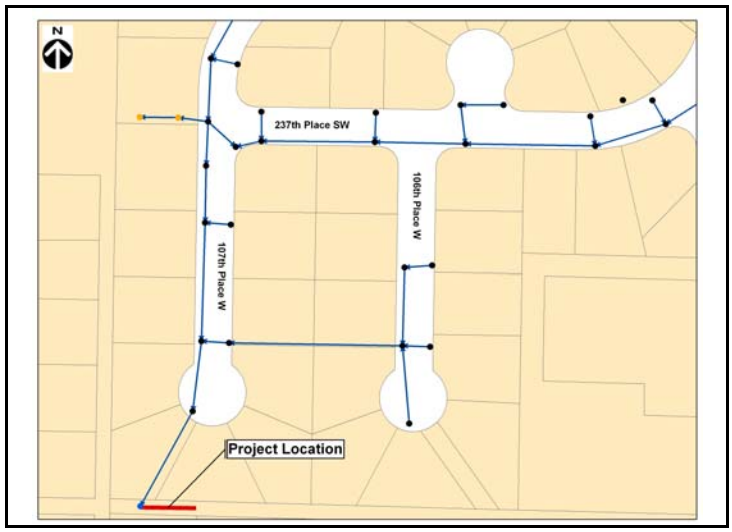
Project Name: Southwest Edmonds Basin Study Project 1 - Replace Infiltration Pipe (near 107th Pl W.)

Submitted By: Public Works Department

Problem Description: Infiltration pipe beneath the alleyway south of 107th Pl W cul-de-sac in Southwest Edmonds nearing the end of its service life. This system was built prior to the annexation of this area into the City (December 1995). It has become clogged and is causing ponding in the cul-de-sac. This project was described as a problem area in the 2002 Southwest Edmonds Drainage Study.

Project Solution: Remove the existing infiltration pipe, overexcavate a new infiltration trench, and install a new infiltration pipe. Replacement pipe is assumed to be 24 inch diameter corrugated metal pipe 50 feet long. New trench is assumed 8 feet deep.

Cost Estimate Assumptions: Remove 50 ft of infiltration pipe. Install 50 ft of 24 inch cmp infiltration pipe. Connect to the existing storm drain system.



Alleyway where existing infiltration pipe is located.

In Capital Facilities Plan? ☐ Yes ☑ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	14,000	0	14,000	0	0	0	0
Design	6,000	0	6,000	0	0	0	0
Construction	37,000	0	0	39,000	0	0	0
Permitting	5,000	0	5,000	0	0	0	0
Construction Management (Incl. Insp.)	6,000	0	0	6,000	0	0	0
City of Edmonds Project Management	2,000	0	2,000	0	0	0	0
TOTAL EXPENSES	70,000	0	27,000	45,000	0	0	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 1B

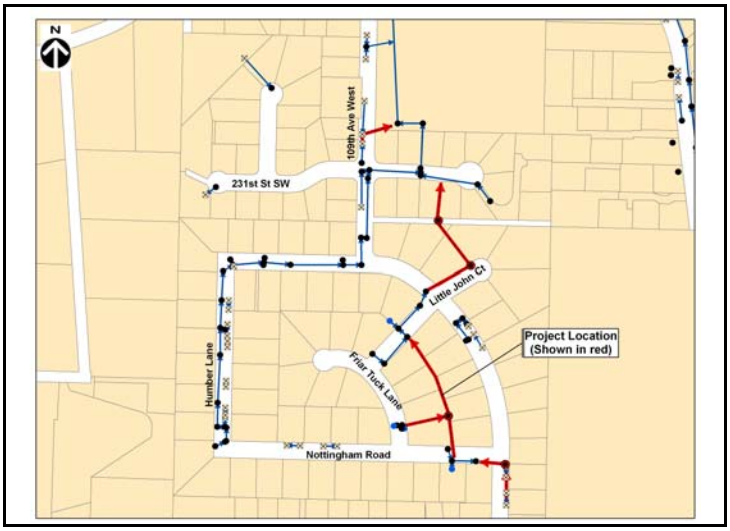
Project Name: Southwest Edmonds Basin Study Project 2 - Connect Sumps near Robin Hood Drive

Submitted By: Public Works Department

Problem Description: Several sumps (dry wells) in the vicinity of Robin Hood Drive in Southwest Edmonds overflow during large storm events. Over time, they have become clogged and may cause flooding.

Project Solution: Connect the sumps to the City of Edmonds storm drain system with an overflow pipe that will function in large storm events to reduce the potential for flooding.

Cost Estimate Assumptions: Install 1600 ft of new 12 inch dia pipe (600 ft in the public right of way and 1000 ft on private property). 4 new manholes. 9 connections to the existing storm drain system.



In Capital Facilities Plan? ☑ Yes ☐ No

Sumps along Friar Tuck Lane

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	23,000	0	0	0	0	26,000	0
Design	48,000	0	0	0	0	55,000	0
Construction	322,000	0	0	0	0	0	384,000
Permitting	5,000	0	0	0	0	6,000	0
Construction Management (Incl. Insp.)	48,000	0	0	0	0	0	57,000
City of Edmonds Project Management	16,000	0	0	0	0	18,000	0
TOTAL EXPENSES	462,000	0	0	0	0	105,000	441,000

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 1C

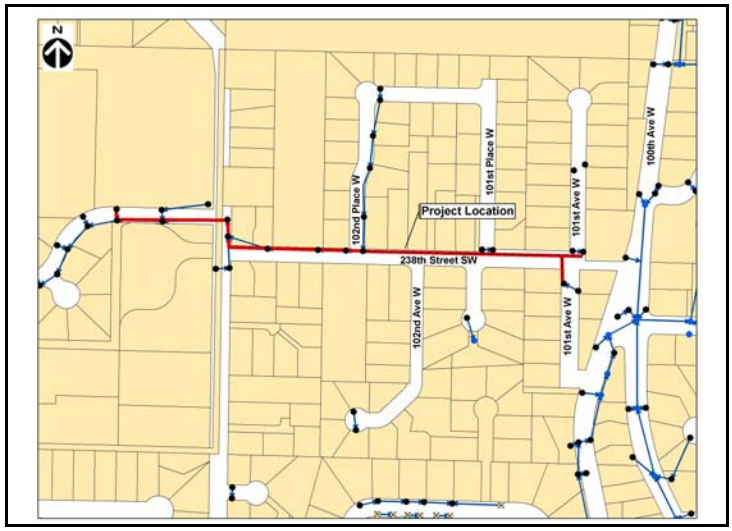
Project Name: Southwest Edmonds Basin Study Project 3 - Connect Sumps on 238th St SW to Hickman Park Infiltration

Submitted By: Public Works Department

Problem Description: Several sumps (dry wells) along 238th Street SW in Southwest Edmonds are not functioning properly. They have become clogged and are contributing to area flooding during large storm events.

Project Solution: Connect the sumps to the City of Edmonds infiltration system in Hickman Park to the west.

Cost Estimate Assumptions: Install 825 ft of new 12 inch dia pipe. Replace 950 ft of aging existing pipe. Reuse existing structures west of 102nd Place W. 3 new manholes. 12 connections to existing structures.



Alignment of the proposed storm drain pipe along 238th Street SW. Existing catch basin sumps in the foreground.

In Capital Facilities Plan? ☑ Yes ☐ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	25,000	0	26,000	0	0	0	0
Design	55,000	0	56,000	0	0	0	0
Construction	368,000	0	0	390,000	0	0	0
Permitting	5,000	0	5,000	0	0	0	0
Construction Management (Incl. Insp.)	55,000	0	0	58,000	0	0	0
City of Edmonds Project Management	18,000	0	18,000	0	0	0	0
TOTAL EXPENSES	526,000	0	105,000	448,000	0	0	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 1D

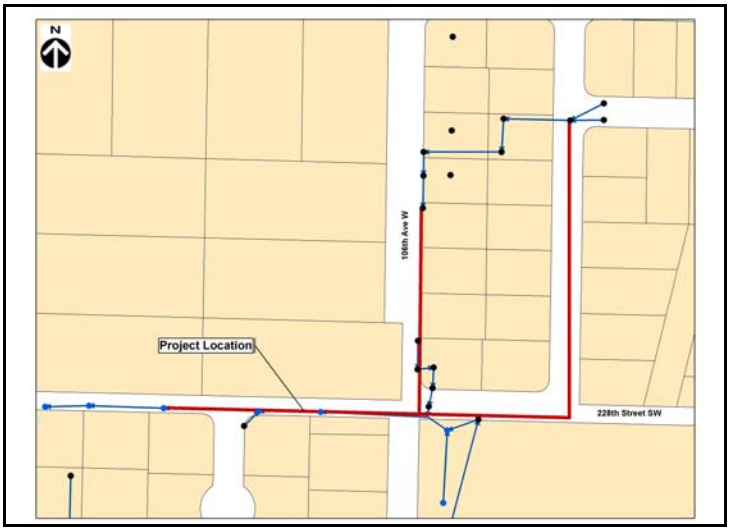
Project Name: Southwest Edmonds Basin Study Project 4 – Connect Sumps on 105th and 106th Ave W

Submitted By: Public Works Department

Problem Description: Several sumps (dry wells) along 105th and 106th Ave W in Southwest Edmonds are not functioning property. They have become clogged and are causing flooding during large events. In addition, pipes on private property between 105th and 106th Ave W are no longer functioning properly.

Project Solution: Connect the sumps to the City of Edmonds storm drain system to the west.

Cost Estimate Assumptions: Install 1500 ft of new 12 inch dia pipe. Connections to manholes on 105th and 106th Ave W are required in order to abandon problematic pipes on private property. 5 new manholes. 5 connections to existing structures.



Existing area along 106th Ave. W where sumps can overflow.

In Capital Facilities Plan? ☐ Yes ☑ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	42,000	42,000	0	0	0	0	0
Design	44,000	44,000	0	0	0	0	0
Construction	290,000	0	296,000	0	0	0	0
Permitting	5,000	5,000	0	0	0	0	0
Construction Management (Incl. Insp.)	44,000	0	45,000	0	0	0	0
City of Edmonds Project Management	15,000	15,000	0	0	0	0	0
TOTAL EXPENSES	440,000	106,000	341,000	0	0	0	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 2A

Project Name: Shellabarger Creek/Willow Creek/Edmonds Marsh 100-yr Flood Plain delineation

Submitted By: Public Works Department

Problem Description: Properties around Shellabarger Creek, Willow Creek, Edmonds Marsh, along State Route 104, and Dayton Street can become flooded during large storm events due to excessive upstream flows, high tide, and reduced storage capacity in the Marsh due to sedimentation.

Project Solution: Study would update the 100-yr floodplain delineation for the Edmonds Marsh area to assist the City and surrounding property owners with planning strategies to protect property from future flooding and enable stormwater services to be allocated more efficiently. Re-delineation of the 100-yr flood plain will allow the City to properly regulate development in flood prone lands and keep the City in compliance with National Flood Insurance Program (NFIP) obligations. By being a part of NFIP, FEMA makes flood insurance coverage available on buildings and their contents throughout the community (major public benefit).

Cost Estimate Assumptions: Includes hydrologic modeling and hydraulic modeling. This project may involve participation from WSDOT and the Port of Edmonds.

Aerial View of Edmonds Marsh (background) and the Port of Edmonds (foreground) - Department of Ecology

In Capital Facilities Plan? ☑ Yes ☐ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	0	0	0	0	0	0	0
Design	0	0	0	0	0	0	0
Construction	228,000	228,000	0	0	0	0	0
Permitting	0	0	0	0	0	0	0
Construction Management (Incl. Insp.)	0	0	0	0	0	0	0
City of Edmonds Project Management	11,000	11,000	0	0	0	0	0
TOTAL EXPENSES	239,000	239,000	0	0	0	0	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 2B

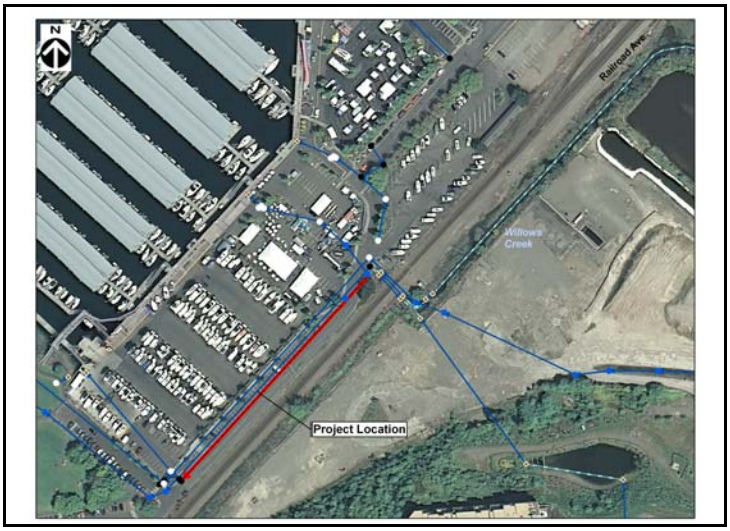
Project Name: Willow Creek Pipe Rehabilitation (current Port of Edmonds portion)

Submitted By: Public Works Department

Problem Description: The 48 inch corrugated metal pipe (CMP) that conveys Willow Creek from Edmonds Marsh to towards Puget Sound has become deteriorated and is in risk of failing in the near future if it is not rehabilitiated.

Project Solution: Install a cured in place pipe lining in 560 feet of 48 inch CMP pipe. Funding may be provided by sharing the costs with the Port of Edmonds. The Port of Edmonds currently owns the pipe. The goal after rehabilitation, is to transfer ownership of the pipe to the City, assuming an equitable agreement can be reached.

Cost Estimate Assumptions: Cured in place lining for 560 ft of 48 inch cmp.



Inlet to underground piping system that requires rehabilitation.

In Capital Facilities Plan? ☐ Yes ☑ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	6,000	0	0	0	7,000	0	0
Design	48,000	0	0	0	53,000	0	0
Construction	322,000	0	0	0	355,000	0	0
Permitting	30,000	0	0	0	33,000	0	0
Construction Management (Incl. Insp.)	48,000	0	0	0	53,000	0	0
City of Edmonds Project Management	16,000	0	0	0	18,000	0	0
TOTAL EXPENSES	470,000	0	0	0	519,000	0	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 3A

Project Name: Northstream Storm Repair and Abandonment South of Puget Drive

Submitted By: Public Works Department

Problem Description: Abandoned 550 foot long 30 inch concrete pipe is cracked and caving in, potentially creating a hazard.

Project Solution: Slip line the pipe with 21 inch perforated HDPE (SDR 17) pipe to pervent further pipe colapse and allow the pipe to continue conveying groundwater infiltration.

Cost Estimate Assumptions: Slip line 550 ft of 30 inch concrete pipe. Assumed to be lined with 21 inch perforated HDPE pipe.

Inlet to the 30 inch concrete pipe that will be slip lined.

In Capital Facilities Plan? ☐ Yes ☑ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	12,000	0	0	13,000	0	0	0
Design	20,000	0	0	21,000	0	0	0
Construction	136,000	0	0	0	150,000	0	0
Permitting	5,000	0	0	5,000	0	0	0
Construction Management (Incl. Insp.)	20,000	0	0	0	22,000	0	0
City of Edmonds Project Management	7,000	0	0	7,000	0	0	0
TOTAL EXPENSES	200,000	0	0	46,000	172,000	0	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 3B

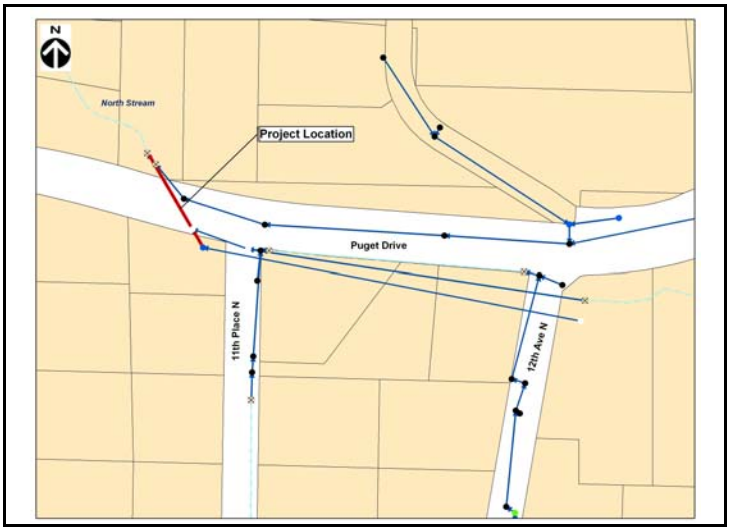
Project Name: Northstream Pipe Culvert Rehabilitation

Submitted By: Public Works Department

Problem Description: Aging 30 inch concrete pipe culvert under Puget Drive was not repaired or replaced with emergency project in 2008. The culvert is in poor condition and in need of repair before the pipe begins collapsing.

Project Solution: Install a cured in place pipe lining in 100 feet of 30 inch concrete pipe.

Cost Estimate Assumptions: Cured in place lining for 100 ft of 30 inch concrete pipe.



Northstream upstream of the 30 inch concrete pipe that will be rehabilitated.

In Capital Facilities Plan? ☐ Yes ☑ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	5,000	0	0	0	6,000	0	0
Design	6,000	0	0	0	7,000	0	0
Construction	41,000	0	0	0	0	47,000	0
Permitting	13,000	0	0	0	14,000	0	0
Construction Management (Incl. Insp.)	6,000	0	0	0	0	7,000	0
City of Edmonds Project Management	2,000	0	0	0	2,000	0	0
TOTAL EXPENSES	73,000	0	0	0	29,000	54,000	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 4A

Project Name: Talbot Road / Perrinville Creek Drainage Improvement and Habitat Enhancement Project

Submitted By: Public Works Department

Problem Description: Undersized stormwater pipe that conveys flow from Talbot Road to Perrinville Creek. The undersized pipe has caused flooding of a home and several adjacent lots. Aggradation (bed load deposition) of Perrinville Creek near the pipe outlet has exacerbated the problem by causing a backwater at the pipe outlet.

Project Solution: Construct a new stormwater pipe that is appropriately sized and enhance stream habitat.

Cost Estimate Assumptions: 360 ft of new 30 inch dia storm drain pipe. 35 ft of 27 inch dia storm drain pipe. 100 ft of new 18 inch storm drain pipe. 25 ft of 8 inch dia storm drain pipe. 150 ft of channel enhancement, including 4 log weirs.

Outlet of the existing stormwater pipe.

In Capital Facilities Plan? ☐ Yes ☑ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	0	0	0	0	0	0	0
Design	25,000	25,000	0	0	0	0	0
Construction	421,000	421,000	0	0	0	0	0
Permitting	0	0	0	0	0	0	0
Construction Management (Incl. Insp.)	63,000	63,000	0	0	0	0	0
City of Edmonds Project Management	13,000	13,000	0	0	0	0	0
TOTAL EXPENSES	522,000	522,000	0	0	0	0	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 4B

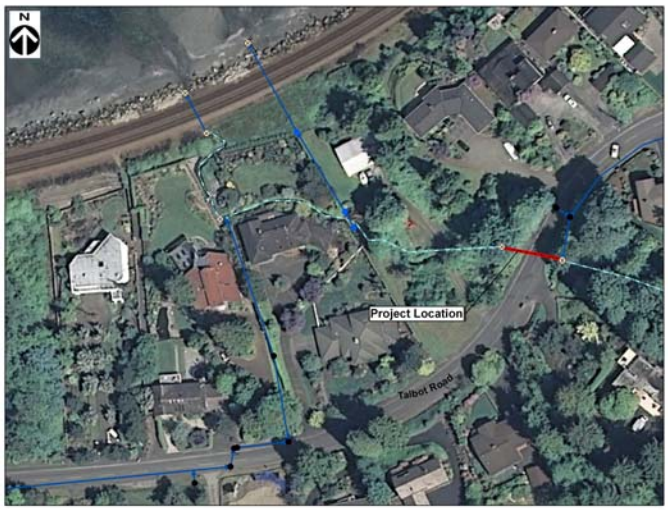
Project Name: Talbot Road / Perrinville Creek Culvert Replacement

Submitted By: Public Works Department

Problem Description: This project is required as mitigation for the Northstream culvert project completed in 2008, and would also improve conveyance capacity. The existing culvert has a perched outlet and high flow velocities making it a barrier to upstream fish migration. The culvert is also insufficient to convey peak flows greater than the 10-year recurrence interval flow.

Project Solution: Replace existing Perrinville Creek culvert beneath Talbot Road with a new culvert designed to meet WDFW fish passage design criteria. The new culvert would be a concrete box culvert with an integrated sediment trap and dimensions of approximately 11 feet wide by 7 feet tall. Construction would require temporary closures of Talbot Road, streamflow bypass, private property easement(s), and substantial excavation beneath the roadway. The City may receive grant funding for this project.

Cost Estimate Assumptions: 75 ft long culvert under Talbot Rd.



Perched outlet of the Perrinville Creek culvert under Talbot Road.

In Capital Facilities Plan? ☐ Yes ☑ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	69,000	0	70,000	0	0	0	0
Design	123,000	0	125,000	0	0	0	0
Construction	817,000	0	102,000	761,000	0	0	0
Permitting	80,000	0	82,000	0	0	0	0
Construction Management (Incl. Insp.)	123,000	0	15,000	115,000	0	0	0
City of Edmonds Project Management	41,000	0	42,000	0	0	0	0
TOTAL EXPENSES	1,253,000	0	436,000	876,000	0	0	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 5

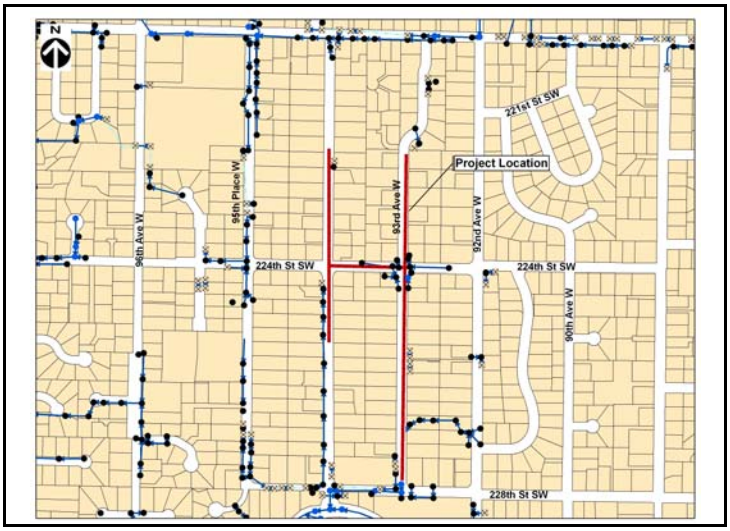
Project Name: 95th/93rd Place project

Submitted By: Public Works Department

Problem Description: The drainage system in the vicinity of 95th PL W, 93rd PL W, and 224th Street SW is inadequate and is causing flooding problems. This area was annexed into the City from Snohomish County in October 1995.

Project Solution: Construct approximately 4,000 linear feet of new storm drain pipe and new catch basins and connect to the existing storm drain system.

Cost Estimate Assumptions: Construct 3,200 ft of storm drain pipe. 15 catch basins. 8 connections to the existing storm drain system.



In Capital Facilities Plan? ☑ Yes ☐ No

Project area along 93rd Place W, South of 224th Street SW

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	0	0	0	0	0	0	0
Design	0	0	0	0	0	0	0
Construction	601,000	0	31,000	606,000	0	0	0
Permitting	5,000	0	5,000	0	0	0	0
Construction Management (Incl. Insp.)	90,000	0	5,000	90,000	0	0	0
City of Edmonds Project Management	30,000	0	31,000	0	0	0	0
TOTAL EXPENSES	726,000	0	72,000	696,000	0	0	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 6

Project Name: City-wide Drainage Replacement Projects

Submitted By: Public Works Department

Problem Description: Many City drainage facilities are aging and in need of repair. The Public Works Department has an ongoing program to replace city-wide drainage facilities on an as-needed basis using in house staffing or small works contracts.

Project Solution: Annual funding for the city-wide drainage replacement projects.

Cost Estimate Assumptions:

Construction of citywide drainage replacement projects.

In Capital Facilities Plan? ☐ Yes ☑ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	0	0	0	0	0	0	0
Design	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0
Permitting	0	0	0	0	0	0	0
Construction Management (Incl. Insp.)	0	0	0	0	0	0	0
City of Edmonds Project Management	840,000	140,000	143,000	149,000	154,000	161,000	167,000
TOTAL EXPENSES	840,000	140,000	143,000	149,000	154,000	161,000	167,000

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 7

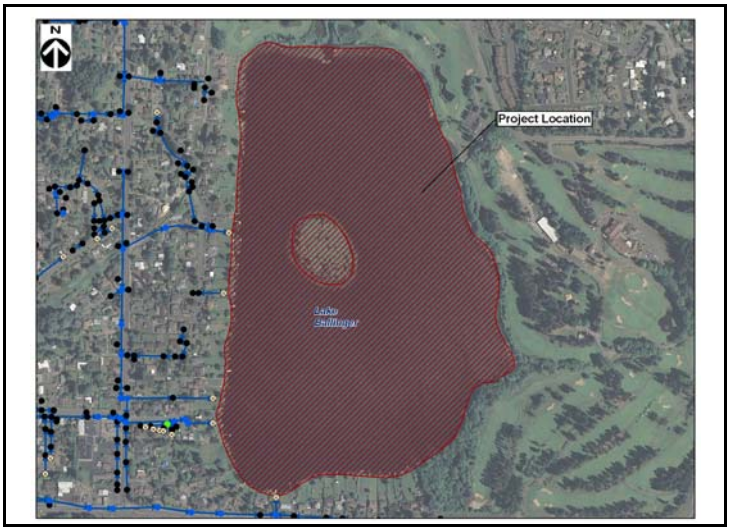
Project Name: Lake Ballinger Associated Projects

Submitted By: Public Works Department

Problem Description: Homes surrounding Lake Ballinger and McAleer Creek have flooded during very large storm events. There are also significant water quality issues in the watershed.

Project Solution: Work independently and with other members of the Greater Lake Ballinger/McAleer Creek Watershed Forum to implement the Strategic Action Plan, which was finalized in July 2009.

Cost Estimate Assumptions:



In Capital Facilities Plan? ☑ Yes ☐ No

Lake Ballinger

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	0	0	0	0	0	0	0
Design	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0
Permitting	0	0	0	0	0	0	0
Construction Management (Incl. Insp.)	0	0	0	0	0	0	0
City of Edmonds Project Management	600,000	100,000	102,000	106,000	110,000	115,000	119,000
TOTAL EXPENSES	600,000	100,000	102,000	106,000	110,000	115,000	119,000

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 8

Project Name: North Talbot Rd. Drainage Improvement Project

Submitted By: Public Works Department

Problem Description: Storm drainage from the north end of Talbot Road (no outlet street) drains down a steep slope to a surface discharge point on the City of Lynnwood Wastewater Treatment Plant property. The discharge location is problematic to the City of Lynnwood and this drainage is likely to contribute to hillslope instability in the future unless a long term solution is implemented.

Project Solution: The project would include installation of a permanent tightline 12 inch dia pipe down the steep slope. The new pipe would discharge to a fixed point at a catch basin in the City of Lynnwood storm drain system.

Cost Estimate Assumptions: Construct 300 ft of 12 inch dia storm drain pipe tightlined across the steep slope. Anchored with pin piles or helical anchors and saddles on steep slope. Construct 50 feet of 12 inch dia pipe underground to connect to the downstream manhole.

Approximate location of the proposed storm drain alignment between the end of Talbot Road and the west side of the Lynnwood WWTP.

In Capital Facilities Plan? ☐ Yes ☑ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	13,000	0	13,000	0	0	0	0
Design	18,000	0	18,000	0	0	0	0
Construction	118,000	0	120,000	0	0	0	0
Permitting	5,000	0	5,000	0	0	0	0
Construction Management (Incl. Insp.)	18,000	0	18,000	0	0	0	0
City of Edmonds Project Management	6,000	0	6,000	0	0	0	0
TOTAL EXPENSES	178,000	0	180,000	0	0	0	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 9

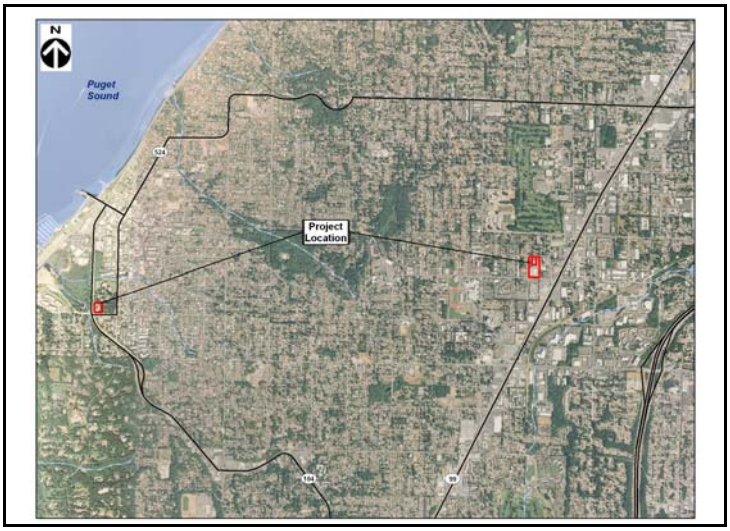
Project Name: Public Facilities Water Quality Upgrades

Submitted By: Public Works Department

Problem Description: The Public Works Yard on 210 St SW and the Parks Facility store stockpiles of sand and other aggregate material for use by the Crews. There is not enough room under the covered part of the yard to store all this material. Additional covered space is required to prevent this material form washing into the storm drainage system that ultimately flows to Halls Creek in Mountlake Terrace. Also, washing vehicles can cause undesired pollutants to enter the storm system. These projects are required under the Federal and state Clean Water Act.

Project Solution: Provide additional covered space for the material/aggregate piles at both facilities and a vehicle wash station at the Public Works Yard.

Cost Estimate Assumptions: 12,000 square feet of cover and a vehicle wash station at the Public Works Yard and 6,000 square feet of cover at the Parks Facility.



Existing stockpiles

In Capital Facilities Plan? ☑ Yes ☐ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	0	0	0	0	0	0	0
Design	41,000	41,000	0	0	0	0	0
Construction	270,000	0	275,000	0	0	0	0
Permitting	0	0	0	0	0	0	0
Construction Management (Incl. Insp.)	41,000	0	42,000	0	0	0	0
City of Edmonds Project Management	14,000	14,000	0	0	0	0	0
TOTAL EXPENSES	366,000	55,000	317,000	0	0	0	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 10

Project Name: Shell Valley Emergency Access Rd, Drainage Portion

Submitted By: Public Works Department

Problem Description: The Shell Valley area is currently only accessed off of Bowdoin Way via Pioneer Way, which is a very steep and curvy road. There are approximately 90 dwelling units which utilize Pioneer Way as their access to Shell Valley. During periods of ice and snow, driving on Pioneer Way is treacherous, making it difficult for emergency responders to enter Shell Valley.

Project Solution: This project will provide an alternate emergency access off of Main St. The cost included for this project only covers the construction of the drainage infrastructure including the porous concrete road, wetland restoration, and associated activities.

Cost Estimate Assumptions: 186 LF of porous concrete roadway and an 18-inch sand layer for 100% infiltration. A trench to intercept runoff from the hillside and discharge runoff to the existing wetland. Also, plants to enhance the wetland function.

Shell Valley Access Road project area

In Capital Facilities Plan? ☐ Yes ☑ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	0	0	0	0	0	0	0
Design	0	0	0	0	0	0	0
Construction	195,000	195,000	0	0	0	0	0
Permitting	0	0	0	0	0	0	0
Construction Management (Incl. Insp.)	0	0	0	0	0	0	0
City of Edmonds Project Management	0	0	0	0	0	0	0
TOTAL EXPENSES	195,000	195,000	0	0	0	0	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 11

Project Name: Stormwater Utility Contribution for Transportation Projects

Submitted By: Public Works Department

Problem Description: Projects in the City's Comprehensive Transportation Plan such as new sidewalks, trails, and road widening generate new imperious surface area that has to be mitigated to prevent stormwater runoff impacts in nearby receiving waters.

Project Solution: This project provides a fixed sum annually to help pay for storm drainage improvements associated with the projects in the City's Comprehensive Transportation Plan.

Cost Estimate Assumptions: $50,000 per year (2010 dollars) is assumed for this project.

Construction of stormwater facilities for streets projects.

In Capital Facilities Plan? ☐ Yes ☑ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	100%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	0%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	0	0	0	0	0	0	0
Design	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0
Permitting	0	0	0	0	0	0	0
Construction Management (Incl. Insp.)	0	0	0	0	0	0	0
City of Edmonds Project Management	300,000	50,000	51,000	53,000	55,000	57,000	60,000
TOTAL EXPENSES	300,000	50,000	51,000	53,000	55,000	57,000	60,000

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 12

Project Name: Edmonds Marsh Restoration

Submitted By: Public Works Department

Problem Description: Development around the marsh and lack of connectivity with the Puget Sound has resulted in sedimentation of the marsh and a transition to freshwater species.

Project Solution: Conduct revegetation, replace the flap gate to allow better connectivity with the Puget Sound, and remove sediment.

Cost Estimate Assumptions: 23 acres of revegetation. Construct new tide gate. Remove sediment.

In Capital Facilities Plan? ☑ Yes ☐ No

Edmonds Marsh as seen from the viewing platform.

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	25%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	75%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	29,000	0	0	0	32,000	0	0
Design	290,000	0	0	0	221,000	103,000	0
Construction	1,930,000	0	0	0	0	757,000	1,504,000
Permitting	150,000	0	0	0	110,000	57,000	0
Construction Management (Incl. Insp.)	290,000	0	0	0	0	115,000	227,000
City of Edmonds Project Management	97,000	0	0	0	33,000	77,000	0
TOTAL EXPENSES	2,786,000	0	0	0	396,000	1,109,000	1,731,000

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 13

Project Name: Daylight Willow Creek in Marina Beach Park

Submitted By: Public Works Department

Problem Description: Willow Creek and Edmonds Marsh have been significantly impacted by past development and the piping of the Creek.

Project Solution: Daylight Willow Creek (originally as part of the Edmonds Crossing Project). The new channel would be lined with an impermeable membrane for the entire length to prevent remnant contamination from the former fuel tank farm from coming in contact with streamflow. Channel will be overexcavated in order to protect membrane and provide soil for plant establishment. A railroad trestle is currently planned to be constructed by Sound Transit / BNSF (costs not included in this estimate). This will facilitate the future daylighting of the creek that would have its outlet to the Puget Sound near the historic location of the former Union Oil Company Pier.

Cost Estimate Assumptions: 1,100 linear ft of new creek channel lined with an impermeable membrane. 6-ft bottom width. 4-ft depth. 3H:1V side slopes. Overexcavate to 3 ft depth below channel bottom. Assume moderate contamination below groundwater table.

Previously restored section of Willow Creek. Source: http://www.unocaledmonds.info/clean-up/gallery.php

In Capital Facilities Plan? ☑ Yes ☐ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	25%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	75%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	115,000	0	0	0	127,000	0	0
Design	338,000	0	0	0	309,000	67,000	0
Construction	2,250,000	0	0	0	0	935,000	1,712,000
Permitting	100,000	0	0	0	55,000	57,000	0
Construction Management (Incl. Insp.)	338,000	0	0	0	0	141,000	257,000
City of Edmonds Project Management	113,000	0	0	0	55,000	72,000	0
TOTAL EXPENSES	3,254,000	0	0	0	546,000	1,272,000	1,969,000

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 14

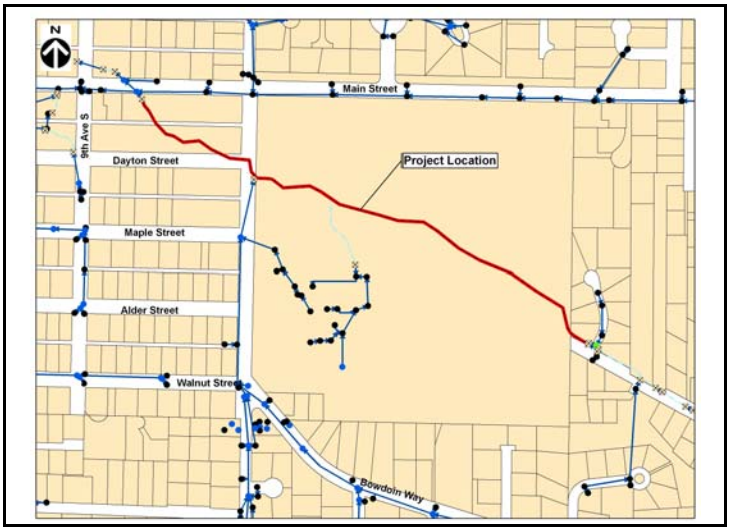
Project Name: Shell Creek Channel Restoration in Yost Park

Submitted By: Parks Department

Problem Description: Shell Creek is incising due to increased surface water flows from development. The channel is incised up to 6 feet deep in places. This scouring causes physical damage to the stream in the park and the sediment is carried downstream and impacts fish habitat.

Project Solution: Construct grade control structures using channel spanning log weirs on 100 linear feet of stream channel and stabalize the stream bank using bioengineering techniques on 50 linear feet of stream channel. Assumes 1 grade control structure for every 20 linear feet of channel.

Cost Estimate Assumptions: 100 linear ft of creek restoration using logs and boulders. 10 channel spanning grade control structures.



Shell Creek channel illustrating incision.

In Capital Facilities Plan? ☐ Yes ☑ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	25%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	75%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	9,000	0	0	0	10,000	0	0
Design	15,000	0	0	0	17,000	0	0
Construction	101,000	0	0	0	111,000	0	0
Permitting	15,000	0	0	0	17,000	0	0
Construction Management (Incl. Insp.)	15,000	0	0	0	17,000	0	0
City of Edmonds Project Management	5,000	0	0	0	6,000	0	0
TOTAL EXPENSES	160,000	0	0	0	178,000	0	0

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

Capital Improvement Program Project Summary Sheet

Stormwater Project: 15

Project Name: Perrinville Creek High Flow Diversion and Habitat Restoration

Submitted By: Public Works Department

Problem Description: Urbanization of the Perrinville Creek basin has led to increased flows in the creek, incision of the creek bed, and sedimentation in the low-gradient downstream reaches of the creek.

Project Solution: Construct a high flow diversion pipe that would divert high peak stream flows caused by excessive stormwater runoff at the intersection of 76th Ave W and Olympic View Drive. The diversion pipe alignment would extend north along Olympic View Drive, cross through the Snohomish County Park, cross several private properties, cross Frederick Place and Talbot Road, and the diversion pipe would discharge to the existing Perrinville Creek high flow bypass pipe that discharges directly into Puget Sound. The project also include habitat restoration in Perrinville Creek to enhance salmon spawning in the creek.

Cost Estimate Assumptions: 4,560 ft of 42 inch diameter storm drain pipe (2,800 ft in the public right of way, 1,000 ft on private property, 700 ft through Snohomish County Park, 30 ft under Frederick Pl and 30 ft under Talbot Rd). 1,000 ft of streambank restoration.

Perrinville Creek Channel illustrating the channel incision that will be addressed by restoration.

In Capital Facilities Plan? ☑ Yes ☐ No

Predesign includes survey, geotech, utility locates, feasibility, etc.

Revenue Summary		Percent of Project Total
City Funded	Stormwater Utility:	25%
	Parks (unsecured):	0%
Other Funded	Secured:	0%
	Unsecured:	75%
	TOTAL	100%

Expenses	Total Costs	2011	2012	2013	2014	2015	2016
Predesign	105,000	0	0	0	116,000	0	0
Design	836,000	0	0	0	922,000	0	0
Construction	5,573,000	0	0	0	1,467,000	2,524,000	2,438,000
Permitting	150,000	0	0	0	165,000	0	0
Construction Management (Incl. Insp.)	836,000	0	0	0	221,000	344,000	401,000
City of Edmonds Project Management	279,000	0	0	0	308,000	0	0
TOTAL EXPENSES	7,779,000	0	0	0	3,199,000	2,868,000	2,839,000

1. Total costs are in 2010 dollars.
2. Future expenses reflect the following annual inflation rates: 2011 0%; 2012 2%; 2013 4%; 2014 4%; 2015 4%; 2016 4%.

APPENDIX F

Capital Improvement Program Project Cost Estimates

Capital Improvement Program Project Cost Estimates

This appendix includes itemized cost estimates for stormwater related capital improvement program projects. The material quantities presented in these estimates were based on limited design detail and the unit prices were based on similar projects in the region. Unit price sources included the Washington State Department of Transportation unit bid analysis web site, unit price data from Seattle Public Utilities, and cost estimates obtained from product vendors, contractors, and consultants. These cost estimates are intended to provide an indication of the level of funding needed for implementation for CIP planning purposes, and should be assessed in greater detail and adjusted as necessary before launching analysis and design of any particular project. These cost estimates incorporate appropriate contingencies to account for uncertainty, the lack of detail in the design, and professional judgment.

See Appendix E for additional information on each project, including additional information on the problem, proposed solution, cost estimate assumptions, map, and photo.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 1A - SOUTHWEST EDMONDS BASIN STUDY PROJECT 1 - REPLACE INFILTRATION PIPE

Prepared by: M. Fontaine
Checked by: M. Ewbank 3/8/2010

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
REMOVE PAVEMENT	35	SY	$25	$875	WSDOT UBA.
REMOVE AND SALVAGE EXISTING PIPE	1	LS	$2,000	$2,000	
STRUCTURE EXCAVATION, INCL HAUL	60	CY	$40	$2,400	WSDOT UBA / SPU UNIT PRICE DATA
SHORING OR EXTRA EXCAVATION TRENCH	400	SF	$1.2	$480	
24" DIA. PERFORATED PIPE	50	LF	$40	$2,000	WSDOT UBA.
GRAVEL BACKFILL FOR DRAINS	50	CY	$40	$2,000	WSDOT UBA.
CRUSHED SURFACING BASE COURSE	10	CY	$40	$400	6" thickness. Engineers estimate.
PAVEMENT, HOT MIX ASPHALT	7	TN	$300	$2,100	4" thickness. Engineers estimate.
MANHOLE	1	EA	$3,000	$3,000	WSDOT UBA. High end for small quantity.
TOTAL DIRECT COSTS:				**$15,255**	
MARKUPS					
MOBILIZATION			8%	$1,220	
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$763	
TEMPORARY DEWATERING			5%	$763	
TRAFFIC CONTROL			2%	$305	
CONTINGENCY			100%	$15,255	
SALES TAX			9%	$3,020	
Total Construction Cost:				**$37,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$2,500	
GEOTECHNICAL INVESTIGATION			LS	$10,000	Test pits, pilot infiltration test, and memo.
OTHER CONCEPT ENGINEERING/STUDY			5%	$1,850	
OTHER PROJECT COSTS					
TOTAL PREDESIGN (SURVEY, GEOTECH, OTHER)				$14,350	
DESIGN			15%	$5,550	
PERMITTING			LS	$5,000	Assumes land use application and SEPA checklist.
CONSTRUCTION MANAGEMENT			15%	$5,550	
CITY OF EDMONDS PROJ MNGT			5%	$1,850	
Total Estimated Project Cost:				**$70,000**	

Note.
100% contingency

Contingency for this project was selected to account for the uncertainty due to lack of information on potential utility conflicts, lack of certainty on existing faciliity details, and lack of facility sizing calculations.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 1B - SOUTHWEST EDMONDS BASIN STUDY PROJECT 2 - CONNECT SUMPS NEAR ROBIN HOOD LANE

Prepared by: M. Fontaine
Checked by: M. Ewbank 3/8/2010

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
REMOVE PAVEMENT	135	SY	$25	$3,375	WSDOT UBA.
STRUCTURE EXCAVATION INCL HAUL	475	CY	$40	$19,000	WSDOT UBA / SPU UNIT PRICE DATA
12" DIA. STORM DRAIN PIPE	1,600	LF	$26	$41,600	WSDOT UBA.
GRAVEL BACKFILL FOR DRAINS	410	CY	$40	$16,400	WSDOT UBA.
CRUSHED SURFACING BASE COURSE	25	CY	$40	$1,000	6" thickness. Engineers estimate.
PAVEMENT, HOT MIX ASPHALT	30	TN	$300	$9,000	4" thickness. Engineers estimate.
MANHOLE	4	EA	$3,000	$12,000	WSDOT UBA.
CONNECT TO EXISTING SYSTEM	9	EA	$500	$4,500	WSDOT UBA.
LANDSCAPE RESTORATION	890	SY	$30	$26,700	Engineer's estimate.
TOTAL DIRECT COSTS:				**$133,575**	
MARKUPS					
MOBILIZATION			8%	$10,686	
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$6,679	
TEMPORARY DEWATERING			5%	$6,679	
TRAFFIC CONTROL			3%	$4,007	
CONTINGENCY			100%	$133,575	
SALES TAX			9%	$26,568	
Total Construction Cost:				**$322,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$7,000	
GEOTECHNICAL INVESTIGATION			LS	$0	
PREDESIGN			5%	$16,100	
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$23,100	
DESIGN			15%	$48,300	
PERMITTING			LS	$5,000	Assumes land use application and SEPA checklist.
CONSTRUCTION MANAGEMENT			15%	$48,300	
CITY OF EDMONDS PROJ MNGT			5%	$16,100	
Total Estimated Project Cost:				**$460,000**	

Note.
100% contingency
Contingency for this project was selected to account for the uncertainty due to lack of information on potential utility conflicts, lack of information on existing facilities and site conditions, and lack of facility sizing calculations.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 1C - SOUTHWEST EDMONDS BASIN STUDY PROJECT 3 - CONNECT SUMPS ON 238TH ST SW - PIPE TO WEST

Prepared by: M. Fontaine
Checked by: M. Ewbank
Revised by: M. Fontaine 3/5/2010
Checked by: M. Ewbank 3/8/2010

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
REMOVE PAVEMENT	400	SY	$25	$10,000	WSDOT UBA.
STRUCTURE EXCAVATION, INCL HAUL	530	CY	$40	$21,200	WSDOT UBA / SPU UNIT PRICE DATA
REMOVE STRUCTURES AND OBST	950	LF	$18	$17,100	Remove existing pipe. SPU unit costs.
12" DIA. STORM DRAIN PIPE	1,780	LF	$26	$46,280	WSDOT UBA.
GRAVEL BACKFILL FOR DRAINS	410	CY	$40	$16,400	WSDOT UBA.
CRUSHED SURFACING BASE COURSE	70	CY	$40	$2,800	6" thickness. Engineers estimate.
PAVEMENT, HOT MIX ASPHALT	80	TN	$300	$24,000	4" thickness. Engineers estimate.
CONNECT TO EXISTING SYSTEM	12	EA	$500	$6,000	WSDOT UBA.
MANHOLE	3	EA	$3,000	$9,000	WSDOT UBA.
TOTAL DIRECT COSTS:				**$152,780**	
MARKUPS					
MOBILIZATION			8%	$12,222	
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$7,639	
TEMPORARY DEWATERING			5%	$7,639	
TRAFFIC CONTROL			3%	$4,583	
CONTINGENCY			100%	$152,780	
SALES TAX			9%	$30,388	
Total Construction Cost:				**$368,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$7,000	
GEOTECHNICAL INVESTIGATION			LS	$0	
PREDESIGN			5%	$18,400	
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$25,400	
DESIGN			15%	$55,200	
PERMITTING			LS	$5,000	Assumes land use application and SEPA checklist.
CONSTRUCTION MANAGEMENT			15%	$55,200	
CITY OF EDMONDS PROJ MNGT			5%	$18,400	
Total Estimated Project Cost:				**$530,000**	

Note.
100% contingency

Contingency for this project was selected to account for the uncertainty due to lack of information on potential utility conflicts, lack of information on existing facilities and site conditions, and lack of facility sizing calculations.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 1D - SOUTHWEST EDMONDS BASIN STUDY PROJECT 4 - CONNECT SUMPS ON 105TH AND 106TH AVE W

Prepared by: M. Fontaine
Checked by: M. Ewbank

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
REMOVE PAVEMENT	340	SY	$25	$8,500	WSDOT UBA.
STRUCTURE EXCAVATION, INCL HAUL	450	CY	$40	$18,000	WSDOT UBA / SPU UNIT PRICE DATA
12" DIA. STORM DRAIN PIPE	1,500	LF	$26	$39,000	WSDOT UBA.
GRAVEL BACKFILL FOR DRAINS	350	CY	$40	$14,000	WSDOT UBA.
CRUSHED SURFACING BASE COURSE	60	CY	$40	$2,400	6" thickness. Engineers estimate.
PAVEMENT, HOT MIX ASPHALT	70	TN	$300	$21,000	4" thickness. Engineers estimate.
CONNECT TO EXISTING SYSTEM	5	EA	$500	$2,500	WSDOT UBA.
MANHOLE	5	EA	$3,000	$15,000	WSDOT UBA.
TOTAL DIRECT COSTS:				**$120,400**	
MARKUPS					
MOBILIZATION			8%	$9,632	
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$6,020	
TEMPORARY DEWATERING			5%	$6,020	
TRAFFIC CONTROL			3%	$3,612	
CONTINGENCY			100%	$120,400	
SALES TAX			9%	$23,948	
Total Construction Cost:				**$290,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$7,000	
GEOTECHNICAL INVESTIGATION			LS	$20,000	
PREDESIGN			5%	$14,500	
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$41,500	
DESIGN			15%	$43,500	
PERMITTING			LS	$5,000	Assumes land use application and SEPA checklist.
CONSTRUCTION MANAGEMENT			15%	$43,500	
CITY OF EDMONDS PROJ MNGT			5%	$14,500	
Total Estimated Project Cost:				**$440,000**	

Note.
100% contingency
Contingency for this project was selected to account for the uncertainty due to lack of information on potential utility conflicts, lack of information on existing facilities and site conditions, and lack of facility sizing calculations.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 2A - EDMONDS MARSH 100-YR FLOODPLAIN STUDY

Prepared by: M. Fontaine
Checked by: M. Ewbank
Revised by: N. Christensen
Checked by: M. Fontaine

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
HYDROLOGIC ANALYSIS	1	LS	$15,000	$15,000	Event based hydrologic analysis.
REVIEW OF EXISTING CONDITIONS	1	LS	$ 20,000	$20,000	Identifying high water levels necessary for model calibration.
WATER LEVEL MONITORING	1	LS	$ 10,000	$10,000	Assume two gauges for model validation.
SUPPLEMENTAL SITE SURVEY	1	LS	$ 40,000	$40,000	Moderate level or survey effort to supplement LIDAR and other available elevation data. Also includes collection of some bathymetry data.
HYDRAULIC ANALYSIS	1	LS	$ 50,000	$50,000	2-D hydraulic modeling.
COORDINATION WITH USCOE AND FEMA	1	LS	$ 20,000	$20,000	Coordination required for updating 100-year floodplain.
FEMA DOCUMENTS	1	LS	$ 20,000	$20,000	Generate documents for Letter of Map Revision (LOMR) for FEMA floodplain update
TOTAL DIRECT COSTS:				**$175,000**	
MARKUPS					
MOBILIZATION			0%	$0	
TEMPORARY EROSION AND SEDIMENT CONTROL			0%	$0	
TEMPORARY DEWATERING			0%	$0	
TRAFFIC CONTROL			0%	$0	
CONTINGENCY			30%	$52,500	Assumed 30% contingency due to uncertainties in FEMA documentation process
SALES TAX			0%	$0	
Total Construction Cost:				**$228,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$0	SEE ABOVE
GEOTECHNICAL INVESTIGATION			LS	$0	NA
PREDESIGN			0%	$0	NA
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$0	NA
DESIGN			0%	$0	NA
PERMITTING			0%	$0	*NA*
CONSTRUCTION MANAGEMENT			0%	$0	NA
CITY OF EDMONDS PROJ MNGT			5%	$11,400	
Total Estimated Project Cost:				**$240,000**	

Note.

1. Cost estimate does not include a coastal innundation analysis, which may be required by FEMA as part of this project. Estimated cost for coastal analysis is approximately $20,000 if performed using the same 2-D model that is used for hydraulic analysis.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 2B - WILLOW CREEK PIPE REHABILITATION

Prepared by: M. Fontaine
Checked by: M. Ewbank 3/8/2010

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
CURED IN PLACE LINER, 48" CMP, 560' LONG	1	LS	$175,000	$175,000	Price includes mobilization, cleaning, and lining. Vendor quote from Insitu Form – Jeff Beck – 425-392-5757. Vendor quote from Michel's Corporation - Sam Zandofsky - 503-364-1199. Same price. Michel's quote assumes additional wastewater treatment would be required. Both estimates are high end ballpark costs.
PULL MANHOLE CONE AND REPLACE	1	LS	$2,000	$2,000	Engineer estimate.
TOTAL DIRECT COSTS:				**$177,000**	
MARKUPS					
MOBILIZATION			0%	$0	Included in vendor quote.
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$8,850	
TEMPORARY DEWATERING			10%	$17,700	
TRAFFIC CONTROL			2%	$3,540	
CONTINGENCY			50%	$88,500	
SALES TAX			9%	$26,603	
Total Construction Cost:				**$322,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$0	
GEOTECHNICAL INVESTIGATION			LS	$0	
PREDESIGN			2%	$6,440	
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$6,440	
DESIGN			15%	$48,300	
PERMITTING			LS	$30,000	
CONSTRUCTION MANAGEMENT			15%	$48,300	
CITY OF EDMONDS PROJ MNGT			5%	$16,100	
Total Estimated Project Cost:				**$470,000**	

Note.
50% contingency
Contingency for this project was selected to account for the uncertainty due to lack of information on condition of the existing pipe and the likelyhood for a high level of deterioration or a high level of cleaning required due to contact with salt water.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 3A - NORTHSTREAM 30" STORM PIPE REPAIR AND ABANDON IN PLACE

Prepared by: M. Fontaine
Checked by: M. Ewbank 3/8/2010

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
DISMANTLE RIP RAP AT PIPE INLET	1	LS	$1,000	$1,000	Engineer's estimate.
REMOVE MANHOLE AT PIPE INLET	1	LS	$1,000	$1,000	Engineer's estimate.
SLIP LINING, PERFORATED 21" SDR 17 HDPE PIPE	550	LF	$100	$55,000	Pipe Experts LLC. Dennis Smith. 360-507-1814. Includes mobilization, fuse, pull, membrane/geotextile wrapping, drilling perforations.
REPLACE MANHOLE AT INLET	1	CY	$1,000	$1,000	Engineers estimate.
REPLACE RIP RAP AT PIPE INLET	1	CY	$1,000	$1,000	Engineers estimate.
TOTAL DIRECT COSTS:				**$59,000**	
MARKUPS					
MOBILIZATION			0%	$0	Included in slip lining price
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$2,950	
TEMPORARY DEWATERING			5%	$2,950	
TRAFFIC CONTROL			2%	$1,180	
CONTINGENCY			100%	$59,000	
SALES TAX			9%	$11,257	
Total Construction Cost:				**$136,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$5,000	
GEOTECHNICAL INVESTIGATION			0%	$0	
PREDESIGN			5%	$6,800	
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$11,800	
DESIGN			15%	$20,400	
PERMITTING			LS	$5,000	Pipe is not currently in service. Assumes land use application and SEPA checklist.
CONSTRUCTION MANAGEMENT			15%	$20,400	
CITY OF EDMONDS PROJ MNGT			5%	$6,800	
Total Estimated Project Cost:				**$200,000**	

Note.
100% contingency
Contingency for this project was selected to account for the uncertainty due to lack of information on condition of the existing pipe and the likelyhood for a high level of deterioration resulting in significant additional construction cost of multiple launching and recieving pits.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 3B - NORTHSTREAM 30" STORM PIPE REHABILITATION

Prepared by: M. Fontaine
Checked by: M. Ewbank 3/8/2010

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
CURED IN PLACE LINING, 100 FT OF 30" CONC PIPE	1	LS	$23,000	$23,000	Includes mobilization, basic cleaning, and lining. Vendor quote from Michel's Corporation - Sam Zandofsky - 503-364-1199. Also obtained quote from Insituform. Jeff Beck. 425-392-5757. Insitu form estimate was $50,000.
TOTAL DIRECT COSTS:				**$23,000**	
MARKUPS					
MOBILIZATION			0%	$0	Included in lining price
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$1,150	
TEMPORARY DEWATERING			5%	$1,150	
TRAFFIC CONTROL			5%	$1,150	
CONTINGENCY			50%	$11,500	
SALES TAX			9%	$3,416	
Total Construction Cost:				**$41,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$2,500	
GEOTECHNICAL INVESTIGATION			0%	$0	
PREDESIGN			5%	$2,050	
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$4,550	
DESIGN			15%	$6,150	
PERMITTING			LS	$13,000	Pipe conveys Northstream. Assume Army Corps permit and WDFW HPA permit, No Effect Letter (no ESA listed species), and Critical Areas Report.
CONSTRUCTION MANAGEMENT			15%	$6,150	
CITY OF EDMONDS PROJ MNGT			5%	$2,050	
Total Estimated Project Cost:				**$70,000**	

Note.
50% contingency

Contingency for this project was selected to account for the uncertainty due to lack of information on condition of the existing pipe and the possibility for deterioration resulting in significant additional construction cost.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 4A - TALBOT ROAD / PERRINVILLE CREEK DRAINAGE IMPROVEMENT - Phase 2

Prepared by: M. Fontaine
Checked by: A. Fleming

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
REMOVE PAVEMENT	31	SY	$30	$919	Based on WSDOT Unit Bid Analysis, small quantity
REMOVING ASPHALT CONC SIDEWALK	56	SY	$10	$556	Based on WSDOT Unit Bid Analysis, small quantity
STRUCTURE EXCAVATION CL B	330	CY	$45	$14,835	Based on WSDOT Unit Bid Analysis, added factor to account for tight site and special handling
HAUL SURPLUS EXCAVATED MATERIAL OFF SITE	330	CY	$35	$11,550	Assume all material is unsuitable.
SHORING OR EX EXCAV TYPE B	210	SF	$5.00	$1,050	Based on WSDOT Unit Bid Analysis, small quantity
PLAIN CONC. STORM SEWER PIPE 8 IN. D	25	LF	$25	$625	Based on WSDOT Unit Bid Analysis
SCHEDULE A STORM SEWER PIPE 18 IN. DIAM.	100	LF	$40	$4,000	Based on WSDOT Unit Bid Analysis
27" DIA. STORM DRAIN PIPE	35	LF	$55	$1,925	Based on WSDOT Unit Bid Analysis. Assume cost is btwn 24" and 30" pipe.
30" CL. III REINF. CONC. STORM SEWER PIPE	360	LF	$85	$30,600	Based on vendor quote from Hanson Pipe - Peder Gunderson - 503-285-3817 - for 30" RCP. Includes 40% markup for installation
GRAVEL BACKFILL FOR DRAIN	209	CY	$40	$8,343	Based on WSDOT Unit Bid Analysis
CRUSHED SURFACING BASE COURSE	78	CY	$40	$3,127	Based on WSDOT Unit Bid Analysis
HMA FOR PAVEMENT REPAIR CL. 1/2 IN. P	6.18	TN	$300	$1,853	Engineers estimate. Small qty.
TOPSOIL TYPE A	191	CY	$40	$7,644	Based on WSDOT Unit Bid Analysis
ASPH CONC SIDEWALK	56	SY	$75	$4,167	Engineers estimate based on unit price for HMA.
CONNECTIONS TO DRAINAGE STRUCTURE	2	EA	$500	$1,000	Based on WSDOT Unit Bid Analysis
TYPE 1 CATCH BASIN	1	EA	$500	$500	Based on WSDOT Unit Bid Analysis
MANHOLE 48 IN. DIAM. TYPE 1	1	EA	$2,500	$2,500	Based on WSDOT Unit Bid Analysis
MANHOLE 72 IN. DIAM. TYPE 1	4	EA	$6,000	$24,000	Based on WSDOT Unit Bid Analysis
TIDEFLEX VALVE - TF1 - 37" W/BANDS	1	EA	$12,825	$12,825	Based on price quote from ANTEC CORP - Cindy Straka - 425-888-9090. Includes shipping and 30% markup for overhead and installation.
GRAVITY BLOCK WALL	600	SF	$25	$15,000	
DITCH EXCAVATION, INCL HAUL	190	CY	$15	$2,850	Based on WSDOT Unit Bid Analysis
STREAMBED GRAVEL (REPLACE)	42	CY	$15	$625	Engineers estimate.
PSIPE WETLAND PLANTS. PLUG (1 FT OC)	400	EA	$4.00	$1,600	Based on WSDOT Unit Bid Analysis
PSIPE NATIVE SHRUBS. #1 (3FT OC)	758	EA	$10	$7,577	Based on WSDOT Unit Bid Analysis
LOGS FOR GRADE CONTROL	7	EA	$2,000	$14,000	Engineers estimate. Includes anchoring.
STREAMBED BOULDERS (2-3 MAN)	35	EA	$85	$2,975	Based on WSDOT Unit Bid Analysis
6" STREAMBED COBBLES	3	CY	$90	$270	Based on WSDOT Unit Bid Analysis. Sm qty
TEMPORARY EROSION CONTROL BLANKET	422	SY	$10	$4,217	Based on WSDOT Unit Bid Analysis
				$0	
LANDSCAPE RESTORATION	1	LS	$50,000	$50,000	Engineers estimate.
REPAIR/REPLACE FENCE	1	LS	$5,000	$5,000	Engineers estimate.
REMOVE BRIDGE AND FORT	1	LS	$1,000	$1,000	Engineers estimate.
EXISTING UTILITIES - STANDARD	265	LF	$5	$1,325	Tabula 3.0.
EXISTING UTILITIES - COMPLEX	230	LF	$60	$13,800	Tabula 3.0.
TOTAL DIRECT COSTS:				**$252,256**	

PROJECT 4A - TALBOT ROAD / PERRINVILLE CREEK DRAINAGE IMPROVEMENT - Phase 2

Prepared by: M. Fontaine
Checked by: A. Fleming

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
MARKUPS					
MOBILIZATION			8%	$20,180	
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$12,613	
TEMPORARY DEWATERING			5%	$12,613	
TRAFFIC CONTROL			5%	$12,613	Work will occur in street and within BNSF RR ROW.
CONTINGENCY			30%	$75,677	Some high cost items, such as landscape restoration and utility relocation, are still unknown or uncertain.
SALES TAX			9.0%	$34,736	
Total Construction Cost:				**$421,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$0	Completed
GEOTECHNICAL INVESTIGATION			LS	$0	Completed
PREDESIGN			LS	$0	Completed
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$0	Completed
DESIGN (Phase 2)				$25,000	70% Complete
PERMITTING				$0	Contracted and underway
CONSTRUCTION MANAGEMENT			15%	$63,150	
CITY OF EDMONDS PROJ MNGT			5%	$12,613	
Total Estimated Project Cost:				**$520,000**	

Note.
30% contingency

Contingency for this project was selected to account for the uncertainty due to lack of information on utility relocation costs and costs for landscape restoration.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 4B - PERRINVILLE CREEK CULVERT REPLACEMENT AT TALBOT ROAD

Prepared by: M. Ewbank 3/7/2010
Checked by: M. Fontaine 3/10/2010

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
REMOVE PAVEMENT	60	SY	$25	$1,500	culvert width = 11', so road cut width =17'
CLEARING AND GRUBBING	1	LS	$3,000	$3,000	Engineer's est.
STRUCTURE EXCAVATION AND BACKFILL	330	CY	$40	$13,200	cut depth = 13'
TEMPORARY SHORING	1,300	SF	$20	$26,000	Assumes solider beams and lagging, H-piles. Unit cost based on 60% KC CSI cost estimate.
REMOVE AND SALVAGE EXISTING CULVERT	1	LS	$8,000	$8,000	Engineer's est.
UTILITIES RELOCATE	1	LS	$30,000	30000	Rough est.
11' x 7' PRECAST CONCRETE CULVERT STRUCTURE	1	EA	$200,000	200000	with integrated sediment trap, cost proportioned based on Bellevue SE 30th/Sunset Creek est
FLOW BYPASS PIPING FOR SED REMOVAL OPERATIONS	1	LS	$20,000	20000	parallel 24" pipe with manhole and gate
WING WALLS FOR ENTRANCE PROTECTION	1	LS	$10,000	$10,000	Engineer's est.
CULVERT INSTALLATION	1	LS	$40,000	$40,000	Engineer's est.
CHANNEL REGRADING AND GRADE CONTROL STRUCTURES	1	LS	$30,000	$30,000	Engineer's est.
STREAMBED GRAVEL AND COBBLES	39	CY	$50	$1,950	Sunset Creek est.
INSTREAM LOG STRUCTURES	1	LS	$10,000	$10,000	Engineer's est.
LIGHT LOOSE RIPRAP	150	TN	$35	$5,250	for rebuilding roadside rockeries
RIPARIAN PLANTINGS	1	LS	$3,000	$3,000	Engineer's est.
PROPERTY RESTORATION	1	LS	$5,000	$5,000	Engineer's est.
CRUSHED SURFACING BASE COURSE	9	CY	$40	$360	6" thickness. Engineers estimate.
PAVEMENT, HOT MIX ASPHALT	10	TN	$300	$3,000	4" depth. Engineers estimate
TOTAL DIRECT COSTS:				$410,000	
MARKUPS					
MOBILIZATION			8%	$32,800	
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$20,500	
STREAM CHANNEL DEWATERING / FLOW BYPASS				$40,000	Engineer's est.
TRAFFIC CONTROL			10%	$41,000	Busy street, single-lane closure for weeks
CONTINGENCY			50%	$205,000	Moderate, due to similarity to Bellevue Sunset Creek project with similar design
SALES TAX			9%	$67,437	
Total Construction Cost:				**$817,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$3,000	
GEOTECHNICAL INVESTIGATION			LS	$25,000	
PREDESIGN			5%	$40,850	
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$68,850	
DESIGN			15%	$122,550	
PERMITTING			LS	$80,000	Assumes Clearing and Grading Permit, SEPA Checklist, JARPA, Critical Areas Report, and Biological Assessment.
CONSTRUCTION MANAGEMENT			15%	$122,550	
CITY OF EDMONDS PROJ MNGT			5%	$40,850	
Total Estimated Project Cost:				**$1,250,000**	

Note.
50% contingency

Contingency for this project was selected to account for the uncertainty due to lack of information on potential utilities issues and site-specific culvert congifuration.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 5 - 95TH / 93RD AVE DRAINAGE IMPROVEMENTS

Prepared by: M. Fontaine
Checked by: M. Ewbank

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
CONSTRUCTION	1	LS	$479,500	$479,500	Construction cost estimate by Brown and Caldwell.
TOTAL DIRECT COSTS:				**$479,500**	
MARKUPS					
MOBILIZATION					
TEMPORARY EROSION AND SEDIMENT CONTROL					
TEMPORARY DEWATERING					
TRAFFIC CONTROL					
CONTINGENCY			15%	$71,925	
SALES TAX			9%	$49,628	
Total Construction Cost:				**$601,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY					
GEOTECHNICAL INVESTIGATION					
PREDESIGN					
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$0	
DESIGN				$0	Completed
PERMITTING			LS	$5,000	Assumes land use application and SEPA checklist.
CONSTRUCTION MANAGEMENT			15%	$90,150	
CITY OF EDMONDS PROJ MNGT			5%	$30,050	
Total Estimated Project Cost:				**$730,000**	

Note.
15% contingency
Applied 15% contingency to cost estimate prepared by Brown and Caldwell.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 6 - CITYWIDE DRAINAGE REPLACEMENT PROJECTS

Prepared by: M. Fontaine
Checked by:

Table 1. Conceptual Cost Estimate

140,000 PER YEAR IN 2010 COSTS - DATABASE WILL APPLY ESCALATION FACTOR

2011	140,000
2012	140,000
2013	140,000
2014	140,000
2015	140,000
2016	140,000

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 7 - LAKE BALLINGER ASSOCIATED PROJECTS

Prepared by: M. Fontaine
Checked by:

Table 1. Conceptual Cost Estimate

100,000 IN 2010 COSTS - DATABASE WILL APPLY ESCALATION FACTOR

2011	100,000
2012	100,000
2013	100,000
2014	100,000
2015	100,000
2016	100,000

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 8 - TIGHTLINE STORM DRAIN ON STEEP SLOPE NEAR CITY OF LYNNWOOD WASTEWATER TREATMENT PLANT

Prepared by: A. Behnke
Checked by: M. Fontaine

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
STRUCTURE EXCAVATION CLASS B INCL. HAUL	50	CY	$40	$ 2,000	Approximately 1/2 of pipe diameter buried between anchors.
SHORING OR EXTRA EXCAVATION TRENCH	800	SF	$1.2	$ 960	8' deep trench and area per each side of trench. SPU unit cost.
REMOVAL OF STRUCTURE AND OBSTRUCTION	200	LF	$5	$ 1,000	Removal of old pipe. Low unit cost for easy removal
CONNECTION TO DRAINAGE STRUCTURE	2	EA	$500	$ 1,000	Connect to 2 existing structures.
SCHEDULE A STORM SEWER PIPE 12 IN. DIAM.	350	LF	$36	$ 12,600	Use corrugated polyethylene storm sewer pipe.
PIPE SADDLE AND ANCHORS	20	EA	$1,800	$ 36,000	Assumes pin pile or helical anchors w/ pipe saddle every 15 lf of pipe. Based on cost estimate from Terracon - James Georgis - 425-771-3304. 2 pin piles or anchors per saddle.
GRAVEL BACKFILL FOR DRAINS	40	CY	$50	$ 2,000	Bedding in pipe trench and minor bedding on hillslope. High end unit cost for difficult placement on slope.
PAVEMENT, HOT MIX ASPHALT	4	TN	$300	$ 1,078	4" thick pavement patch.
CRUSHED SURFACING BASE COURSE	3	CY	$40	$ 111	6" base course for pavement patch.
REMOVE PAVEMENT	17	SY	$25	$ 417	WSDOT UBA.
CLEARING AND GRUBBING	0.06	Acre	$18,000	$ 1,116	Clearing and grubbing hill slope.
PERMANENT EROSION CONTROL BLANKET	333	SY	$7	$ 2,333	Stabilize exposed hill slope area.
PLANTINGS - LIVE STAKES	333	EA	$8	$ 2,667	Reveg hill slope. 3' spacing btwn plants.
TOTAL DIRECT COSTS:				$63,281	
MARKUPS					
MOBILIZATION			8%	$5,063	
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$3,164	
TEMPORARY DEWATERING			5%	$3,164	Work in the dry. Utilize existing pipe.
TRAFFIC CONTROL			3%	$1,898	Work will occur adjacent and within BNSF RR ROW.
CONTINGENCY			50%	$31,641	
SALES TAX			9%	$9,739	
Total Construction Cost:				**$118,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$2,500	
GEOTECHNICAL INVESTIGATION			LS	$5,000	Based on cost estimate from Terracon - James Georgis - 425-771-3304. Includes the completion of 2 to 3 borings along the alignment with a portable "Acker" drill rig and preparation of a geotechnical report
PREDESIGN			5%	$5,900	
OTHER PROJECT COSTS					
TOTAL PREDESIGN			LS	$13,400	
DESIGN			15%	$17,700	
PERMITTING			LS	$5,000	Assumes land use application and SEPA checklist. Assumes geotech report satisfies requirements for landslide hazard areas.
CONSTRUCTION MANAGEMENT			15%	$17,700	
CITY OF EDMONDS PROJ MNGT			5%	$5,900	
Total Estimated Project Cost:				**$180,000**	

Note.
50% contingency

Contingency for this project was selected to account for the uncertainty due to lack of geotechnical information on the steep slope.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 9 - PUBLIC WORKS YARD AND PARKS FACILITY WATER QUALITY UPGRADES

Prepared by: M. Fontaine 4/27/2010

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
Cost from City of Edmonds + Estimate for Parks Covers				$210,000	
TOTAL DIRECT COSTS:				**$210,000**	
MARKUPS					
MOBILIZATION			8%	$16,800	
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$10,500	
TEMPORARY DEWATERING			5%	$10,500	
TRAFFIC CONTROL			0%	$0	
CONTINGENCY			0%	$0	
SALES TAX			9%	$22,302	
Total Construction Cost:				**$270,000**	Make sum to $270,000 based on City est.
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$0	
GEOTECHNICAL INVESTIGATION			LS	$0	
OTHER CONCEPT ENGINEERING/STUDY			5%	$0	
OTHER PROJECT COSTS					
TOTAL PREDESIGN (SURVEY, GEOTECH, OTHER)				$0	
DESIGN			15%	$41,000	
PERMITTING					Assumes no permiting
CONSTRUCTION MANAGEMENT			15%	$41,000	
CITY OF EDMONDS PROJ MNGT			5%	$14,000	
Total Estimated Project Cost:				**$370,000**	

Note.
0% contingency
Assumes City of Edmonds incorporated contingency into estimate.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 10 - SHELL VALLEY EMERGENCY ACCESS ROAD

Prepared by: M. Fontaine
Checked by:

Table 1. Conceptual Cost Estimate

BASED ON ESTIMATE PREPARED BY PERTEET. CITY OF EDMONDS ESTIMATED STORMWATER PORTION AS $195,000.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 11 - STORMWATER UTILITY CONTRIBUTION FOR TRANSPORTATION PROJECTS

Prepared by: M. Fontaine
Checked by:

Table 1. Conceptual Cost Estimate

50,000 PER YEAR IN 2010 COSTS - DATABASE WILL APPLY ESCALATION FACTOR

2011	50,000
2012	50,000
2013	50,000
2014	50,000
2015	50,000
2016	50,000

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 12 - EDMONDS MARSH RESTORATION

Prepared by: M. Fontaine
Checked by: M. Ewbank 3/8/2010

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
FOREST RESTORATION	1	LS	$15,000	$15,000	Willipa Bay planting costs. 2 acres.
SHRUB RESTORATION	1	LS	$30,000	$30,000	Willipa Bay planting costs. 3 acres.
EMERGENT RESTORATION	1	LS	$125,000	$125,000	Willipa Bay planting costs. 15 acres.
GOOSE EXCLOSURES	10	AC	$1,000	$10,000	Willipa Bay planting costs.
FLAP GATE	1	LS	$80,000	$80,000	Skidmore Slough cost estimate. Vendor quote for material - Golden Harvest.
INSTALL FLAP GATE	1	LS	$50,000	$50,000	Engineer's estimate.
DREDGING	5000	CY	$150	$750,000	Dredge 3 acre feet. 500 x 30 x 9.
TOTAL DIRECT COSTS:				**$1,060,000**	
MARKUPS					
MOBILIZATION			8%	$84,800	
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$53,000	
TEMPORARY DEWATERING			3%	$31,800	
TRAFFIC CONTROL			1%	$10,600	
CONTINGENCY			50%	$530,000	
SALES TAX			9%	$159,318	
Total Construction Cost:				**$1,930,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$10,000	
GEOTECHNICAL INVESTIGATION			LS	$0	
PREDESIGN			1%	$19,300	
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$29,300	
DESIGN			15%	$289,500	
					Assumes Clearing and Grading Permit, SEPA Checklist, JARPA, Critical Areas Report, Biological Assessment, Section 106 Cultural Resources Study, and Mitigation plan.
PERMITTING			LS	$150,000	
CONSTRUCTION MANAGEMENT			15%	$289,500	
CITY OF EDMONDS PROJ MNGT			5%	$96,500	
Total Estimated Project Cost:				**$2,780,000**	

Note.
50% contingency
Contingency for this project was selected to account for the uncertainty due to lack of information on excavation quantities, excavation methods, and unit costs for excavation within the wetland.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 13 - DAYLIGHT WILLOW CREEK

Prepared by: N. Christensen
Checked by: A. Behnke, M. Fontaine

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
EXISTING UTILITIES	1100	LF	$55	$60,500	Based on King County Cost Estimating Tool (Tabula 2.0) with Average Utility Complexity
DITCH EXCAVATION	5867	CY	$15	$88,000	Based on WSDOT Unit Bid Analysis. Does not include quantities counted under Topsoil Type B.
HAUL AND DISPOSAL OF NON-CONTAMINATED SOIL	4033	CY	$22	$88,733	RSMeans 2010 Building Construction Cost Data 31 23 23.20.1068 used for hauling. Assumes fluff factor of 25% and 20 mi cycle w/12 CY truck and average speed of 35 mph. Add $10/CY for disposal.
HAUL AND DISPOSAL OF CONTAMINATED SOIL	1833	CY	$100	$183,333	Disposal cost for bottom 3' of excavation. Estimated disposal cost of $60/CY Arcadis – Scott Zorn – 206-726-4709. Based on disposal costs from previous cleanup work performed at the Unocal site. Estimated hauling cost of $40/CY. Assumes disposal at Rinker Materials in Everett., WA Hauling cost based on RSMeans 2010 Building Construction Cost Data 31 23 23.20.1082. Assumes fluff factor of 25% and 12 CY truck w/ average speed of 40 mph.
TOPSOIL TYPE B	5042	CY	$15	$75,625	Based on WSDOT Unit Bid Analysis for excavation and re-application of soil
TOPSOIL TYPE A	825	CY	$35	$28,875	Based on WSDOT Unit Bid Analysis
CLEARING AND GRUBBING	0.28	Acre	$8,000	$2,204	Based on WSDOT Unit Bid Analysis
WASTE MNGT PLANNING	1	LS	$30,000	$30,000	Health and safety plan, contaminated soil mngt plan, contaminated water mngt plan, SWPPP, SPCC Plan.
INITIAL SITE CHARACTERIZATION	1	LS	$30,000	$30,000	Assumes 2 days in the field with geoprobe and 2 laborers. 20 soil. samples. 10 gw samples. $500/sample anlysis. 1 sample site per 100 LF of channel. 1 soil above gw table, 1 soil sample below gw table, and 1 gw sample per location. and 1 water at each location. Tech memo report.
STREAM CHANNEL DEWATERING / FLOW BYPASS	1	LS	$105,600	$105,600	Assume 110 pumps at $480/month for 2 month.
WATER TREATMENT FACILITY	1	LS	$125,000	$125,000	Assumes installation and 2 month of service.
GEOTEXTILE LINER	8037	SY	$18	$144,669	Assumes delivery, material, and installation for Layfield Plastics XR-5 Liner for conservative estimate. Project may be able to use Enviro Liner 6000 at $7/SY.Price quote from Rob Emmons of Layfield Plastics (425) 503-6979.
PERMANENT EROSION CONTROL BLANKET	6207	SY	$7	$43,449	Based on WSDOT Unit Bid Analysis
ABANDON PIPE	698	CY	$136	$95,072	Fill 48" pipe with CDF
STREAMBED COBBLES	733	TON	$35	$25,667	Assumes 6' channel bottom width and sideslopes to a depth of 1'
STREAMBED GRAVEL	1008	TON	$35	$35,292	Assume 100% of side slopes
GRADE CONTROL LOGS	55	Each	$500	$27,500	Assumes 1 log every 20 feet
PLANTINGS - LIVE STAKES	3667	Each	$8	$29,333	Assumes 1 PSIPE live stake planting per SY for top 3' depth of channel plus 6' back from top of bank
SITE RESTORATION	62700	SF	$0.8	$47,025	Based on WSDOT Unit Bid Analysis
TOTAL DIRECT COSTS:				$1,266,000	

PROJECT 13 - DAYLIGHT WILLOW CREEK

Prepared by: N. Christensen
Checked by: A. Behnke, M. Fontaine

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
MARKUPS					
MOBILIZATION			8%	$101,280	Assumes access via the existing former Unocal site.
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$63,300	
STREAM CHANNEL DEWATERING / FLOW BYPASS					See dewatering and treatment line items above.
TRAFFIC CONTROL			0%	$0	Work will occur adjacent and within BNSF RR ROW, but no traffic control required.
CONTINGENCY			50%	$633,000	
SALES TAX			9%	$185,722	
Total Construction Cost:				**$2,250,000**	
PREDESIGN COSTS					
PUBLIC OUTREACH			LS	$60,000	PFPS 2009
SUPPLEMENTAL SITE SURVEY			LS	$10,000	Assumes base mapping requires 2-man crew for 40 hrs, CAD tech for 40 hrs, and project surveyor for 8 hrs.
GEOTECHNICAL INVESTIGATION			LS	$20,000	Determine dewatering pumping rate and make recommendations for construction methods and site stability during construction.
PREDESIGN			LS	$25,000	Assumes alternatives assessment.
			1018%		
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$115,000	
DESIGN			15%	$337,500	
PERMITTING			LS	$100,000	Assumes Clearing and Grading Permit, SEPA Checklist, JARPA, Critical Areas Report, Biological Assessment, and Section 106 Cultural Resources Study.
CONSTRUCTION MANAGEMENT			15%	$337,500	
CITY OF EDMONDS PROJ MNGT			5%	$112,500	
Total Estimated Project Cost:				**$3,250,000**	

Notes.
50% contingency

Contingency for this project was selected because of high level of uncertainty regarding level of soil contamination, dewatering rates and methods, and dewaterting water treatment costs (e.g. items that make up approximately 50% of total project costs.
Estimate does not include pedestrian improvements.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 14 - SHELL CREEK CHANNEL RESTORATION

Prepared by: M. Fontaine
Checked by: M. Ewbank 3/8/2010

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
GRADE CONTROL STRUCTURES	5	EA	$3,500	$17,500	log weirs on 20' spacing along 100' LF of channel
STREAMBED GRAVEL	10	CY	$50	$500	8" depth for 100' LF of stream channel x 4' wide
BANK EXCAVATION	80	CY	$40	$3,200	typical excavation per foot of channel length = 5' high bank * 4' bank face
REMOVE STRUCTURES AND OBSTRUCTIONS	1	LS	$20,000	$20,000	
BIOENGINEERED BANK TREATMENTS	50	LF	$230	$11,500	planting and minor channel improvements included (gravel, wood pieces) along 50 LF of channel.
SEEDING ON DISTURBED GROUND	1000	SF	$2	$2,000	
TOTAL DIRECT COSTS:				**$54,700**	
MARKUPS					
MOBILIZATION			8%	$4,376	
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$2,735	
TEMPORARY DEWATERING			5%	$2,735	
TRAFFIC CONTROL			2%	$1,094	
CONTINGENCY			50%	$27,350	
SALES TAX			9%	$8,369	
Total Construction Cost:				**$101,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$4,000	
GEOTECHNICAL INVESTIGATION			LS	$0	
PREDESIGN			5%	$5,050	
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$9,050	
DESIGN			15%	$15,150	
PERMITTING			LS	$15,000	
CONSTRUCTION MANAGEMENT			15%	$15,150	
CITY OF EDMONDS PROJ MNGT			5%	$5,050	
Total Estimated Project Cost:				**$160,000**	

Note.
50% contingency

Contingency for this project was selected to account for the uncertainty due to lack of information on site geology and size of the channel cross section.

Herrera Environmental Consultants, Inc. 08-04140-000

CLIENT: City of Edmonds
PROJECT: Storm and Surface Water Management Comprehensive Plan - CIP Cost Estimates

PROJECT 15 - PERRINVILLE CREEK HIGH FLOW DIVERSION AND CREEK RESTORATION

Prepared by: M. Fontaine
Checked by: M. Ewbank 3/8/2010

Table 1. Conceptual Cost Estimate

Item	Quantity	Unit	Unit Cost	Amount	Notes
HIGH FLOW DIVERSION STRUCTURE	1	LS	$25,000	$25,000	
42" STORM PIPE ALONG OLY. V. DR.	2800	LF			
			$390	$1,092,000	Includes excavation, installation, and backfill. Unit cost based on estimate in Tabula 3.0.
42" STORM PIPE THROUGH PARK	700	LF	$380	$266,000	Includes excavation, installation, and backfill. Unit cost based on estimate in Tabula 3.0.
42" STORM PIPE THROUGH PRIV. PROP.	1000	LF	$380	$380,000	Includes excavation, installation, and backfill. Unit cost based on estimate in Tabula 3.0.
42" STORM PIPE ROAD CROSSINGS	60	LF	$711	$42,660	Includes excavation, installation, and backfill. Unit cost based on estimate in Tabula 3.0.
LANDSCAPE RESTORATION	622	SY	$30	$18,667	
GRADE CONTROL STRUCTURES	20	EA	$5,000	$100,000	lwd on 50' spacing along 1000 LF of channel length
REPOSITION LWD	20	EA	$1,000	$20,000	lwd repositioning on 50' spacing along 1000 LF of channel length
BANK EXCAVATION	741	CY	$40	$29,630	typical excavation per foot of channel length = 5' high bank * 4' bank face
ACCESS FOR RESTORATION	1	LS	$50,000	$50,000	
BIOENGINEERED BANK TREATMENTS	1000	LF	$300	$300,000	planting and minor channel improvements included (gravel, wood pieces)
TOTAL DIRECT COSTS:				**$2,323,956**	
MARKUPS					
MOBILIZATION			8%	$185,917	
TEMPORARY EROSION AND SEDIMENT CONTROL			5%	$116,198	
TEMPORARY DEWATERING			5%	$116,198	
TRAFFIC CONTROL			2%	$46,479	
CONTINGENCY			100%	$2,323,956	
SALES TAX			9%	$460,143	
Total Construction Cost:				**$5,573,000**	
PREDESIGN COSTS					
SUPPLEMENTAL SITE SURVEY			LS	$25,000	
GEOTECHNICAL INVESTIGATION			LS	$30,000	
PREDESIGN			LS	$50,000	
OTHER PROJECT COSTS					
TOTAL PREDESIGN				$105,000	
DESIGN			15%	$835,950	
PERMITTING			LS	$150,000	
CONSTRUCTION MANAGEMENT			15%	$835,950	
CITY OF EDMONDS PROJ MNGT			5%	$278,650	
Total Estimated Project Cost:				**$7,780,000**	

Note.
100% contingency

Contingency for this project was selected to account for the uncertainty due to lack of information on potential utilities issues and potential access difficulties within Snohomish County Park and Perrinville Creek.

APPENDIX G

Engineering, Public Works Crew, and Information Services Staff Resources Needed to Support the City of Edmonds Stormwater Management Program

Herrera Environmental Consultants, Inc.

Memorandum

To	Jerry Shuster, City of Edmonds
From	Matt Fontaine and Mark Ewbank, Herrera Environmental Consultants
Date	March 19, 2010
Subject	Engineering, Public Works Crew, and Information Services Staff Resources Needed to Support the City of Edmonds Stormwater Management Program

As the City of Edmonds (City) updates its stormwater management program to comply with the requirements of its NPDES Western Washington Phase II Municipal Stormwater Permit (Permit), it is evident that several components of the program require additional staff resources.

This memorandum describes the engineering, public works crew, and information services (IS) labor needed to fully implement the City's stormwater management program. This includes operating and maintaining the City's storm drainage systems in compliance with the Permit and using the City's geographic information system (GIS) to manage information for tracking and reporting that is required by the Permit.

Background

Herrera is assisting the City with updating its stormwater management program and Storm and Surface Water Management Comprehensive Plan, to comply with the requirements of its Permit and to account for ongoing capital improvement projects, operations and maintenance, and IS needs.

To support the City in this effort, Herrera evaluated several components of the City's stormwater management programs and processes in detail, defined gaps in program coverage with respect to the Permit requirements, and developed recommendations and staffing needs estimates to address those gaps. The *Gap Analysis and Needs Assessment* prepared by Herrera for the City on March 30, 2009, includes many recommendations for improving the stormwater management program. In coordination with City staff, Herrera also estimated the engineering, GIS, and public works crew staff labor time needed to meet these additional stormwater management program requirements. Though the GIS work is planned to be part of the Information Services Division of the Finance Department, the GIS staff needs were included in the tabulation of engineering staff needs because the GIS labor would directly support engineering work. The staffing needs estimate (attached to this memorandum) was updated in March 2010 to account for ongoing accomplishments and needs in the stormwater management program.

The City's stormwater management program must change and grow to meet the requirements of the Permit. The Permit includes requirements for five major stormwater management program

components that were evaluated during the gap analysis and staffing estimate and form the heading structure presented in Tables 1, 2, and 3 of the attached staffing estimate.

Methods

Estimates of staff time required to achieve permit compliance are based on the assumption that the City will continue to comply with the requirements of the Permit, and that the Permit will remain the same through the end of 2012. The Washington State Department of Ecology is currently drafting a successor Permit that will replace the current Permit some time after February 2012.

Staffing needs were calculated as the number of full-time-equivalent personnel (FTE) required to complete the Permit related work. The public works crew estimate included ongoing system operation and maintenance work (e.g., routine inspections, catch basin cleaning, and street sweeping) that is NPDES-related and is already being performed, though not at a level that is considered adequate or will meet the future Permit requirements.

It was assumed that 15 percent of staff time in each year is used for vacation, holidays, sick days, training, and other administrative duties (e.g., 1 FTE is calculated as 52 weeks per year times 40 hours per week times 85 percent). Staffing needs were evaluated on a quarterly basis and summarized on an annual basis as shown in the attached tables. Table 1 summarizes the estimated engineering and public works crew staff labor hours needed through 2012. Tables 2 and 3 provide a detailed breakdown of the staff time required to meet each stormwater management program need identified during the gap analysis in March 2009 and reassessed in early 2010.

The current number of staff (as of March 2010) involved in stormwater management program development and implementation was used as a baseline for comparison to the staffing needs. Currently, 1.9 FTE of engineering staff time and 5.4 FTE of public works crew time is available to fulfill the Permit requirements. It is anticipated that the available public works crew resources will remain the same through 2012 unless additional staff are hired. The engineering staff time available for Permit related work is expected to decrease to 1.1 FTE in 2011 and 2012 because some staff time that is currently dedicated to this work must be reallocated to other tasks, such as management of capital improvement projects.

Engineering Staff Needs

It is estimated that engineering staffing must increase to meet the stormwater management program requirements of the Permit though 2012. The staffing needs are:

- 2010: 2.2 FTE (3,900 hours) needed and 1.9 FTE currently available
- 2011: 2.3 FTE (4,100 hours) needed and 1.1 FTE currently available
- 2012: 2.3 FTE (4,100 hours) needed and 1.1 FTE currently available

Engineering staff resources currently dedicated to Permit compliance are expected to be nearly adequate during 2010, with a small portion of 2010 work being delayed until 2011. However, the engineering staff resources must increase by approximately 1.2 FTE in 2011 to meet the Permit requirements through 2011 and 2012. The tasks identified in Tables 1 and 2 represent distinct stormwater management program elements that are required by the Permit and that require engineering staff involvement.

The GIS support time accounts for approximately 0.3 FTE (approximately 600 hours per year) of the total engineering staff need described above during 2011 and 2012 (GIS time makes up 0.3 FTE of the 1.2 FTE engineering staff increase identified above). A summary of the quarterly GIS staffing needs is provided below. This list is annotated with the corresponding Task ID number that can be located in the first column of Table 2:

- IDDE-1. Approximately 50 hours per quarter to update storm drainage systems maps, incorporate additional information collected in the field, and provide information to other illicit discharge detection and elimination (IDDE) team members as requested
- IDDE-3. Approximately 40 hours per quarter to assist with implementation of the IDDE program
- DEV-2. Approximately 20 hours per quarter to assist in preparing and maintaining information used by City staff and development project proponents in designing storm drainage systems, including updating maps, developing maps, and developing an online GIS system that can be used by developers and the Development Services Department for project planning
- PPOM-2. Approximately 20 hours per quarter to record stormwater facility inspection information, provide inspectors with data as needed, and maintain a record keeping system for Permit compliance
- PPOM-8. Approximately 20 hours per quarter to enter records and maintain the record keeping system for regular inspections, maintenance, and repair activities performed on the City's storm drainage systems

If engineering staff time is reallocated in 2010, or if additional staffing or project funding is not available in 2011 and 2012 to meet the Permit requirements, then the unfunded tasks must be addressed during later years and the staffing needs would shift according to the revised schedule. The Permit requirements are expected to become more rigorous under an updated permit scheduled to take effect in 2012, which could further increase engineering staffing needs.

Public Works Crew Needs

It is estimated that public works crew staffing must increase in order to meet the stormwater management program requirements of the Permit through 2012. These staffing needs are:

- 2010: 5.4 FTE (9,500 hours) needed and 5.4 FTE currently available
- 2011: 6.5 FTE (11,500 hours) needed and 5.4 FTE currently available
- 2012: 6.5 FTE (11,500 hours) needed and 5.4 FTE currently available

Public works crew resources currently dedicated to Permit compliance are expected to be adequate during 2010. The public works crew staff resources must increase by 1 FTE in 2011 to meet Permit requirements through 2011 and 2012. The tasks identified in Tables 1 and 3 represent distinct stormwater management program elements that are required by the Permit and that require public works crew staff involvement. Many of these elements are related to operation and maintenance of the City's stormwater systems. Any unfunded tasks must be addressed during later years, and the staffing needs would shift according to the revised schedule. The Permit requirements are expected to become more rigorous under an updated permit that is scheduled to take effect in 2012, which could further increase public works crew needs in years after 2012.

Table 1. Summary of additional staffing needs for setup and implementation of the City of Edmonds' Stormwater Management Program to achieve NPDES permit compliance.

	2010				2011				2012			
Permit Major Requirment	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Stormwater Program Administration and Management												
Engineering hours	290	280	230	220	330	240	250	240	320	240	250	240
PW Crew hours	400	400	400	400	440	440	440	440	440	440	440	440
Total Hours	**690**	**680**	**630**	**620**	**770**	**680**	**690**	**680**	**760**	**680**	**690**	**680**
Public Education and Outreach												
Engineering hours	120	120	48	104	48	48	48	104	48	48	48	104
PW Crew hours	0	0	0	0	0	0	0	0	0	0	0	0
Total Hours	**120**	**120**	**48**	**104**	**48**	**48**	**48**	**104**	**48**	**48**	**48**	**104**
Public Involvement and Participation												
Engineering hours	48	60	72	12	24	16	0	0	24	16	0	0
PW Crew hours	0	0	0	0	0	0	0	0	0	0	0	0
Total Hours	**48**	**60**	**72**	**12**	**24**	**16**	**0**	**0**	**24**	**16**	**0**	**0**
Illicit Discharge Detection and Elimination												
Engineering hours	**136**	**220**	**240**	**176**	**480**	**340**	**340**	**300**	**480**	**340**	**340**	**300**
PW Crew hours	**480**	**480**	**480**	**480**	**440**	**440**	**440**	**440**	**440**	**440**	**440**	**440**
Total Hours	**616**	**700**	**720**	**656**	**920**	**780**	**780**	**740**	**920**	**780**	**780**	**740**
Controlling Runoff from New Development, Redevelopment, and Construction												
Engineering hours	300	250	110	110	138	146	170	146	138	146	170	146
PW Crew hours	108	108	108	116	108	108	108	116	108	108	108	116
Total Hours	**408**	**358**	**218**	**226**	**246**	**254**	**278**	**262**	**246**	**254**	**278**	**262**
Pollution Prevention and Operation and Maintenance for Municipal Operations												
Engineering hours	196	148	148	148	172	148	148	148	172	148	148	148
PW Crew hours	1394	1388	1392	1392	1874	1882	1882	1882	1874	1882	1882	1882
Total Hours	**1590**	**1536**	**1540**	**1540**	**2046**	**2030**	**2030**	**2030**	**2046**	**2030**	**2030**	**2030**
Monitoring												
Engineering hours	0	0	46	70	40	0	0	0	0	0	0	0
PW Crew hours	0	0	0	0	0	0	0	0	0	0	0	0
Total Hours	**0**	**0**	**46**	**70**	**40**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Reporting												
Engineering hours	40	0	0	0	40	0	0	0	60	0	0	0
PW Crew hours	0	0	0	0	0	0	0	0	0	0	0	0
Total Hours	**40**	**0**	**0**	**0**	**40**	**0**	**0**	**0**	**60**	**0**	**0**	**0**
Totals												
Engineering hours	1130	1078	894	840	1272	938	956	938	1242	938	956	938
PW Crew hours	2382	2376	2380	2388	2862	2870	2870	2878	2862	2870	2870	2878
Program Startup hours[1]												
Engineer hours	492	506	278	98	40	0	0	0	0	0	0	0
	Year											
	2010	**2011**	**2012**									
Total Engineering Hours	3900	4100	4100									
Total Engineering FTE	2.2	2.3	2.3									
Total PW Crew Hours	9500	11500	11500									
Total PW Crew FTE	5.4	6.5	6.5									
Grand Total FTE	7.6	8.8	8.8									

Assumptions and Notes.

1. The hours shown for each major permit requirement and the total hours are inclusive of program startup hours.

Table 2. Engineering labor needs for setup and implementation of the City of Edmonds' Stormwater Management Program to achieve NPDES permit compliance. [1,2,3,4]

		2010				2011				2012					
Task ID	Task	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	Phase II Permit Deadline	Assumptions
Stormwater Program Administration and Management															
	Development and management of the stormwater program.	290	280	230	220	330	240	250	240	320	240	250	240	Ongoing	Ongoing management of an NPDES permit compliant stormwater program requires additional engineering staff time for supervision, communications, and prioritization that is equivalent to 35 percent of the time spent on the five primary components listed in the NPDES permit.
Public Education and Outreach															
PE-1	Incorporate additional stormwater education materials into the Discovery Programs and the Watershed Fun Fair.	24	24	24	24	24	24	24	24	24	24	24	24	February 15, 2009	Perform public education and outreach annually.
PE-2	Place a version of the City watershed map on the City website													None	Completed.
PE-3	Advertise the illegal discharge phone number(s) by placing stickers on brochures and handouts distributed by the City.	2	2	2	2	2	2	2	2	2	2	2	2	February 15, 2009	2 hours per quarter to ensure that the stickers are placed on new brochures and available to the public.
PE-4	Identify the list of home-based and mobile businesses and provide public education and outreach materials for them.				16				16				16	February 15, 2009	3 days in 2010 to identify applicable businesses provide outreach materials to them. 2 days during the 4th quarter of each year to identify new businesses and providie material to them.
PE-5	Provide education on yard care techniques that are protective of water quality and pesticide and fertilizer storage, in partnership with Snohomish County.	16	16		16				16				16	February 15, 2009	4 days in early 2010 to identify and order appropriate material. 2 days per year to select new material and update the educational material.
PE-6	Provide information regarding LID techniques (site design, pervious paving, retention of forests and mature trees) on the City website.	24	24		16				16				16	February 15, 2009	6 days in early 2010 to identify and order appropriate material. 2 days per year to select new material and update the educational material.
PE-7	Provide public education regarding stormwater pond maintenance on the City website.	12	12		8				8				8	February 15, 2009	3 days in early 2010 to select appropriate information and coordinate additions to the City website. 1 day per year thereafter to revise the City website.
PE-8	Provide educational materials regarding the noew (or adopted) City Stormwater Management Manual for engineers, contractors, developers, review staff, and land use planners.	16	16	8	8	8	8	8	8	8	8	8	8	February 15, 2009	2 days in early 2010 to select education materials, distribute materials, and field questions. 1 day per quarter thereafter to field questions and update materials.
PE-9	Provide LID educational materials for engineers, contractors, developers, review staff, and land use planners.	16	16	4	4	4	4	4	4	4	4	4	4	February 15, 2009	2 days per quarter for the first two quarters of 2010 to select education materials, distribute materials, and field questions. 4 hours per quarter thereafter to field questions and update materials.
PE-10	Develop and implement methods to measure the understanding and adoption of the targeted behaviors.	8	8	8	8	8	8	8	8	8	8	8	8	February 15, 2009	One day per quarter for meetings and to collect and record data related to measuring education program effectiveness.
PE-11	Update records of public education and outreach activities.	2	2	2	2	2	2	2	2	2	2	2	2	February 15, 2009	Maintain records of all public education and outreach activities listed above as well as any educaitonal activities not listed.
	Total number of hours per quarter for this permit section	**120**	**120**	**48**	**104**	**48**	**48**	**48**	**104**	**48**	**48**	**48**	**104**		
Public Involvement and Participation															
PI-1	Edmonds City Council briefing		16				16				16			None	Annual City Council briefings. Significant preparation for each briefing.
PI-2	Public meetings during the Stormwater Comprehensive Plan update process			12	12									None	2 public meetings and time for preparation at the end of 2010.
PI-3	Periodic updates regarding the Stormwater Comprehensive Plan update process in the Update on Edmonds newsletter	16		16										None	April and October 2010 newsletters
PI-4	Planning board meetings		12	12										None	Meetings in 2nd and 3rd quarter 2010.
PI-5	Development stakeholders meeting		16	16										None	Meetings in 2nd and 3rd quarter 2010.
PI-6	Public hearing on Edmonds Municipal Code updates		16	16										None	Meetings in 2nd and 3rd quarter 2010.
PI-7	Edmonds City Council working session	8												None	1st quarter working session and preparation time.
PI-8	Revised SWMP document and Phase II permit annual report on the City website	24				24				24				None	
	Total number of hours per quarter for this permit section	**48**	**60**	**72**	**12**	**24**	**16**	**0**	**0**	**24**	**16**	**0**	**0**		
Illicit Discharge Detection and Elimination															
IDDE-1	Complete the storm sewer map and verification of the locations and types of catch basins and compile all of this information on a GIS storm sewer map.	80	80	80	80	80	80	80	80	80	80	80	80	February 15, 2011	Moderate effort for coordination with the O&M crew. 50 hours per quarter for GIS time to update the storm sewer map, incorporate additional information collected in the field, and provide information to other IDDE team members as requested.
IDDE-2	Review the current illicit discharge ordinance for consistency with Ecology's guidance and revise, if necessary.													August 15, 2009	Completed.
IDDE-3	Develop and implement an ongoing program to detect and eliminate illicit discharges.	40	60	80	80	80	80	80	80	80	80	80	80	August 19, 2011	Oversight of project work conducted by Herrera in 2010. Implement IDDE during 2011. Includes 40 hours per quarter of GIS time to assist with implementation of the IDDE program. Assumes workload is ongoing after 2011.
IDDE-4	Develop a prioritized list of water bodies and associated drainage areas for IDDE focus.					100				100				February 15, 2010	Develop prioritization framework. Analyze GIS data. Perform additional field work. Update the prioritized list annually based on new priorities, new information, and new facilities.
IDDE-5	Conduct field assessment on three high-priority water bodies.		80	80	16									February 15, 2011	Preparation for field assessments. Planning and oversight of field crews. Analysis of results
IDDE-6	Conduct field assessment on one site per year. Oversee field crews during investigation and detection in response to reports of illicit discharge. Conduct elimination and enforcement activities.					40	80	80	40	40	80	80	40	After February 15, 2011	Preparation for field assessments. Planning and oversight of field crews. Analysis of results. Includes significant time for oversight of investigation and enforcement of illicit discharges reported by the public and City staff.
IDDE-7	Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste.					80	80	80	80	80	80	80	80	August 19, 2011	Development of public education materials. Develop an approach for efficiently and effectively distributing information. Conduct ongoing education and outreach with businesses, homeowners, and city staff.
IDDE-8	Advertise the illegal discharge phone number(s) by placing stickers on brochures and handouts distributed by the City.													February 15, 2009	Staff time included under PE-3 above.
IDDE-9	Adopt procedures for IDDE program evaluation (number and type of spills, ID, inspections, and feedback from public education efforts).					20	20	20	20	20	20	20	20	August 19, 2011	Staff time to oversee development of procedures for performing program evaluation and implementing those procedures.
IDDE-10	Conduct training for all municipal staff who are responsible for identification, investigation, termination, cleanup, and reporting illicit discharges.	8				40				40				August 15, 2009	Initial IDDE response level training is developed and performed by a consultant. Refresher training is updated and performed internally and included field time.

Table 2 (continued). Engineering labor needs for setup and implementation of the City of Edmonds' Stormwater Management Program to achieve NPDES permit compliance. [1,2,3,4]

		2010				2011				2012					
Task ID	Task	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	Phase II Permit Deadline	Assumptions
Illicit Discharge Detection and Elimination (continued)															
IDDE-11	Conduct training for all municipal staff who might come in contact with or observe an illicit discharge/connection on the proper procedures for identifying, reporting, and responding to the illicit discharge/connection.	8				40				40				February 15, 2010	Initial IDDE awareness level training is developed and performed by a consultant. Refresher training is updated and performed internally and includes field time.
	Total number of hours per quarter for this permit section	**136**	**220**	**240**	**176**	**480**	**340**	**340**	**300**	**480**	**340**	**340**	**300**		
Controlling Runoff from New Development, Redevelopment, and Construction Sites															
DEV-1	Develop and adopt a new ordinance or ordinance revisions that address runoff from new development, redevelopment, and construction projects.	100	50											February 16, 2010	Oversight of project work conducted by Herrera.
DEV-2	Adopt a site planning process and selection and design criteria for BMPs that will protect water quality and reduce the discharge of pollutants to the maximum extent practicable.	40	40	30	30	30	30	30	30	30	30	30	30	February 16, 2010	Oversight of project work conducted by Herrera and other supplemental work performed internally. 20 hours per quarter of long term GIS support starting in the 2nd quarter of 2010 for development review, including updating maps, developing maps, and developing an online GIS system that can be used by developers and the planning department for project planning.
DEV-3	Develop provisions for LID techniques that take into account site conditions, access, and long-term maintenance.	40	40	40	40	60	60	60	60	60	60	60	60	February 16, 2010	Oversight of project work conducted by Herrera in the 1st and 2nd quarter of 2010. 60 hours per quarter in 2011 and 2012 for ongoing LID training, improvements to LID tools, outreach and education to the public, and improvements to the LID program. Assumes that LID takes root more and more, especially on numerous small sites.
DEV-4	Review the inspection record-keeping system to determine whether 80 percent of sites are inspected.				8				8				8	February 16, 2010	Review at end of each year to incorporate results into the Annual Report.
DEV-5	Require formal maintenance plans upon completion of construction for permanent stormwater controls such as stormwater treatment and detention facilities and other structural BMPs.	8	8	8	8	8	8	8	8	8	8	8	8	February 16, 2010	8 hours per quarter to coordinate with development services department and verify maintenance plans are being developed and filed.
DEV-6	Establish maintenance standards equivalent to those specified in the Stormwater Management Manual for Western Washington (Ecology 2005).	8	8											February 16, 2010	Develop standards directly from the inspection tables in the Stormwater Management Manual for Western Washington. Assumes few additional maintenance standards are be required.
DEV-7	Encourage and enforce increased frequency of privately owned stormwater treatment and flow control facility inspections to an annual basis, unless there are maintenance records to justify a different frequency.	16	16	16	16	24	24	24	24	24	24	24	24	February 16, 2010	24 hours per quarter for administration of requirements for private facilties, including oversight, outreach, education, inspection, and enforcement on private developments.
DEV-8	Increase frequency of flow control and water quality treatment facility inspections for new residential developments (that are part of a larger common plan of development or sale) to once every 6 months during the period of heaviest home construction. Includes time spent on education, outreach, and inspection for stormwater management on small sites.	8	8	8	8	16	24	24	16	16	24	24	16	February 16, 2010	Coordination with the City Development Services Department and O&M field crews. Heaviest period of home construction during the spring and summer. Time spent coordinating with small site developers will increase in 2011.
DEV-9	Ensure training is provided to all City staff who are responsible for implementing the program to control stormwater runoff from new development, redevelopment, and construction sites, including staff involved with permitting, plan review, construction site inspections, and enforcement, and develop and implement a system for tracking this training.	80	80	8				24				24		February 16, 2010	Develop appropriate training and conduct training in 1st and 2nd quarter 2010. Refresher training annually and update records.
	Total number of hours per quarter	**300**	**250**	**110**	**110**	**138**	**146**	**170**	**146**	**138**	**146**	**170**	**146**		
Pollution Prevention and Operation and Maintenance for Municipal Operations															
PPOM-1	Revise maintenance standards to be equivalent with the Stormwater Management Manual for Western Washington (Ecology 2005).	16												February 15, 2010	
PPOM-2	Conduct annual inspections of stormwater treatment and flow control facilities.	60	60	60	60	60	60	60	60	60	60	60	60	February 15, 2010	40 hours per quarter for engineering hours in 2011 and 2012. Includes oversight of field crews and record keeping. 20 hours per quarter of GIS time to record inspections, provide inspectors with data as needed, and maintain record keeping system.
PPOM-4	Formalize practices to reduce impacts due to runoff from streets, parking lots, and highways owned or maintained by the City and road maintenance activities listed in the Phase II permit.	20	20	20	20	20	20	20	20	20	20	20	20	February 15, 2010	Audit procedures and check in with Public Works staff regularly.
PPOM-5	Establish and implement policies and procedures to reduce pollutants in discharges from lands owned and maintained by the City for activities listed in the Phase II permit.	20	20	20	20	20	20	20	20	20	20	20	20	February 15, 2010	Audit procedures and check in with Public Works staff regularly.
PPOM-6	Develop and implement a training program for construction and operation and maintenance staff.	24				16				16				February 15, 2010	Training is developed internally. Training program is assembled from training material that is readily available from federal and state agencies. Review and update training program annually.
PPOM-7	Develop and implement a municipal stormwater pollution prevention plan for all heavy equipment maintenance or storage yards and material storage facilities owned or operated by the City.	16	8	8	8	16	8	8	8	16	8	8	8	February 15, 2010	Review procedures and checklists quarterly and conduct on the job training annually during 1st quarter.
PPOM-8	Maintain records of inspections and maintenance or repair activities.	40	40	40	40	40	40	40	40	40	40	40	40	February 15, 2010	20 hours per quarter spent working with public works crews in 2011 and 2012. 20 hours per quarter of GIS time to enter records and maintain the record keeping system.
	Total number of hours per quarter for this permit section	**196**	**148**	**148**	**148**	**172**	**148**	**148**	**148**	**172**	**148**	**148**	**148**		
Monitoring															
MON-1	Identify two outfall or conveyance locations suitable for long-term monitoring (one commercial and one high-density residential).			16	40									December 31, 2010	Use GIS to analyze land use and potential to generate stormwater pollution in order to identify two outfalls.
MON-2	Identify two suitable questions to monitor for SWMP effectiveness, select sites to monitor, and develop a monitoring plan for each question.			30	30									December 31, 2010	Moderate level of effort to develop appropriate monitoring questions and a monitoring plan.
MON-3	Describe the status of identification of sites for stormwater monitoring, include a summary of the proposed questions for the SWMP effectiveness monitoring, and describe the status of the development of the SWMP effectiveness monitoring plan in the fourth annual report.					40								March 31, 2011	Assemble information related to the selected long term monitoring locations and develop a summary of the monitoring questions and plan. Insert this information into the annual report.
	Total number of hours per quarter for this permit section	**0**	**0**	**46**	**70**	**40**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		

Table 2 (continued). Engineering labor needs for setup and implementation of the City of Edmonds' Stormwater Management Program to achieve NPDES permit compliance. [1,2,3,4]

		2010				2011				2012					
Task ID	Task	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	Phase II Permit Deadline	Assumptions
Reporting															
RPT-2	Submit third annual report and copy of current SWMP document.	40												March 31, 2010	Update the previous annual report with new accomplishments and planned activities.
RPT-3	Submit fourth annual report and copy of current SWMP document.					40								March 31, 2011	Update the previous annual report with new accomplishments and planned activities.
RPT-4	Submit fourth annual report and copy of current SWMP document.									60				March 31, 2012	Update the previous annual report with new accomplishments and planned activities. Additional time to address requirements of the new permit.
	Total number of hours per quarter for this permit section	**40**	**0**	**0**	**0**	**40**	**0**	**0**	**0**	**60**	**0**	**0**	**0**		
	Total number of hours per quarter for all permit activities	1130	1078	894	840	1272	938	956	938	1242	938	956	938		
	Total number of FTE per quarter for all permit activities	2.6	2.4	2.0	1.9	2.9	2.1	2.2	2.1	2.8	2.1	2.2	2.1		
	Total number of hours per quarter for program startup	492	506	278	98	40	0	0	0	0	0	0	0		
	Percentage of hours per quarter for program startup	44%	47%	31%	12%	3%	0%	0%	0%	0%	0%	0%	0%		
	Total number of hours per year for all permit activities				**3,900**				**4,100**				**4,100**		
	Total number of FTE per year for all permit activities				**2.2**				**2.3**				**2.3**		

Assumptions and Notes.

1. Activities will be performed at a rate that meets the requirements of the NPDES Phase II Permit.
2. FTE estimates assume 15% of staff time in each quarter is used for vacation, holidays, sick days, training, other admin duties (e.g., FTE calculated as # weeks times 40 hours per week times 85%)
3. Assumes that 2012 Engineering hours will be the same as in 2011 despite the likelihood that a new NPDES Phase II Permit will be issued in 2012.
4. Underlined values represent hours spent on program startup activities. Ongoing program implementation hours are represented in normal text.

Table 3. Public works crew labor needs for implementation of the City of Edmonds' Stormwater Management Program to achieve NPDES permit compliance. [1,2,3]

		2010				2011				2012					
Task ID	Task	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	Phase II Permit Deadline	Assumptions
Public Works Crew Management and Supervision															
	Management and oversight of NPDES related work performed by public works crews.	400	400	400	400	440	440	440	440	440	440	440	440		
Illicit Discharge Detection and Elimination															
IDDE-1	Complete the storm sewer map and verification of the locations and types of catch basins and compile all of this information on a GIS storm sewer map.	440	440	280	440	220	220	220	220	220	220	220	220	February 15, 2011	Assumes 1 FTE in 2010 and 0.5 FTE thereafter for system mapping. Higher level of effort in 2010 to identify and fill data gaps. Lower level of effort after 2010 to maintain the map, input data received from the field, and assist field crews.
IDDE-5	Conduct field assessment on three high-priority water bodies.			160										February 15, 2011	2 person crew for approximately 3 days per high priority water body.
IDDE-6	Conduct field assessment on one high priority site per year. Includes time for investigation and elimination of additional illicit discharges that are reported by the public (i.e. IDDE calls) and City staff on a regular basis.	40	40	40	40	220	220	220	220	220	220	220	220	After February 15, 2011	2 person crew for two weeks in 2010 and 11 weeks each year therafter to conduct thorough inspections of one priority water body per year and to conduct inspections in response to illicit discharge reports recieved from the public and City staff.
IDDE-10	Conduct training for all municipal staff who are responsible for identification, investigation, termination, cleanup, and reporting illicit discharges.													August 15, 2009	Hours not included for O&M staff attending training.
IDDE-11	Conduct training for all municipal staff who might come in contact with or observe an illicit discharge/connection on the proper procedures for identifying, reporting, and responding to the illicit discharge/connection.													February 15, 2010	Hours not included for O&M staff attending training.
	Total number of hours per quarter for this permit section	**480**	**480**	**480**	**480**	**440**	**440**	**440**	**440**	**440**	**440**	**440**	**440**		
Controlling Runoff from New Development, Redevelopment, and Construction															
Dev-4	Review the inspection record-keeping system to determine whether 80 percent of sites are inspected annually. Provide feedback to engineering.				8				8				8		8 hours per year to review recordkeeping system and provide feedback to engineering prior to the annual report.
DEV-7	Encourage and enforce increased frequency of privately owned stormwater treatment and flow control facility inspections to an annual basis, unless there are maintenance records to justify a different frequency. Includes time spent responding to problems and assisting private site owners with inspection guidance.	100	100	100	100	100	100	100	100	100	100	100	100	February 16, 2010	Approximately 0.25 FTE for inspection or enforcement of private facility maintenance requirements. Includes time for response to drainage problems related to private facility maintenance.
DEV-8	Increase frequency of flow control and water quality treatment facility inspections for new residential developments (that are part of a larger common plan of development or sale) to once every 6 months during the period of heaviest home construction.	8	8	8	8	8	8	8	8	8	8	8	8	February 16, 2010	8 hours per quarter for inspection of several sites per year.
DEV-9	Ensure training is provided to all City staff who are responsible for implementing the program to control stormwater runoff from new development, redevelopment, and construction sites, including staff involved with permitting, plan review, construction site inspections, and enforcement, and develop and implement a system for tracking this training.													February 16, 2010	Hours not included for O&M staff attending training.
	Total number of hours per quarter for this permit section	**108**	**108**	**108**	**116**	**108**	**108**	**108**	**116**	**108**	**108**	**108**	**116**		

Table 3 (continued). Public works crew labor needs for implementation of the City of Edmonds' Stormwater Management Program to achieve NPDES permit compliance. [1,2,3]

		2010				2011				2012					
Task ID	Task	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	Phase II Permit Deadline	Assumptions
Pollution Prevention and Operation and Maintenance for Municipal Operations															
PPOM-2	Conduct annual inspections of stormwater treatment and flow control facilities. Includes regular catch basin cleaning. Includes regular street sweeping. Includes time spent doing additional maintenance of public stormwater facilities in order to meet permit requirements.	970	940	1030	1070	1500	1560	1520	1560	1450	1560	1520	1560	February 15, 2010	Assumes an additional 0.25 FTE per year is required to conduct more rigirous inspections of public facilities and perform record keeping. Includes time spent on annual inspection and maintenance of catch basins and vaults, and time spent street sweeping that is not accounted for in other PPOM activities. Assumes significant additional time will be required to inspect and maintain stormwater facilities in compliance with the permit standards. Assumes fewer hours when publics works crews are performing other PPOM activities.
PPOM-3	Establish and implement a system to track inspection and maintenance related to the Phase II permit requirements.	40	40	16	16	16	16	16	16	16	16	16	16	February 15, 2010	Develop an effective system for tracking inspection and maintenance and work closely with engineering to ensure the system and implementation will meet permit requirements. Review records and check-in with field crews regularly thereafter. Includes 16 hours per quarter for GIS time.
PPOM-4	Formalize practices to reduce impacts due to runoff from streets, parking lots, and highways owned or maintained by the City and road maintenance activities listed in the Phase II permit.	300	300	250	250	250	250	250	250	300	250	250	250	February 15, 2010	Accounts for additional time spent following new or modified pollution prevention practices in all public works crew activities related to maintenance of roads. Assumes that additional staff time is spent during the first quarter each year updating the pollution prevention practices and training plans. Includes some time spent street sweeping.
PPOM-5	Establish and implement policies and procedures to reduce pollutants in discharges from lands owned and maintained by the City for activities listed in the Phase II permit.	60	60	8	8	60	8	8	8	60	8	8	8	February 15, 2010	Accounts for additional time spent following new or modified pollution prevention practices in all public works crew activities related to maintenance of land and buildings. Assumes that additional staff time is spent during the first quarter each year updating the pollution prevention practices and training plans.
PPOM-6	Develop and implement a training program for construction and operation and maintenance staff.			40				40				40		February 15, 2010	40 hours per year for public works crew to attend annual refresher training.
PPOM-7	Develop and implement a municipal stormwater pollution prevention plan for all heavy equipment maintenance or storage yards and material storage facilities owned or operated by the City.		24	24	24	24	24	24	24	24	24	24	24	February 15, 2010	3 days per quarter to implement and follow additional operations BMPs and to perform regular inspections of equipment and facilities.
PPOM-8	Maintain records of inspections and maintenance or repair activities.	24	24	24	24	24	24	24	24	24	24	24	24	February 15, 2010	Three days per quarter for additional record keeping duties. Additional recordkeeping is the responsibility of engineering staff. See Table 1.
	Total number of hours per quarter for this permit section	**1394**	**1388**	**1392**	**1392**	**1874**	**1882**	**1882**	**1882**	**1874**	**1882**	**1882**	**1882**		
	Total number of hours per quarter for all permit activities	2382	2376	2380	2388	2862	2870	2870	2878	2862	2870	2870	2878		
	Total number of FTE per quarter for all permit activities	5.4	5.4	5.4	5.4	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5		
	Total number of hours per year for all permit activities				9,500				11,500				11,500		
	Total number of FTE per year for all permit activities				**5.4**				**6.5**				**6.5**		

Assumptions and Notes.
1. Activities will be performed at a rate that meets the requirements of the NPDES Phase II Permit.
2. FTE estimates assume 15% of staff time in each quarter is used for vacation, holidays, sick days, training, other admin duties (e.g., FTE calculated as 52 weeks per year times 40 hours per week times 85%)
3. Assumes that 2012 Public Works Crew hours will be the same as 2011 despite the likelihood that a new NPDES Phase II Permit will be issued in 2012.

APPENDIX H

Funding Analysis Documentation

Financial Plan

INTRODUCTION

The objective of the stormwater system financial plan is first to identify the total cost of providing stormwater service, and then to present a financial program that allows the stormwater utility to remain financially viable during the execution of its 6-year Capital Improvement Program (CIP). This viability analysis considers the historical financial condition of the utility, the sufficiency of utility revenues to meet current and future financial and policy obligations, and the financial impact of executing the CIP.

PAST FINANCIAL PERFORMANCE

The City of Edmonds legally owns and operates a combined utility fund that includes the water, sewer, and stormwater utilities. Therefore, standard financial statements are not readily available for the stormwater utility alone. Financial information regarding an individual utility is available in the form of utility accounting reports at a sub-account level of detail. Using these reports and detailed utility financial data provided by City staff, we tried to construct a simple financial report mimicking income and cash flow statements.

Table 1 summarizes the stormwater utility's historical revenues, operating expenses, and transfer and debt service payments.

Table 1
Historical Financial Performance; 2004 - 2009

	2004	2005	2006	2007	2008	2009
Stormwater Sales	**$ 1,610,046**	**$ 1,723,768**	**$ 1,900,397**	**$ 1,890,931**	**$ 1,955,284**	**$ 2,022,787**
Stormwater Utility Tax Collections	-	-	-	113,222	117,125	202,352
Miscellaneous Revenues	41,531	57,092	78,454	102,525	68,634	89,184
TOTAL REVENUES	**$ 1,651,577**	**$ 1,780,861**	**$ 1,978,851**	**$ 2,106,679**	**$ 2,141,043**	**$ 2,314,323**
OPERATING EXPENDITURES						
Salaries and Wages	$ 360,787	$ 387,013	$ 427,805	$ 405,651	$ 387,384	$ 420,911
Benefits	105,095	116,107	145,180	148,830	166,941	169,455
Supplies	44,019	42,801	35,168	42,400	17,788	37,209
Services	110,200	146,855	150,210	156,255	185,454	193,235
Intergovernmental Services	17,940	18,494	14,708	130,886	150,756	241,781
Building, Machinery, & Equipment	-	-	-	1,470	5,336	-
Interfund Services & Rentals	567,926	524,923	521,720	780,179	595,107	554,320
TOTAL OPERATING EXPENDITURES	**$ 1,205,967**	**$ 1,236,192**	**$ 1,294,790**	**$ 1,665,670**	**$ 1,508,765**	**$ 1,616,912**
OPERATING SURPLUS / (DEFICIT)	**$ 445,610**	**$ 544,668**	**$ 684,061**	**$ 441,009**	**$ 632,278**	**$ 697,412**
Debt Service Interest	$ 48,014	$ 42,629	$ 42,952	$ 101,775	$ 101,998	$ 97,470
Total Operating Expenses and Debt Interest	**$ 1,253,981**	**$ 1,278,821**	**$ 1,337,743**	**$ 1,767,445**	**$ 1,610,763**	**$ 1,714,381**
Surplus / (Deficit)	**$ 397,596**	**$ 502,040**	**$ 641,108**	**$ 339,234**	**$ 530,280**	**$ 599,942**
Interfund Transfer Out for Capital	$ 112,425	$ 9,660	$ 112,500	$ 1,765,000	$ -	$ 500,000
Operating Expenses, Debt Interest, & Interfund Transfers	**$ 1,366,406**	**$ 1,288,481**	**$ 1,450,243**	**$ 3,532,445**	**$ 1,610,763**	**$ 2,214,381**
Surplus / (Deficit)	**$ 285,171**	**$ 492,380**	**$ 528,608**	**$ (1,425,766)**	**$ 530,280**	**$ 99,942**
Debt Service Principal	$ 48,327	$ 42,364	$ 93,432	$ 137,264	$ 161,213	$ 164,328
TOTAL CASH OUTLAY	**$ 1,414,733**	**$ 1,330,845**	**$ 1,543,675**	**$ 3,669,709**	**$ 1,771,975**	**$ 2,378,709**
Surplus / (Deficit)	**$ 236,844**	**$ 450,016**	**$ 435,176**	**$ (1,563,030)**	**$ 369,068**	**$ (64,386)**

The stormwater utility's rate revenues increased from $1.6 million in 2004 to $2.0 million in 2009. The City implemented three (3) rate adjustments within this period; a 7.0% increase in March 2005, an 8.0% increase in January 2006, and another 6.82% increase in July 2009. The increasing trend in rate revenues reflects these rate adjustments. Historically, the City's growth rate has been low. Growth in the customer base has not been an important factor in the increases in rate revenues.

The City started implementing a 6% utility tax on the stormwater utility in January 2007, and increased the tax rate to 10% in January 2009. The utility tax is collected directly from utility customers and transferred to the general fund. Hence, the net financial impact of the tax on utility finances is neutral.

Since the City owns and operates a combined utility fund, miscellaneous revenues have been reported on a combined basis which includes water, sewer, and stormwater utilities. To be able to conduct this historical financial analysis, we allocated miscellaneous revenues to the stormwater utility based on the utility's share of the combined rate revenues of the three utilities. Miscellaneous revenues have fluctuated between $41,500 to $102,5000. On average, the utility earned approximately $73,000 in miscellaneous revenues in the last six years.

Total operating expenditures steadily increased from $1.65 million in 2004 to $2.3 million in 2009. This increase mostly stemmed from the rate adjustments and implementation of City utility taxes (as explained earlier).

Personnel costs (salaries and wages, and benefits costs) and interfund services and rentals constitute the largest portions of the utility's operating costs. On average personnel costs represent approximately 38% of the total opearting expenditures, while interfund services and rentals constitute nearly 42% of the total operating expenditures.

Salaries and wages showed an increasing trend in the first three years of the analysis period, peaking at $428,000 in 2006. From this peak, it dropped approximately 5% a year in in the next two years, and by 2008 it reached to its 2005 level of $387,000. In 2009, salary and wages increased by almost 9% and reached $421,000 which is slightly lower than its peak in 2006.

Benefits costs, on the other hand, steadily increased over the last six years. As a result of the steep increases in health care costs observed in recent years, the utility's labor benefits costs increased considerably; from $105,000 in 2004 to $167,000 in 2009. The average rate of increase in the last five years is 10%, and the total percentage increase between 2004 and 2009 is 61%.

Intergovernmental services increased significantly in 2007 reflecting the transfers to the general fund of City utility tax collections. This line item rose noticably in 2009 again as a result of the increase in the utility tax rate, from 6% to 10% (as discussed earlier).

Other operating and maintenance expenditure line items have been steady over the last 6 years, and they did not change significantly.

Over the last six years, the utility posted operating surpluses ($575,000 on average). These surpluses have been used to make debt service payments (principal and interest), and transferred to the capital construction fund for funding the utility's capital projects.

Over the last six years, the City transferred approximately $2.5 million from the stormwater utility's operating fund to the capital construction fund to pay for the utility's capital needs. Of this amount, approximately $1.7 million is the proceeds from the long-term general obligation bond issued in 2007. The reminder of the capital fund transfers have been funded by the operating surpluses.

The increases in the interest payments on outstanding debt and debt principal payments reflect the 2007 borrowing to finance the capital expenditures. The utility's annual debt service payments have been around $260,000 a year after the 2007 bond issue.

As can be seen in the table 1 above, the utility posted cash deficiencies in 2007 and 2009 after paying for its operating expenditures, servicing its debt, and transferring monies for capital needs. The cash deficiency in 2007 was funded by the bond issue as discussed above. In 2009, the utility used its available cash reserves to finance its operations and capital spending. With the increased debt service payments, anticipated increases in operating expenses and substantial capital investments required to meet regulatory requirements (as identified in this comprehensive plan), it is projected that the utility will not be able to sustain its financial position with current revenue levels. To be able to finance the proposed capital projects and maintain a financially prudent and solid utility, the City will need a series of rate increases. The analysis of the utility's capital funding needs and other financial requirements, and hence projected rate adjustments are provided later in this chapter.

CAPITAL FUNDING RESOURCES

The City may fund the stormwater CIP from variety of sources. In general, these sources can be summarized as: 1) governmental grant and loan programs; 2) publicly issued debt (tax exempt or taxable); and 3) cash resources and revenues. These sources are described below.

Government Programs

Historically, federal and state grant programs were available to local utilities for capital funding assistance. However due to budgetary constraints, these assistance programs have been mostly eliminated, substantially reduced in scope and amount, or replaced by loan programs. Remaining miscellaneous grant programs are generally lightly funded and heavily subscribed. Nonetheless, the benefit of even the very low-interest loans makes the effort of applying worthwhile. The major funding sources are as follows:

Department of Ecology Grants and Loans - The Washington Department of Ecology (Ecology) administers an integrated funding program for three state and federal financial assistance programs to improve and protect water quality. Each funding cycle begins in the fall when Ecology accepts project applications. Ecology rates aand ranks applications based on the highest-priority needs: Projects include stormwater control and treatment, nonpoint pollution abatement and stream restoration activities, and water quality education and outreach. The amount of available grant and loan funding varies from year to year based on the state's biennial budget appropriation process and the annual congressional federal budget. The three sources of funding for water quality projects are

- Centenial Clean Water Grant Program,
- Federal Clean Water Act Section 319 Nonpoint-Source Grant Program, and
- Washington State Water Pollution Control Revolving Fund Loan Program.

Further detail on these funding sources and conditions of funding is available at http://www.ecy.wa.gov/programs/wq/funding/FundingPrograms/FundingProgramsMain.html and http://www.ecy.wa.gov/biblio/1010036.html .

Public Works Trust Fund – Cities, towns, counties and special purpose districts are eligible to receive loans. Water, sewer, storm, roads, bridges and solid waste/recycling are eligible and funds may be used for repair, replacement, rehabilitation, reconstruction and improvements including reasonable growth (generally the 20-year growth projection in the comprehensive plan).

PWTF loans are available at interest rates of 0.5%, 1% and 2% with the lower interest rates given to applicants who pay a larger share of the total project costs. The loan applicant must provide a minimum local match of funds of 5% towards the project cost to qualify for a 2% loan, 10% for a 1% loan, and 15% for a 0.5% loan. The useful life of the project determines the loan term up to a maximum of 20 years.

Further detail is available at http://www.commerce.wa.gov/site/361/default.aspx.

Public Debt

General Obligation Bonds – General obligation (G.O.) bonds are bonds secured by the full faith and credit of the issuing agency, committing all available tax and revenue resources to debt repayment. With this high level of commitment, G.O. bonds have relatively low interest rates and few financial restrictions. However, the authority to issue councilmanic G.O. bonds is restricted in terms of the amount and use of the funds, as defined by the Washington State constitution and statute. Specifically, the amount of debt that can be issued without a public vote is linked to assessed valuation.

RCW 39.36.020 states:

> *"(ii) Counties, cities, and towns are limited to an indebtedness amount not exceeding one and one-half percent of the value of the taxable property in such counties, cities, or towns without the assent of three-fifths of the voters therein voting at an election held for that purpose.*
>
> *(b) In cases requiring such assent counties, cities, towns, and public hospital districts are limited to a total indebtedness of two and one-half percent of the value of the taxable property therein."*

While bonding capacity can limit availability of councilmanic G.O. bonds for utility purposes, these can sometimes play a valuable role in project financing. A rate savings may be realized through two avenues: the lower interest rate and related bond costs; and the

extension of the repayment obligation to all tax-paying properties (not just developed properties) through the authorization of an ad valorem property tax levy.

Revenue Bonds – Revenue bonds are commonly used to fund utility capital improvements. The debt is secured by the rate revenues of the issuing utility and the debt obligation does not extend to the City's other revenue sources. With this limited commitment, revenue bonds typically bear higher interest rates than G.O. bonds and also require security conditions related to the maintenance of dedicated reserves (a bond reserve) and financial performance (added bond debt service coverage). The City agrees to satisfy these requirements by ordinance as a condition of bond sale.

Revenue bonds can be issued in Washington without a public vote. There is no bonding limit, except perhaps the practical limit of the utility's ability to generate sufficient revenue to repay the debt and provide coverage. In some cases, poor credit might make issuing bonds problematic.

Build America Bonds – (from munibondadvisor.com) The Economic Recovery and Reinvestment Act (the "Act") created a new form of bonds known as Build America Bonds ("BABs"). Build America Bonds are taxable and, through Federal subsidies or tax credits, are intended to reduce municipal borrowing costs.

The Act created two types of BABs. The first type of BAB provides a Federal subsidy to investors equal to 35% of the interest payable by the issuer ("Tax Credit BAB"). The second type of BAB provides a direct Federal subsidy that will be paid to state and local governments in an amount equal to 35% of the interest ("Direct Payment BAB"). Both types of BABs must be issued before January 1, 2011.

Tax Credit BABs provide a 35% interest subsidy (net of the tax credit) to investors that results in a Federal subsidy to the issuer equal to approximately 25% of the total return to the investor (interest and the tax credit). Tax Credit BABs may be issued to finance any governmental purpose for which tax-exempt government bonds (excluding private activity bonds) could be issued including current refundings and one advance refunding. The bonds must comply with all requirements applicable to the issuance of tax-exempt governmental bonds.

Direct Payment BABs offer a larger Federal subsidy than Tax Credit BABs; however, they are subject to more restrictions. In general, Direct Payment BABs may be issued to finance capital expenditures for any governmental purpose for which tax-exempt government bonds may be issued, excluding private activity bonds and excluding refunding bonds. Costs of issuance paid from Direct Payment BAB proceeds are limited to 2%. In order to receive a Federal subsidy, issuers will be required to submit a payment request form no earlier than 90 days, and no later than 45 days, before each interest payment date. Issuers will receive the requested payment within 45 days of the date the form is filed with the Internal Revenue Service. In the future, the payment procedures may be changed to an electronic platform.

Financing for a project may be subdivided into two issues; one comprised of traditional tax-exempt municipal bonds and one comprised of BABs.

Further detail is available at http://www.munibondadvisor.com/BuildAmericaBonds.htm.

Cash Resources

Capital Facilities Charges – A capital facilities charge (CFC) as provided for by RCW 35.92.025, refers to a one-time charge imposed on new customers as a condition of connection to the utility system. The purpose of the CFC is two-fold: (1) to promote equity between new and existing customers; and (2) to provide a source of revenue to fund capital projects. Equity is served by providing a vehicle for new customers to share in the capital costs incurred to support their addition to the system. CFC revenues provide a source of cash flow used to support utility capital needs; revenue can only be used to fund utility capital projects or to pay debt service incurred to finance those projects.

In the absence of a CFC, growth-related capital costs must be borne in large part by existing customers. In addition, the net investment in the utility already collected from existing customers, whether through rates, charges and/or assessments, would be diluted by the addition of new customers, effectively subsidizing new customers with prior customers' payments. To establish equity, a CFC should recover a proportionate share of the existing and future infrastructure costs from a new customer. From a financial perspective, a new customer should become financially equivalent to an existing customer by paying the CFC.

The City currently imposes a charge of $428 per ESU (equivalent service unit) stormwater capital facilities charge. A single family residential parcel is one ESU. For all other parcels, one ESU is equivalent to 3,000 sq. ft. of impervious surface area.

Utility Funds and Cash Reserves – User charges (rates) paid by the utility's customers are the main funding source for all stormwater utility activities. The rates cover total annual costs associated with operation and maintenance of the stormwater system, and other ongoing costs of providing stormwater services. Rates can pay for capital improvement projects in two ways: either paying for debt service or directly paying for capital projects. Although funding the capital costs directly through rates does not result in the additional interest expense associated with issuing debt, this approach can cause large and/or volatile rate increases.

Summary

An ideal funding strategy would include the use of grants and low-cost loans when debt issuance is required. However, these resources are very limited and competitive in nature and do not provide a reliable source of funding for planning purposes. It is recommended that the City pursue these funding avenues but assume for planning purposes that bond financing will be utilized to meet needs above the utility's available cash resources. G.O.

bonds may be useful for special circumstances, but due to the bonding capacity limits, this vehicle is most often reserved for other City (non-utility) purposes. Revenue bonds are a more secure financing mechanism for utility needs. This analysis conservatively assumes no tax credits or subsidies from BABs, though the City should consider BABs when it is ready to begin the process of debt issuance. The Capital Financing Strategy developed to fund the updated CIP assumes the following funding priority:

a) Available grant funds,
b) Accumulated capital cash reserves,
c) Annual revenue collections from capital facilities charges (CFCs),
d) Annual use of excess cash (above minimum balance targets) from operating reserves,
e) Interest earnings on capital reserves and other miscellaneous capital resources, including government program loans to the extent that they are accessible,
f) Revenue bond financing, and
g) Direct rate funding.

FINANCIAL PLAN

The City of Edmonds' stormwater utility operates as an enterprise fund and as such it is responsible to fully fund all of its related costs. It is not dependent on general tax revenues or general fund resources. The primary source of funding for the utility is collections from stormwater service charges. The City controls the level of service charges by ordinance, and subject to statutory authority, can adjust user charges as needed to meet financial objectives.

The financial plan can only provide a qualified assurance of financial feasibility if it considers the total system costs of providing stormwater service – both operating and capital. To meet these objectives, the following elements are completed:

- Capital Funding Plan – This plan identifies the total CIP obligations for the planning period 2010 – 2016. The plan defines a strategy for funding the CIP, including an analysis of available resources from rate revenues, existing reserves, capital facilities charges, debt financing and any special resources that may be readily available (e.g. grants, developer contributions, etc). The capital funding plan impacts the financial plan through the use of debt financing (resulting in annual debt service) and the assumed rate revenue resources available for capital funding.

- Financial Plan – This forecast identifies annual non-capital costs associated with the operation, maintenance, and administration of the stormwater system. Included in the financial plan is a reserve analysis that forecasts cash flow and fund balance activity along with testing for satisfaction of actual or recommended minimum fund balance policies. The financial plan ultimately evaluates the sufficiency of utility revenues in meeting all obligations, including cash uses such as operating expenses, debt service,

and reserve contributions, as well as any coverage requirements associated with long-term debt.

Financial Policies

A brief summary of the key financial policy assumptions used in the financial analysis, as well as those recommended in the financial program are discussed below:

Reserve Policies

Utility reserves serve multiple functions. They can be used to address variability and timing of expenditures and receipts, occasional disruptions in activities, costs or revenues, utility debt obligations; and many other functions. The collective use of individual reserves helps to limit the City's exposure to revenue shortfalls and meet long-term capital obligations. Common reserves among municipal utilities are operating reserves, capital contingency reserves, and bond reserves.

- *Operating Reserve* – An operating reserve, or working capital reserve, provides a minimum unrestricted fund balance needed to accommodate the short-term cycles of revenues and expenses. These reserves are intended to address both anticipated and unanticipated changes in revenues and expenses. Anticipated changes may include billing and receipt cycles, payroll cycles, and other payables. Operating reserves can be used to meet short-term cash deficiencies due to the timing of actual revenues and expenditures.

  Generally, utilities target a certain number of days of working capital as a beginning cash balance to provide the liquidity needed to allow regular management of payables and payment cycles. Consistent with industry practice, a working capital reserve of between 30 to 45 days of operating and maintenance (O&M) expenses is targeted. Based upon the City's 2010 budget, this target range is equivalent to approximately between $130,000 and $195,000.

- *Capital Contingency Reserve* – A capital contingency reserve is an amount of cash set aside in case of an emergency should a piece of equipment or a portion of the utility's infrastructure fail unexpectedly. Additionally, the reserve could be used for other unanticipated capital needs including capital project cost overruns. There are various approaches to identifying an appropriate level for this reserve, such as 1) identifying a percentage of a utility system fixed asset costs and, 2) determining the cost of replacing highly critical assets or facilities. For purposes of this analysis, no minimum target fund balance is set, per City staff's direction, to reduce the utility's rate adjustment needs.

- *Bond Reserve* – Bond covenants often establish reserve requirements as a means of protecting an agency against the risk of nonpayment. This bond reserve can be funded with cash on hand, but is more often funded at the time of borrowing as part of the bond principal. This reserve requirement can also be met by using a surety bond. The City maintains a restricted bond reserve in compliance with its bond covenants.

System Reinvestment Policies

The purpose of system reinvestment funding is to provide for the replacement of aging system facilities to ensure sustainability of the system for ongoing operation. Each year, the utility's assets lose value, and as they lose value they are moving toward eventual replacement. That accumulating loss in value and future liability is typically measured for reporting purposes through annual depreciation expense, which is based on the original cost of the asset over its anticipated useful life. While this expense reflects the consumption of the existing asset and its original investment, the replacement of that asset will likely cost much more, factoring in inflation and construction conditions. Therefore, the added annual replacement liability is even greater than the annual depreciation expense.

On the spectrum of policy options related to system reinvestment funding, basing a system reinvestment policy on the projected replacement cost of assets would result in the largest immediate rate impact and the lowest future debt obligation. A policy based on annual depreciation expense has the next greatest immediate rate impact. This policy does not target a replacement reserve level sufficient to cash fund 100% of future replacement costs and therefore assumes some replacement costs will be debt-financed.

One approach aimed at mitigating the accumulating asset replacement liability, as well as current rate impacts, is to fund an amount from rates equal to annual depreciation expense, net of annual debt principal repayment. Annual debt principal payments are one source of annual equity contribution to the system. Using annual depreciation expense as the measure of annual equity loss, and basis for a system reinvestment policy, it is appropriate then, to reduce the annual depreciation expense by the annual equity contribution, as measured by debt principal repayment. This approach tends to balance reducing near-term rate impacts with mitigating accumulating asset replacement liability.

The analysis provided herein does not incorporate any system reinvestment funding, per City staff's direction, to reduce immediate rate impacts.

Debt Policies

Bond covenants often establish a minimum debt coverage ratio as a means of protecting an agency against the risk of nonpayment. The City's current bond covenants require a ratio of 1.25 times annual revenue bond debt service on a combined basis for the City's all three utilities (i.e. water, wastewater, and stormwater). This means that annual rate revenue must be set sufficient to support annual operating expenses, annual revenue bond debt repayment,

and a cushion of 25% of the annual revenue bond debt repayment. For the purposes of this analysis, it is assumed that the stormwater utility would meet 1.25 revenue bond coverage ratio independently, without relying on the other two utilities' financial performance.

As stated previously, The City maintains a restricted bond reserve in compliance with its bond covenants.

Capital Funding Plan

The CIP developed for this plan totals $22.2 million ($24.8 million inflated) over the 2010-2016 planning horizon. Costs are stated in 2010 dollars and escalated to the year of planned spending for financing projections at an annual inflation rate of 2% for 2012 and 4% thereafter. It is assumed that construction costs will stay the same in 2011 due to current economic conditions.

The CIP consists of two tiers. The projects needed to accomplish basic utility service delivery are categorized as Tier One projects. The projects that are beneficial to enhance utility service delivery are categorized as Tier Two projects. Tier One projects comprise approximately 37% of the total CIP ($8.2 million in 2010 dollars, $8.7 in inflated dollars). These projects are assumed to be entirely funded by the stormwater utility (either by cash financing or debt issues). Per City staff, Tier Two projects will be implemented only if outside funding sources and/or grant monies are secured. Based on the City staff's direction, the capital funding analysis assumes that 75% of the Tier Two project costs will be funded by outside sources and/or grants; the stormwater utility will fund only the remaining 25% of these projects.

Table 2 summarizes the annual CIP expenditures in 2010 and inflated costs.

Table 2
Stormwater Utility Capital Improvement Program

Year	2010 Dollars			Inflated Dollars		
	Tier 1	Tier 2	Total	Tier 1	Tier 2	Total
2010	$ 740,461	$ -	$ 740,461	$ 740,461	$ -	$ 740,461
2011	1,407,000	-	1,407,000	1,407,000	-	1,407,000
2012	1,739,216	-	1,739,216	1,774,000	-	1,774,000
2013	2,280,354	-	2,280,354	2,419,000	-	2,419,000
2014	941,778	3,914,861	4,856,639	1,039,000	4,319,000	5,358,000
2015	428,810	4,574,845	5,003,655	492,000	5,249,000	5,741,000
2016	659,540	5,479,965	6,139,505	787,000	6,539,000	7,326,000
Total: 2010 - 2016	**$ 8,197,160**	**$ 13,969,671**	**$ 22,166,831**	**$ 8,658,461**	**$ 16,107,000**	**$ 24,765,461**

A capital funding plan is developed to determine the total resources available to meet CIP costs and determine if new debt financing will be required. 2010 beginning operating and capital fund balances were $632,191 and ($61,180), respectively. After evaluating the utility's working capital and capital financing needs, $600,000 of the beginning operating

fund balance was assumed to be available for capital. With the assumed transfer of $600,000 from the operating fund, the total available capital fund balance at the beginning of the analysis period reached $538,820. The capital funding plan for the entire CIP (i.e. Tier One and Tier Two) is summarized in **Table 3** below.

Table 3
2010 – 2016 Annual Capital Fund Cash Flow (Total CIP)

Capital Fund	2010	2011	2012	2013	2014	2015	2016
Beginning Balance	$ 538,820	$ 38,083	$ 1,796,386	$ 297,485	$ 2,122,274	$ 285,810	$ 2,465,957
plus: Capital Facilities Charges	30,000	30,000	30,000	30,000	30,000	30,000	30,000
plus: Grants & Other Outside Funding Sources	-	-	-	-	3,239,250	3,936,750	4,904,250
plus: Net Debt Proceeds Available for Projects	-	3,100,000	-	4,200,000	-	3,850,000	-
plus: Interest Earnings	8,082	762	44,910	7,437	53,057	7,145	61,649
plus: Transfer of Surplus from Operating Fund	-	34,542	200,189	6,352	199,230	97,252	38,754
plus: Direct Rate Funding	201,641	-	-	-	-	-	-
less: Capital Expenditures	(740,461)	(1,407,000)	(1,774,000)	(2,419,000)	(5,358,000)	(5,741,000)	(7,326,000)
Ending Balance	**$ 38,083**	**$ 1,796,386**	**$ 297,485**	**$ 2,122,274**	**$ 285,810**	**$ 2,465,957**	**$ 174,611**

The costs shown in the table are inflated to the year of spending. Almost half (48.8%) of the 7-year CIP is assumed to be financed with grant monies and/or outside sources, while another 45% is projected to be financed with new debt issues. The remaining 6.2% of the 7-year CIP is financed from utility resources such as existing cash balances, rates, capital facility charge revenues, and capital fund interest earnings.

Industry best practice suggests maintaining a debt to equity ratio of no greater than 60% debt to 40% equity. By comparison, the utility is currently leveraged at approximately 56% debt to 54% equity in the system. At the end of the analysis period, debt to equity ratio is projected to be 50% debt to 50% equity.

If the City does not implement Tier Two projects, a majority (87%) of the CIP (i.e. Tier One projects only) is projected to be financed with new debt issues. The remaining 13% is financed from utility resources such as existing cash balances, rates, capital facility charge revenues, and capital fund interest earnings. As a result, debt to equity ratio is projected to be 80% debt to 20% equity which indicates a slightly higher indebtedness compared to industry best practices. The capital funding plan for the Tier One Only projects scenario is summarized in **Table 4** below.

Table 4
2010 – 2016 Annual Capital Fund Cash Flow (Tier One Only)

Capital Fund	2010	2011	2012	2013	2014	2015	2016
Beginning Balance	$ 538,820	$ 38,083	$ 1,815,049	$ 263,579	$ 1,081,168	$ 134,812	$ 830,511
plus: Capital Facilities Charges	30,000	30,000	30,000	30,000	30,000	30,000	30,000
plus: Grants & Other Outside Funding Sources	-	-	-	-	-	-	-
plus: Net Debt Proceeds Available for Projects	-	3,150,000	-	3,200,000	-	1,150,000	-
plus: Interest Earnings	8,082	762	45,376	6,589	27,029	3,370	20,763
plus: Transfer of Surplus from Operating Fund	-	3,205	147,154	-	35,615	4,328	-
plus: Direct Rate Funding	201,641	-	-	-	-	-	-
less: Capital Expenditures	(740,461)	(1,407,000)	(1,774,000)	(2,419,000)	(1,039,000)	(492,000)	(787,000)
Ending Balance	**$ 38,083**	**$ 1,815,049**	**$ 263,579**	**$ 1,081,168**	**$ 134,812**	**$ 830,511**	**$ 94,274**

FINANCIAL FORECAST

The Financial Forecast, or revenue requirement analysis, projects the amount of annual rate revenue. The analysis incorporates operating revenues, operating and maintenance (O&M) expenses, debt service payments, rate funded capital needs, and any other identified revenues or expenses related to utility operations, and determines the sufficiency of the current level of rates. Revenue needs are also impacted by debt covenants (typically applicable to revenue bonds) and specific fiscal policies and financial goals of the utility (as described above).

For this analysis, two revenue sufficiency criteria have been developed to reflect the financial goals and constraints of the utility: (1) cash needs must be met and (2) debt coverage requirements must be realized. In order to operate successfully with respect to these goals, both tests of revenue sufficiency must be met.

Cash Test

The cash flow test identifies all known cash requirements for the utility in each year of the planning period. Capital needs are identified and a capital funding strategy is established. This may include the use of debt, cash reserves, outside assistance, and rate funding. Cash requirements to be funded from rates are determined. Typically, these include O&M expenses, debt service payments, system reinvestment funding or directly funded capital outlays, and any additions to specified reserve balances. The total annual cash needs of the utility are then compared to total operating revenues (under current rates) to forecast annual revenue surpluses or shortfalls.

Coverage Test

The coverage test is based on a commitment made by the City when issuing revenue bonds. For purposes of this analysis, revenue bond debt is assumed for any needed debt issuance. As a security condition of issuance, the City is required per covenant to agree that the revenue bond debt would have a higher priority for payment (a senior lien) compared to most

other utility expenditures; the only outlays with a higher lien are O&M expenses. Debt service coverage is expressed as a multiplier of the annual revenue bond debt service payment. For example, a 1.0 coverage factor would imply no additional cushion is required. A 1.25 coverage factor means revenues must be sufficient to pay O&M expenses, annual revenue bond debt service payments, plus an additional 25% of annual revenue bond debt service payments. The excess cash flow derived from the added coverage, if any, can be used for any utility purpose, including funding capital projects. The existing coverage requirement on the City's outstanding revenue bonds is 1.25 times bond debt.

In determining the annual revenue requirement, both the cash and coverage sufficiency tests must be met – the test with the greatest deficiency drives the level of needed rate increase in any given year. The analysis uses this rate revenue requirement to indicate annual rate adjustments.

Projected Financial Performance

The revenue requirement analysis is based on the following data, assumptions, and adjustments:

- The 2010 budget is used as the basis of analysis.
- Rate revenues under the existing rates are calculated to increase with customer growth, which is projected to be approximately 0.5% per year.
- Salary and benefits costs are escalated annually at 5% for assumed labor cost inflation.
- Other operating and maintenance expenses are escalated annually at 2% in 2011, and 3% thereafter.
- The City's annual fund interest earnings rate is assumed to be 1.5% in 2010, 2% in 2011, and 2.5% thereafter.
- Per City staff's direction, the following additional O&M expenses are included in the 2010 baseline budget:
    - A new vehicle rental/purchase cost of $20,000 in 2011, and $3,000 annual maintenance expense in the subsequent years,
    - Surface water monitoring cost of $40,000 in 2011, and $80,000 per year thereafter,
    - Additional state permit fee of $20,000 starting in 2011, and

  - Starting in 2011, one full-time employee (FTE) position for a public works lead worker at an annual cost of $62,000, one FTE position for an engineering technician at an annual cost of $68,000, and one-third of an FTE position for a GIS technician at an annual cost of $30,000.

- Inflated capital expenses reflect 2% construction cost inflation in 2012, and 4% annual inflation thereafter. It is assumed that the construction costs would not increase in 2011 given the current economic conditions.

- In addition to maintenance and operating costs, revenue requirements include capital costs for new debt service incurred to fund the CIP.

- CFC revenues are assumed to stay the same throughout the projection period at the 2010 budget level of $30,000.

- The 2010 beginning operating fund (Fund 411) balance was $632,191. Of this amount, $600,000 is assumed to be transferred to the capital fund (Fund 412).

- The forecast assumes a revenue bond interest rate of 5%, a repayment term of 20 years, and required coverage of 1.25 times debt service.

Table 5 summarizes the projected financial performance and rate revenue requirements of the stormwater utility for 2010 through 2016 based upon the above assumptions. The table reflects funding of the entire CIP, both Tier One and Tier Two projects.

Table 5
Summary of Projected Financial Performance & Revenue Requirements (Total CIP)

Revenue Requirements	2010	2011	2012	2013	2014	2015	2016
Revenues							
Rate Revenues Under Existing Rates	$ 2,114,120	$ 2,124,690	$ 2,135,314	$ 2,145,990	$ 2,156,720	$ 2,167,504	$ 2,178,342
Non-Rate Revenues	9,283	12,749	21,952	22,242	31,632	31,871	40,517
Total Revenues	**$ 2,123,403**	**$ 2,137,440**	**$ 2,157,265**	**$ 2,168,233**	**$ 2,188,353**	**$ 2,199,375**	**$ 2,218,859**
Expenses							
Cash O&M Expenses **[a]**	$ 1,581,805	$ 1,880,659	$ 1,978,014	$ 2,055,862	$ 2,137,195	$ 2,222,184	$ 2,306,539
Existing Debt Service	260,405	256,338	251,545	247,098	247,115	217,260	217,061
New Debt Service	-	270,454	270,454	636,875	636,875	972,762	972,762
Rate Funded System Reinvestment	-	-	-	-	-	-	-
Rate Funded CIP	201,641	-	-	-	-	-	-
Total Expenses	**$ 2,043,851**	**$ 2,407,451**	**$ 2,500,013**	**$ 2,939,836**	**$ 3,021,186**	**$ 3,412,205**	**$ 3,496,362**
Annual Rate Adjustment	**8.00%**	**8.00%**	**8.00%**	**8.50%**	**8.50%**	**8.50%**	**0.00%**
Rate Increases Dictated by:	*Policy*	*Policy*	*Policy*	*Policy*	*Policy*	*Policy*	*Analysis*
Rate Revenues After Rate Increase	$ 2,184,591	$ 2,478,239	$ 2,689,881	$ 2,933,113	$ 3,198,340	$ 3,487,550	$ 3,504,987
Net Cash Flow After Rate Increase	150,022	83,537	211,820	15,520	208,786	107,215	49,142
Coverage After Rate Increases	10.32	1.86	2.40	1.30	1.64	1.26	1.26

[a] Includes additional B&O taxes due to the proposed rate increases.

As shown in the table, revenues under the existing rates are not sufficient to fund projected rate needs. The projected revenue deficiency is primarily due to new debt repayment obligations and funding of the proposed capital improvement program.

It is projected that the City will need to increase its stormwater rates by 8.0% annually in years 2010 through 2012, and by 8.5% per year in 2013 through 2015. The analysis assumes that the rate adjustment in 2010 would be implemented in July, and the new rates will be in effect in the last 5-months of the year (i.e. August through December). The City implemented the projected rate adjustment in July 2010 as recommended. The subsequent rate increases are assumed to be effective as of January 1st of each year.

Table 6 below demonstrates the projected cash balances (operating, capital, and debt reserve funds) for the stormwater utility, assuming that the rate increases proposed in **Table 5** above are implemented.

Table 6
Projected Cash Balances (Total CIP)

Fund Balances	2010	2011	2012	2013	2014	2015	2016
Operating Fund	$ 182,213	$ 231,208	$ 242,839	$ 252,007	$ 261,564	$ 271,527	$ 281,914
Capital Fund	38,083	1,796,386	297,485	2,122,274	285,810	2,465,957	174,611
Debt Reserve Fund	61,000	331,454	331,454	697,875	697,875	1,033,762	1,033,762
Total	**$ 281,296**	**$ 2,359,049**	**$ 871,778**	**$ 3,072,156**	**$ 1,245,249**	**$ 3,771,246**	**$ 1,490,287**
Combined Minimum Target Balance	*$ 190,121*	*$ 484,790*	*$ 492,544*	*$ 865,077*	*$ 871,375*	*$ 1,213,904*	*$ 1,220,829*

If the City were to implement only the Tier One projects, the needed annual rate adjustments would have been 7.5% in 2010 and 2011, 7.0% in 2012 and 2013, 3.5% in 2014 and 2015, and 2% in 2016. The projected financial performance of the stormwater utility under this scenario is summarized in **Table 7**.

Table 7
Summary of Projected Financial Performance & Revenue Requirements
(Tier 1 CIP Only)

Revenue Requirements	2010	2011	2012	2013	2014	2015	2016
Revenues							
Rate Revenues Under Existing Rates	$ 2,114,120	$ 2,124,690	$ 2,135,314	$ 2,145,990	$ 2,156,720	$ 2,167,504	$ 2,178,342
Non-Rate Revenues	9,283	12,663	22,061	22,351	29,484	29,799	32,556
Total Revenues	**$ 2,123,403**	**$ 2,137,353**	**$ 2,157,375**	**$ 2,168,342**	**$ 2,186,204**	**$ 2,197,303**	**$ 2,210,898**
Expenses							
Cash O&M Expenses **[a]**	$ 1,581,739	$ 1,880,316	$ 1,977,271	$ 2,054,455	$ 2,133,521	$ 2,215,951	$ 2,301,201
Existing Debt Service	260,405	256,338	251,545	247,098	247,115	217,260	217,061
New Debt Service	-	274,816	274,816	553,994	553,994	654,324	654,324
Rate Funded System Reinvestment	-	-	-	-	-	-	-
Rate Funded CIP	201,641	-	-	-	-	-	-
Total Expenses	**$ 2,043,785**	**$ 2,411,470**	**$ 2,503,632**	**$ 2,855,548**	**$ 2,934,630**	**$ 3,087,535**	**$ 3,172,587**
Annual Rate Adjustment	**7.50%**	**7.50%**	**7.00%**	**7.00%**	**3.50%**	**3.50%**	**2.00%**
Rate Increases Dictated by:	*Policy*	*Policy*	*Policy*	*Policy*	*Policy*	*Policy*	*Policy*
Rate Revenues After Rate Increase	$ 2,180,186	$ 2,455,345	$ 2,640,356	$ 2,839,306	$ 2,953,376	$ 3,072,027	$ 3,149,135
Net Cash Flow After Rate Increase	145,684	56,538	158,784	6,110	48,229	14,292	9,105
Coverage After Rate Increases	10.25	1.76	2.23	1.32	1.43	1.25	1.26

[a] Includes additional B&O taxes due to the proposed rate increases.

Table 8 below demonstrates the projected cash balances (operating, capital, and debt reserve funds) for the stormwater utility under this scenario, again assuming that the rate increases shown in **Table 7** above are implemented.

Table 8
Projected Cash Balances (Tier One CIP Only)

Fund Balances	2010	2011	2012	2013	2014	2015	2016
Operating Fund	$ 177,875	$ 231,208	$ 242,839	$ 248,949	$ 261,564	$ 271,527	$ 280,631
Capital Fund	38,083	1,815,049	263,579	1,081,168	134,812	830,511	94,274
Debt Reserve Fund	61,000	335,816	335,816	614,994	614,994	715,324	715,324
Total	**$ 276,958**	**$ 2,382,073**	**$ 842,234**	**$ 1,945,112**	**$ 1,011,370**	**$ 1,817,362**	**$ 1,090,229**
Combined Minimum Target Balance	*$ 190,121*	*$ 489,152*	*$ 496,906*	*$ 782,196*	*$ 788,494*	*$ 895,466*	*$ 902,391*

It is important to note that these projections are based upon current assumptions and the capital program identified herein. Circumstances might change over time, causing actual rate adjustments to be higher or lower once actual costs are known. It is imperative that the City track its costs as they become available and compare them to assumptions used in the study. If significant changes occur, the City should revisit the analysis and make appropriate changes.

CURRENT AND PROJECTED RATES

The City charges its stormwater utility customers on an equivalent service unit (ESU) basis. Each developed single family residential parcel is one ESU. For all other parcels, one ESU is equivalent to 3,000 sq. ft. of impervious surface area. The monthly rate per ESU at the beginning of 2010 was $8.31. As mentioned above, the City implemented the recommended rate increase of 8.0% in July 2010 and raised the monthly stormwater rate to $8.97.

Table 9 presents the City's existing and projected stormwater rates incorporating the rate adjustments shown in the financial forecasts under both CIP implementation scenarios.

Table 9
Existing and Projected Rates

	Existing Rate	2010	2011	2012	2013	2014	2015	2016
Total CIP Implementation Scenario (Tier 1 and 2)								
Monthly Rates per ESU	**$ 8.31**	**$ 8.97**	**$ 9.69**	**$ 10.47**	**$ 11.36**	**$ 12.32**	**$ 13.37**	**$ 13.37**
Projected Percentage Rate Increases		8.0%	8.0%	8.0%	8.5%	8.5%	8.5%	0.0%
Monthly $ Increase per ESU from the Previous Year		$ 0.66	$ 0.72	$ 0.78	$ 0.89	$ 0.97	$ 1.05	$ -
Monthly $ Increase per ESU from the Existing Rate		$ 0.66	$ 1.38	$ 2.16	$ 3.05	$ 4.01	$ 5.06	$ 5.06
Tier One Only CIP Implementation Scenario								
Monthly Rates per ESU	**$ 8.31**	**$ 8.93**	**$ 9.60**	**$ 10.28**	**$ 10.99**	**$ 11.38**	**$ 11.78**	**$ 12.01**
Projected Percentage Rate Increases		7.5%	7.5%	7.0%	7.0%	3.5%	3.5%	2.0%
Monthly $ Increase per ESU from the Previous Year		$ 0.62	$ 0.67	$ 0.67	$ 0.72	$ 0.38	$ 0.40	$ 0.24
Monthly $ Increase per ESU from the Existing Rate		$ 0.62	$ 1.29	$ 1.97	$ 2.68	$ 3.07	$ 3.47	$ 3.70

CONCLUSION

Starting in 2010, the City's current rates are projected to be insufficient to fully fund the forecasted financial obligations of the utility. New financial obligations for which the utility will require additional rate revenues are mostly driven by the capital financing impacts (i.e. debt service payments for the new bond issues) of the proposed $22.2 million total CIP (2009 dollars; $24.8 inflated dollars) including both Tier 1 and Tier 2 projects.

To generate adequate working capital to fund utility obligations and meet annual cash flow and debt service coverage requirements, a series of rate increases will be needed in years 2010 through 2016. The City already took the first step and increased its stormwater rates by 8% as recommended in the total CIP (i.e. Tier 1 and 2) implementation scenario.

City of Edmonds
Stormwater Utility
Summary

Capital Funding	2010	2011	2012	2013	2014	2015	2016
Total Capital Projects	**$ 740,461**	**$ 1,407,000**	**$ 1,774,000**	**$ 2,419,000**	**$ 5,358,000**	**$ 5,741,000**	**$ 7,326,000**
Grants and Developer Donations	-	-	-	-	3,239,250	3,936,750	4,904,250
PWTF Loan Proceeds	-	-	-	-	-	-	-
Other Debt Proceeds	-	-	-	-	-	-	-
Revenue Bond Proceeds	-	1,368,917	-	2,121,515	-	1,518,440	-
Use of Capital Fund Balance	538,820	38,083	1,774,000	297,485	2,118,750	285,810	2,421,750
Direct Rate Funding	201,641	-	-	-	-	-	-
Total Funding Sources	**$ 740,461**	**$ 1,407,000**	**$ 1,774,000**	**$ 2,419,000**	**$ 5,358,000**	**$ 5,741,000**	**$ 7,326,000**

Revenue Requirements	2010	2011	2012	2013	2014	2015	2016
Revenues							
Rate Revenues Under Existing Rates	$ 2,114,120	$ 2,124,690	$ 2,135,314	$ 2,145,990	$ 2,156,720	$ 2,167,504	$ 2,178,342
Non-Rate Revenues	9,283	12,749	21,952	22,242	31,632	31,871	40,517
Total Revenues	**$ 2,123,403**	**$ 2,137,440**	**$ 2,157,265**	**$ 2,168,233**	**$ 2,188,353**	**$ 2,199,375**	**$ 2,218,859**
Expenses							
Cash O&M Expenses **[a]**	$ 1,581,805	$ 1,880,659	$ 1,978,014	$ 2,055,862	$ 2,137,195	$ 2,222,184	$ 2,306,539
Existing Debt Service	260,405	256,338	251,545	247,098	247,115	217,260	217,061
New Debt Service	-	270,454	270,454	636,875	636,875	972,762	972,762
Rate Funded System Reinvestment	-	-	-	-	-	-	-
Rate Funded CIP	201,641	-	-	-	-	-	-
Total Expenses	**$ 2,043,851**	**$ 2,407,451**	**$ 2,500,013**	**$ 2,939,836**	**$ 3,021,186**	**$ 3,412,205**	**$ 3,496,362**
Annual Rate Adjustment	**8.00%**	**8.00%**	**8.00%**	**8.50%**	**8.50%**	**8.50%**	**0.00%**
Rate Increases Dictated by:	*Policy*	*Policy*	*Policy*	*Policy*	*Policy*	*Policy*	*Analysis*
Rate Revenues After Rate Increase	$ 2,184,591	$ 2,478,239	$ 2,689,881	$ 2,933,113	$ 3,198,340	$ 3,487,550	$ 3,504,987
Net Cash Flow After Rate Increase	150,022	83,537	211,820	15,520	208,786	107,215	49,142
Coverage After Rate Increases	10.32	1.86	2.40	1.30	1.64	1.26	1.26

[a] Includes additional B&O taxes due to the proposed rate increases.

Fund Balances	2010	2011	2012	2013	2014	2015	2016
Operating Fund	$ 182,213	$ 231,208	$ 242,839	$ 252,007	$ 261,564	$ 271,527	$ 281,914
Capital Fund	38,083	1,796,386	297,485	2,122,274	285,810	2,465,957	174,611
Debt Reserve Fund	61,000	331,454	331,454	697,875	697,875	1,033,762	1,033,762
Total	**$ 281,296**	**$ 2,359,049**	**$ 871,778**	**$ 3,072,156**	**$ 1,245,249**	**$ 3,771,246**	**$ 1,490,287**
Combined Minimum Target Balance	*$ 190,121*	*$ 484,790*	*$ 492,544*	*$ 865,077*	*$ 871,375*	*$ 1,213,904*	*$ 1,220,829*

City of Edmonds
Stormwater Utility
Assumptions

Economic & Financial Factors	2009	2010	2011	2012	2013	2014	2015	2016
1 General Cost Inflation	1.00%	1.00%	2.00%	3.00%	3.00%	3.00%	3.00%	3.00%
2 Construction Cost Inflation (Project costs are already inflated)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3 Labor Cost Inflation	0.00%	0.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
4 Customer Growth	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
5 General Inflation plus Growth	1.51%	1.51%	2.51%	3.52%	3.52%	3.52%	3.52%	3.52%
6 [Other Escalation Factor]	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
7 [Other Escalation Factor]	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
8 No Escalation	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Fund Earnings	1.00%	1.50%	2.00%	2.50%	2.50%	2.50%	2.50%	2.50%
Rate Revenue Taxed @ B&O Tax	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%
Other Revnues Taxed @ B&O Tax	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%	1.50%

Accounting Assumptions	2009	2010	2011	2012	2013	2014	2015	2016
FISCAL POLICY RESTRICTIONS								
Min. Op. Fund Balance Target (days of O&M expense)	30	30	30	30	30	30	30	30
Max. Op. Fund Balance (days of O&M expense)	45	45	45	45	45	45	45	45
Minimum Capital Fund Balance Target								
Select Minimum Capital Fund Balance Target: 2	**User Input**							
1 - Defined as % of Plant								
Plant-in-Service in 2008								
Minimum Capital Fund Balance - % of plant assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2 - Amount at Right ==>	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

City of Edmonds
Stormwater Utility
Assumptions

RATE FUNDED SYSTEM REINVESTMENT

Select Reinvestment Funding Strategy	4	**System Reinvestment is not Funded**

Amount of Annual Cash Funding from Rates

1 - Equal to Annual Depreciation Expense
2 - Equal to Annual Depreciation Expense less Annual Debt Principal Payments
3 - Equal to Amount at Right ==>
4 - Do Not Fund System Reinvestment

	2009	2010	2011	2012	2013	2014	2015	2016
3 - Equal to Amount at Right ==>	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Capital Financing Assumptions

		2009	2010	2011	2012	2013	2014	2015	2016
CAPITAL FACILITIES CHARGE (CFC) REVENUES									
Total Equivalent Service Units (ESUs)		20,260	20,362	20,464	20,566	20,669	20,772	20,876	20,980
Capital Facilities Charge Revenues at Current Rate =	$ 428	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000	$ 30,000
REVENUE BONDS									
Term (years)		20	20	20	20	20	20	20	20
Interest Cost (incl. issuance costs, per City staff's direction)		5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Issuance Cost		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Revenue Bond Coverage Requirement	1.25								
PWTF LOAN									
Term (years; 10 year minimum and no more than 20 years)		20	20	20	20	20	20	20	20
Interest Cost		0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
OTHER LOANS & REVENUE-SUPPORTED GENERAL OBLIGATION BONDS [a]									
Term (years)		20	20	20	20	20	20	20	20
Interest Cost		4.00%	4.00%	4.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Issuance Cost		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

[a] Tax-supported general obligation bonds are assumed to be accounted for in the General Fund; terms and annual obligations of such bonds are not factors in this analysis.

City of Edmonds
Stormwater Utility
Existing Debt Input

Existing Debt Service - Revenue Bonds	2009	2010	2011	2012	2013	2014	2015	2016
2003 REVENUE BOND REFUNDING								
Annual Interest Payment	$ 25,209	$ 24,082	$ 22,822	$ 21,472	$ 20,192	$ 18,592	$ 16,938	$ 15,210
Annual Principal Payment	34,671	36,005	36,005	32,004	40,005	41,339	42,672	44,006
Total Annual Payment	$ 59,880	$ 60,087	$ 58,827	$ 53,476	$ 60,197	$ 59,930	$ 59,610	$ 59,215
Use of Debt reserve for Debt Service	-	-	-	-	-	-	-	-
REVENUE BOND 2								
Annual Interest Payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Principal Payment	-	-	-	-	-	-	-	-
Total Annual Payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Use of Debt reserve for Debt Service	-	-	-	-	-	-	-	-
TOTAL REVENUE BONDS								
Annual Interest Payment	$ 25,209	$ 24,082	$ 22,822	$ 21,472	$ 20,192	$ 18,592	$ 16,938	$ 15,210
Annual Principal Payment	34,671	36,005	36,005	32,004	40,005	41,339	42,672	44,006
Total Annual Payment	$ 59,880	$ 60,087	$ 58,827	$ 53,476	$ 60,197	$ 59,930	$ 59,610	$ 59,215
Use of Debt reserve for Debt Service	-	-	-	-	-	-	-	-
Annual Debt Reserve Target on Existing Revenue Bonds	60,197	60,197	60,197	60,197	60,197	60,124	60,124	60,124

Existing Debt Service - PWTF Loans	2009	2010	2011	2012	2013	2014	2015	2016
PWTF LOAN 04-691-030 Storm Water Improvement Project								
Annual Interest Payment	$ 2,423	$ 2,271	$ 2,120	$ 1,968	$ 1,817	$ 1,665	$ 1,514	$ 1,363
Annual Principal Payment	30,281	30,281	30,281	30,281	30,281	30,281	30,281	30,281
Total Annual Payment	$ 32,704	$ 32,552	$ 32,401	$ 32,250	$ 32,098	$ 31,947	$ 31,795	$ 31,644
PWTF LOAN 2								
Annual Interest Payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Annual Principal Payment	-	-	-	-	-	-	-	-
Total Annual Payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL PWTF LOANS								
Annual Interest Payment	$ 2,423	$ 2,271	$ 2,120	$ 1,968	$ 1,817	$ 1,665	$ 1,514	$ 1,363
Annual Principal Payment	30,281	30,281	30,281	30,281	30,281	30,281	30,281	30,281
Total Annual Payment	$ 32,704	$ 32,552	$ 32,401	$ 32,250	$ 32,098	$ 31,947	$ 31,795	$ 31,644

City of Edmonds
Stormwater Utility
Existing Debt Input

Existing Debt Service - Other Loans [a]	2009	2010	2011	2012	2013	2014	2015	2016
[a] Enter payments for other loans and revenue-supported G.O. issues only. Tax-supported bonds are assumed to be accounted for in the General Fund and do not impact this analysis.								
LIMITED TAX GENERAL OBLIGATION BONDS, 1988								
Annual Interest Payment	$ 8,184	$ 6,882	$ 5,488	$ 4,018	$ 2,470	$ 1,258	$ -	$ -
Annual Principal Payment	31,770	33,182	34,594	36,006	27,534	28,593	-	-
Total Annual Payment	$ 39,954	$ 40,064	$ 40,082	$ 40,024	$ 30,004	$ 29,851	$ -	$ -
2005 Phone System Loan								
Annual Interest Payment	$ 111	$ 16	$ -	$ -	$ -	$ -	$ -	$ -
Annual Principal Payment	1,747	1,842	-	-	-	-	-	-
Total Annual Payment	$ 1,858	$ 1,858	$ -	$ -	$ -	$ -	$ -	$ -
2007 LTGO BOND								
Annual Interest Payment	$ 60,820	$ 58,481	$ 56,022	$ 53,503	$ 50,865	$ 48,166	$ 45,348	$ 42,409
Annual Principal Payment	64,077	67,363	69,006	72,292	73,935	77,221	80,507	83,793
Total Annual Payment	$ 124,897	$ 125,844	$ 125,028	$ 125,795	$ 124,800	$ 125,387	$ 125,855	$ 126,202
TOTAL OTHER LOANS								
Annual Interest Payment	$ 69,115	$ 65,379	$ 61,510	$ 57,521	$ 53,334	$ 49,424	$ 45,348	$ 42,409
Annual Principal Payment	97,594	102,387	103,600	108,298	101,469	105,814	80,507	83,793
Total Annual Payment	$ 166,709	$ 167,766	$ 165,110	$ 165,819	$ 154,803	$ 155,238	$ 125,855	$ 126,202

City of Edmonds
Stormwater Utility
Operating Revenue and Expenditure Forecast

Revenues		FORECAST BASIS	YE Estimate 2009	Budget 2010	Projection 2011	Projection 2012	Projection 2013	Projection 2014	Projection 2015	Projection 2016
Rate revenues	4	Customer Growth	$ 2,022,787	$ 2,114,120	$ 2,124,690	$ 2,135,314	$ 2,145,990	$ 2,156,720	$ 2,167,504	$ 2,178,342
Misc. non-rate revenues	8	No Escalation	16,282	7,885	7,885	7,885	7,885	7,885	7,885	7,885
Grants	8	No Escalation	39,642	-	-	-	-	-	-	-
[Other]	4	Customer Growth	-	-	-	-	-	-	-	-
[Other]	4	Customer Growth	-	-	-	-	-	-	-	-
TOTAL REVENUES			**$ 2,078,712**	**$ 2,122,005**	**$ 2,132,575**	**$ 2,143,199**	**$ 2,153,875**	**$ 2,164,605**	**$ 2,175,389**	**$ 2,186,227**

Expenditures		FORECAST BASIS	2009	2010	2011	2012	2013	2014	2015	2016
Salaries and Wages	3	Labor Cost Inflation	$ 413,031	$ 491,753	$ 516,341	$ 542,158	$ 569,266	$ 597,729	$ 627,615	$ 658,996
Overtime	3	Labor Cost Inflation	7,880	22,360	23,478	24,652	25,884	27,179	28,538	29,965
Benefits	3	Labor Cost Inflation	165,288	175,230	183,992	193,191	202,851	212,993	223,643	234,825
Uniforms	1	General Cost Inflation	4,167	6,500	6,630	6,829	7,034	7,245	7,462	7,686
Supplies	1	General Cost Inflation	36,795	49,500	50,490	52,005	53,565	55,172	56,827	58,532
Minor Equipment	1	General Cost Inflation	415	2,800	2,856	2,942	3,030	3,121	3,214	3,311
Professional Services	1	General Cost Inflation	11,812	22,115	22,557	23,234	23,931	24,649	25,388	26,150
Communications	1	General Cost Inflation	5,342	3,200	3,264	3,362	3,463	3,567	3,674	3,784
Travel	1	General Cost Inflation	-	3,330	3,397	3,498	3,603	3,712	3,823	3,938
Advertising	1	General Cost Inflation	-	500	510	525	541	557	574	591
Rental / Lease	1	General Cost Inflation	20,421	24,000	24,480	25,214	25,971	26,750	27,552	28,379
Insurance	1	General Cost Inflation	43,522	44,000	44,880	46,226	47,613	49,042	50,513	52,028
Public Utility	1	General Cost Inflation	8,802	10,000	10,200	10,506	10,821	11,146	11,480	11,825
Repair / Maintenance	1	General Cost Inflation	14,426	8,486	8,656	8,915	9,183	9,458	9,742	10,034
Miscellaneous (excl. taxes)	1	General Cost Inflation	57,728	36,260	36,985	38,095	39,238	40,415	41,627	42,876
State Taxes		*B&O Tax Rate*	31,181	32,280	32,439	32,598	32,758	32,919	33,081	33,243
Intergov. Services	1	General Cost Inflation	39,429	20,070	20,471	21,086	21,718	22,370	23,041	23,732
Buildings	1	General Cost Inflation	-	-	-	-	-	-	-	-
Machinery / Equipment	1	General Cost Inflation	-	1,925	1,964	2,022	2,083	2,146	2,210	2,276
Interfund Services	1	General Cost Inflation	399,955	436,736	445,471	458,835	472,600	486,778	501,381	516,423
Interfund Rental	1	General Cost Inflation	154,365	189,703	193,497	199,302	205,281	211,439	217,783	224,316
Interfund Transfer Out [a]	1	General Cost Inflation	-	-	-	-	-	-	-	-
State Permit Fee	1	General Cost Inflation	-	-	22,000	22,660	23,340	24,040	24,761	25,504
2 1/3 FTEs	3	Labor Cost Inflation	-	-	160,800	168,840	177,282	186,146	195,453	205,226
New Vehicle Rental/Maint.	8	No Escalation	-	-	20,000	3,000	3,000	3,000	3,000	3,000
Surface Water Monitoring	8	No Escalation	-	-	40,000	80,000	80,000	80,000	80,000	80,000
Add'l O&M from CIP		*From CIP*	-	-	-	-	-	-	-	-
Total Cash O&M Expenditures			**$ 1,414,559**	**$ 1,580,748**	**$ 1,875,356**	**$ 1,969,695**	**$ 2,044,055**	**$ 2,121,571**	**$ 2,202,383**	**$ 2,286,640**
Depreciation Expense [b]		*Last year's plus annual additions from CIP*	$ 189,739	$ 204,549	$ 232,689	$ 268,169	$ 316,549	$ 423,709	$ 538,529	$ 685,049
TOTAL EXPENSES			**$ 1,604,298**	**$ 1,785,297**	**$ 2,108,045**	**$ 2,237,864**	**$ 2,360,604**	**$ 2,545,279**	**$ 2,740,911**	**$ 2,971,688**

[a] Transfers from Operating Fund to Construction and Debt Service Funds are calculated in the model.

[b] Depreciation is a non-cash expense.

City of Edmonds
Stormwater Utility
Capital Improvement Program

Project Costs and O&M Impacts in Year:	2010

(Project costs are escalated using Construction Cost Inflation assumptions)

No	Description	Current Cost	Year	Annual O&M Impact	Life in Years	Specific Funding Source 1-Enterprise Fund, 2-Grants & Developer Donations	
1	1A - Southwest Edmonds Basin Study Project 1 - Replace Infiltration Pipe (near 107th Pl W.)	$ 27,000	2012	$ -	50	1	Enterprise Fund
2		45,000	2013	-	50	1	Enterprise Fund
3	1B - SW Edmonds Basin Study Project 2 - Connect Sumps near Robin Hood Lane	105,000	2015	-	50	1	Enterprise Fund
4		441,000	2016	-	50	1	Enterprise Fund
5	1C - SW Edmonds Basin Study Project 3 - Connect Sumps on 238th St SW to Hickman Park Ir	105,000	2012	-	50	1	Enterprise Fund
6		448,000	2013	-	50	1	Enterprise Fund
6	1D - SW Edmonds Basin Study Project 4 - Connect Sumps on 105th & 106th Ave W near 228th	106,000	2011	-	50	1	Enterprise Fund
7		341,000	2012	-	50	1	Enterprise Fund
8	2A - Shellabarger Crk/Willow Crk/Edmonds Marsh 100-year floodplain delineation study	239,000	2011	-	50	1	Enterprise Fund
9	2B - Willow Creek Pipe Rehabilitation	519,000	2014		50	1	Enterprise Fund
10	3A - Northstream Storm Repair & Abandonment South of Puget Drive	46,000	2013		50	1	Enterprise Fund
11		172,000	2014		50	1	Enterprise Fund
12	3B - Northstream Pipe Rehabilitation	29,000	2014		50	1	Enterprise Fund
13		54,000	2015		50	1	Enterprise Fund
14	4A - Talbot Road / Perrinville Creek Drainage Improvement and Habitat Enhancement	41,461	2010		50	1	Enterprise Fund
15		522,000	2011		50	1	Enterprise Fund
16	4B - Talbot Road / Perrinville Creek Culvert Replacement	436,000	2012		50	1	Enterprise Fund
17		876,000	2013		50	1	Enterprise Fund
18	5 - 95th/93rd St project	72,000	2012		50	1	Enterprise Fund
19		696,000	2013		50	1	Enterprise Fund
20	6 - City-wide Drainage Replacement Projects	150,000	2010		50	1	Enterprise Fund
21		140,000	2011		50	1	Enterprise Fund
22		143,000	2012		50	1	Enterprise Fund
23		149,000	2013		50	1	Enterprise Fund
24		154,000	2014		50	1	Enterprise Fund
25		161,000	2015		50	1	Enterprise Fund
26		167,000	2016		50	1	Enterprise Fund
27	7 - Lake Ballinger Associated Projects	45,000	2010		50	1	Enterprise Fund
28		100,000	2011		50	1	Enterprise Fund
29		102,000	2012		50	1	Enterprise Fund

City of Edmonds
Stormwater Utility
Capital Improvement Program

Project Costs and O&M Impacts in Year:	2010

(Project costs are escalated using Construction Cost Inflation assumptions)

No	Description	Current Cost	Year	Annual O&M Impact	Life in Years	Specific Funding Source 1-Enterprise Fund, 2-Grants & Developer Donations	
30		106,000	2013		50	1	Enterprise Fund
31		110,000	2014		50	1	Enterprise Fund
32		115,000	2015		50	1	Enterprise Fund
33		119,000	2016		50	1	Enterprise Fund
34	8 - North Talbot Rd. Drainage Improvement Project	180,000	2012		50	1	Enterprise Fund
35	9 - Public Facilities Water Quality Upgrades	55,000	2011		50	1	Enterprise Fund
36		317,000	2012		50	1	Enterprise Fund
37	10 - Shell Valley Emergency Access Rd., Drainage Portion	20,000	2010		50	1	Enterprise Fund
38		195,000	2011		50	1	Enterprise Fund
39	11 - Stormwater Utility Contributions for Transportation Projects	50,000	2011		50	1	Enterprise Fund
40		51,000	2012		50	1	Enterprise Fund
41		53,000	2013		50	1	Enterprise Fund
42		55,000	2014		50	1	Enterprise Fund
43		57,000	2015		50	1	Enterprise Fund
44		60,000	2016		50	1	Enterprise Fund
45	Stormwater Comprehensive Plan	102,000	2010		50	1	Enterprise Fund
46	BNSF Crossings	372,000	2010		50	1	Enterprise Fund
47	Talbot Road/Terrace Creek Emergency Culvert Replacement	10,000	2010		50	1	Enterprise Fund
48	**TIER 2 PROJECTS**						Select Source
49	12 - Edmonds Marsh Restoration (Tier 2)	396,000	2014		50	1	Enterprise Fund
50		1,109,000	2015		50	1	Enterprise Fund
51		1,731,000	2016		50	1	Enterprise Fund
52	13 - Daylight Willow Creek in Marina Beach Park (Tier 2)	546,000	2014		50	1	Enterprise Fund
53		1,272,000	2015		50	1	Enterprise Fund
54		1,969,000	2016		50	1	Enterprise Fund
55	14 - Shell Creek Channel Restoration in Yost Park (Tier 2)	178,000	2014		50	1	Enterprise Fund
56	15 - Perrinville Creek High Flow Diversion and Habitat Restoration (Tier 2)	3,199,000	2014		50	1	Enterprise Fund
57		2,868,000	2015		50	1	Enterprise Fund
58		2,839,000	2016		50	1	Enterprise Fund
	Total Capital Projects	**$ 24,765,461**		**$ -**			

Tier 2 Projects

75% of Tier 2 Projects

City of Edmonds
Stormwater Utility
Capital Improvement Program

			0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Project Costs and O&M Impacts in Year:									
			TOTAL FORECASTED PROJECT COSTS							
No	**Description**	**TOTAL ESCALATED COSTS**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
1	1A - Southwest Edmonds Basin Study Project 1 - Replace Infiltration Pipe (near 107th Pl W.)	$ 27,000	$ -	$ -	$ -	$ 27,000	$ -	$ -	$ -	$ -
2		45,000	-	-	-	-	45,000	-	-	-
3	1B - SW Edmonds Basin Study Project 2 - Connect Sumps near Robin Hood Lane	105,000	-	-	-	-	-	-	105,000	-
4		441,000	-	-	-	-	-	-	-	441,000
5	1C - SW Edmonds Basin Study Project 3 - Connect Sumps on 238th St SW to Hickman Park Ir	105,000	-	-	-	105,000	-	-	-	-
6		448,000	-	-	-	-	448,000	-	-	-
6	1D - SW Edmonds Basin Study Project 4 - Connect Sumps on 105th & 106th Ave W near 228th	106,000	-	-	106,000	-	-	-	-	-
7		341,000	-	-	-	341,000	-	-	-	-
8	2A - Shellabarger Crk/Willow Crk/Edmonds Marsh 100-year floodplain delineation study	239,000	-	-	239,000	-	-	-	-	-
9	2B - Willow Creek Pipe Rehabilitation	519,000	-	-	-	-	-	519,000	-	-
10	3A - Northstream Storm Repair & Abandonment South of Puget Drive	46,000	-	-	-	-	46,000	-	-	-
11		172,000	-	-	-	-	-	172,000	-	-
12	3B - Northstream Pipe Rehabilitation	29,000	-	-	-	-	-	29,000	-	-
13		54,000	-	-	-	-	-	-	54,000	-
14	4A - Talbot Road / Perrinville Creek Drainage Improvement and Habitat Enhancement	41,461	-	41,461	-	-	-	-	-	-
15		522,000	-	-	522,000	-	-	-	-	-
16	4B - Talbot Road / Perrinville Creek Culvert Replacement	436,000	-	-	-	436,000	-	-	-	-
17		876,000	-	-	-	-	876,000	-	-	-
18	5 - 95th/93rd St project	72,000	-	-	-	72,000	-	-	-	-
19		696,000	-	-	-	-	696,000	-	-	-
20	6 - City-wide Drainage Replacement Projects	150,000	-	150,000	-	-	-	-	-	-
21		140,000	-	-	140,000	-	-	-	-	-
22		143,000	-	-	-	143,000	-	-	-	-
23		149,000	-	-	-	-	149,000	-	-	-
24		154,000	-	-	-	-	-	154,000	-	-
25		161,000	-	-	-	-	-	-	161,000	-
26		167,000	-	-	-	-	-	-	-	167,000
27	7 - Lake Ballinger Associated Projects	45,000	-	45,000	-	-	-	-	-	-
28		100,000	-	-	100,000	-	-	-	-	-
29		102,000	-	-	-	102,000	-	-	-	-

City of Edmonds
Stormwater Utility
Capital Improvement Program

No	Description	TOTAL ESCALATED COSTS	2009	2010	2011	2012	2013	2014	2015	2016
			0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Project Costs and O&M Impacts in Year:		TOTAL FORECASTED PROJECT COSTS							
30		106,000	-	-	-	-	106,000	-	-	-
31		110,000	-	-	-	-	-	110,000	-	-
32		115,000	-	-	-	-	-	-	115,000	-
33		119,000	-	-	-	-	-	-	-	119,000
34	8 - North Talbot Rd. Drainage Improvement Project	180,000	-	-	-	180,000	-	-	-	-
35	9 - Public Facilities Water Quality Upgrades	55,000	-	-	55,000	-	-	-	-	-
36		317,000	-	-	-	317,000	-	-	-	-
37	10 - Shell Valley Emergency Access Rd., Drainage Portion	20,000	-	20,000	-	-	-	-	-	-
38		195,000	-	-	195,000	-	-	-	-	-
39	11 - Stormwater Utility Contributions for Transportation Projects	50,000	-	-	50,000	-	-	-	-	-
40		51,000	-	-	-	51,000	-	-	-	-
41		53,000	-	-	-	-	53,000	-	-	-
42		55,000	-	-	-	-	-	55,000	-	-
43		57,000	-	-	-	-	-	-	57,000	-
44		60,000	-	-	-	-	-	-	-	60,000
45	Stormwater Comprehensive Plan	102,000	-	102,000	-	-	-	-	-	-
46	BNSF Crossings	372,000	-	372,000	-	-	-	-	-	-
47	Talbot Road/Terrace Creek Emergency Culvert Replacement	10,000	-	10,000	-	-	-	-	-	-
48	**TIER 2 PROJECTS**	-	-	-	-	-	-	-	-	-
49	12 - Edmonds Marsh Restoration (Tier 2)	396,000	-	-	-	-	-	396,000	-	-
50		1,109,000	-	-	-	-	-	-	1,109,000	-
51		1,731,000	-	-	-	-	-	-	-	1,731,000
52	13 - Daylight Willow Creek in Marina Beach Park (Tier 2)	546,000	-	-	-	-	-	546,000	-	-
53		1,272,000	-	-	-	-	-	-	1,272,000	-
54		1,969,000	-	-	-	-	-	-	-	1,969,000
55	14 - Shell Creek Channel Restoration in Yost Park (Tier 2)	178,000	-	-	-	-	-	178,000	-	-
56	15 - Perrinville Creek High Flow Diversion and Habitat Restoration (Tier 2)	3,199,000	-	-	-	-	-	3,199,000	-	-
57		2,868,000	-	-	-	-	-	-	2,868,000	-
58		2,839,000	-	-	-	-	-	-	-	2,839,000
	Total Capital Projects	**$ 24,765,461**	**$ -**	**$ 740,461**	**$ 1,407,000**	**$ 1,774,000**	**$ 2,419,000**	**$ 5,358,000**	**$ 5,741,000**	**$ 7,326,000**
	Tier 2 Projects	16,107,000	**0**	**0**	**0**	**0**	**0**	**4,319,000**	**5,249,000**	**6,539,000**
	75% of Tier 2 Projects	12,080,250	**0**	**0**	**0**	**0**	**0**	**3,239,250**	**3,936,750**	**4,904,250**

City of Edmonds
Stormwater Utility
Capital Funding Analysis

Summary of Expenditures	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
TOTAL CAPITAL EXPENDITURES	**$ -**	**$ 740,461**	**$ 1,407,000**	**$ 1,774,000**	**$ 2,419,000**	**$ 5,358,000**	**$ 5,741,000**	**$ 7,326,000**	**$ 24,765,461**

Capital Financing Plan	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
Project Specific Grants / Developer Donations	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Project to be Funded	-	740,461	1,407,000	1,774,000	2,419,000	5,358,000	5,741,000	7,326,000	24,765,461
OTHER FUNDING SOURCES [NOTE A]									
Tier 2 Project Grants & Other Outside Sources	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,239,250**	**$ 3,936,750**	**$ 4,904,250**	12,080,250
PWTF Loan Proceeds	-	-	-	-	-	-	-	-	-
Other Loan Proceeds	-	-	-	-	-	-	-	-	-
Capital Fund Balance	-	538,820	38,083	1,774,000	297,485	2,118,750	285,810	2,421,750	7,474,697
Revenue Bond Proceeds [Note B]	-	-	1,368,917	-	2,121,515	-	1,518,440	-	5,008,873
Rates	-	201,641	-	-	-	-	-	-	201,641
Total	$ -	$ 740,461	$ 1,407,000	$ 1,774,000	$ 2,419,000	$ 5,358,000	$ 5,741,000	$ 7,326,000	$ 24,765,461
									-
TOTAL CAPITAL RESOURCES	**$ -**	**$ 740,461**	**$ 1,407,000**	**$ 1,774,000**	**$ 2,419,000**	**$ 5,358,000**	**$ 5,741,000**	**$ 7,326,000**	**$ 24,765,461**
Info: Capital Contingency Deficit	-	-	-	-	-	-	-	-	**$ -**

NOTE A: SELECTION OF RESIDUAL CAPITAL FUNDING SOURCE

Select the Residual Funding Source	1	**Revenue Bond Proceeds**

1 - Revenue Bond Proceeds

2 - Rates

NOTE B: USER INPUT FOR REVENUE BOND PROCEEDS

Select Amount of Bond Proceeds	1	**User Defined**

1 - Amounts at Right ==>	$ -	$ -	$ 3,100,000	$ -	$ 4,200,000	$ -	$ 3,850,000	$ -	$ 11,150,000

2 - Calculated by the Model

City of Edmonds
Stormwater Utility
Capital Funding Analysis

New Debt Computations	2009	2010	2011	2012	2013	2014	2015	2016	TOTAL
REVENUE BONDS									
Amount to Fund	$ -	$ -	$ 3,100,000	$ -	$ 4,200,000	$ -	$ 3,850,000	$ -	$ 11,150,000
Issuance Costs	-	-	-	-	-	-	-	-	-
Reserve Required	-	-	270,454	-	366,421	-	335,886	-	972,762
Amount of Debt Issue	$ -	$ -	$ 3,370,454	$ -	$ 4,566,421	$ -	$ 4,185,886	$ -	$ 12,122,762
OTHER LOANS									
Amount to Fund	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Issuance Costs	-	-	-	-	-	-	-	-	-
Amount of Debt Issue	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
PWTF LOAN									
Amount to Fund [a]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

[a] 2004 and 2005 PWTF loan payment schedules input as existing debt. Amounts shown for reference.

Debt Service Summary	2009	2010	2011	2012	2013	2014	2015	2016
EXISTING DEBT SERVICE								
Annual Interest Payments	$ 96,747	$ 91,732	$ 86,452	$ 80,962	$ 75,343	$ 69,681	$ 63,800	$ 58,982
Annual Principal Payments	162,546	168,673	169,886	170,583	171,755	177,434	153,460	158,080
Total Debt Service Payments	$ 259,293	$ 260,405	$ 256,338	$ 251,545	$ 247,098	$ 247,115	$ 217,260	$ 217,061
Revenue Bond Payments Only	59,880	60,087	58,827	53,476	60,197	59,930	59,610	59,215
NEW DEBT SERVICE								
Annual Interest Payments	$ -	$ -	$ 168,523	$ 163,426	$ 386,396	$ 373,872	$ 570,016	$ 549,879
Annual Principal Payments	-	-	101,931	107,028	250,480	263,004	402,746	422,883
Total Debt Service Payments	$ -	$ -	$ 270,454	$ 270,454	$ 636,875	$ 636,875	$ 972,762	$ 972,762
Revenue Bond Payments Only	-	-	270,454	270,454	636,875	636,875	972,762	972,762
TOTAL DEBT SERVICE PAYMENTS	**$ 259,293**	**$ 260,405**	**$ 526,792**	**$ 521,999**	**$ 883,974**	**$ 883,991**	**$ 1,190,022**	**$ 1,189,823**
Total Interest Payments	96,747	91,732	254,975	244,388	461,739	443,553	633,816	608,860
Total Principal Payments	162,546	168,673	271,817	277,611	422,235	440,437	556,206	580,963
Total Revenue Bond Payments Only	59,880	60,087	329,281	323,930	697,072	696,806	1,032,372	1,031,977

City of Edmonds
Stormwater Utility
Revenue Requirements Analysis

Cash Flow Sufficiency Test	2009	2010	2011	2012	2013	2014	2015	2016
EXPENSES								
Cash Operating Expenses	$ 1,414,559	$ 1,580,748	$ 1,875,356	$ 1,969,695	$ 2,044,055	$ 2,121,571	$ 2,202,383	$ 2,286,640
Existing Debt Service	259,293	260,405	256,338	251,545	247,098	247,115	217,260	217,061
New Debt Service	-	-	270,454	270,454	636,875	636,875	972,762	972,762
Rate-Funded CIP	-	201,641	-	-	-	-	-	-
Rate Funded System Reinvestment	-	-	-	-	-	-	-	-
Additions Required to Meet Minimum Op. Fund Balance	-	-	-	-	-	-	-	-
Total Expenses	$ 1,673,852	$ 2,042,794	$ 2,402,148	$ 2,491,694	$ 2,928,029	$ 3,005,561	$ 3,392,405	$ 3,476,463
REVENUES								
Rate Revenue	$ 2,022,787	$ 2,114,120	$ 2,124,690	$ 2,135,314	$ 2,145,990	$ 2,156,720	$ 2,167,504	$ 2,178,342
Other Revenue	55,924	7,885	7,885	7,885	7,885	7,885	7,885	7,885
Operating Fund & Debt Reserve Fund Interest Earnings	-	1,398	4,864	14,067	14,357	23,747	23,986	32,632
Total Revenue	$ 2,078,712	$ 2,123,403	$ 2,137,440	$ 2,157,265	$ 2,168,233	$ 2,188,353	$ 2,199,375	$ 2,218,859
NET CASH FLOW (DEFICIENCY)	**$ 404,860**	**$ 80,609**	**$ (264,708)**	**$ (334,429)**	**$ (759,796)**	**$ (817,209)**	**$ (1,193,030)**	**$ (1,257,604)**

Coverage Sufficiency Test	2009	2010	2011	2012	2013	2014	2015	2016
EXPENSES								
Cash Operating Expenses	$ 1,414,559	$ 1,580,748	$ 1,875,356	$ 1,969,695	$ 2,044,055	$ 2,121,571	$ 2,202,383	$ 2,286,640
Revenue Bond Debt Service	59,880	60,087	329,281	323,930	697,072	696,806	1,032,372	1,031,977
Revenue Bond Coverage Requirement at 1.25	14,970	15,022	82,320	80,982	174,268	174,201	258,093	257,994
Total Expenses	$ 1,489,409	$ 1,655,857	$ 2,286,957	$ 2,374,608	$ 2,915,396	$ 2,992,578	$ 3,492,848	$ 3,576,611
ALLOWABLE REVENUES								
Rate Revenue	$ 2,022,787	$ 2,114,120	$ 2,124,690	$ 2,135,314	$ 2,145,990	$ 2,156,720	$ 2,167,504	$ 2,178,342
Other Revenue	55,924	7,885	7,885	7,885	7,885	7,885	7,885	7,885
Interest Earnings - All Funds	-	9,480	5,626	58,976	21,794	76,804	31,131	94,281
Total Revenue	$ 2,078,712	$ 2,131,485	$ 2,138,201	$ 2,202,175	$ 2,175,670	$ 2,241,409	$ 2,206,520	$ 2,280,508
Individual Coverage Realized	11.09	9.17	0.80	0.72	0.19	0.17	0.00	(0.01)
INDIVIDUAL COVERAGE SURPLUS (DEFICIENCY)	$ 589,303	$ 475,628	$ (148,756)	$ (172,433)	$ (739,726)	$ (751,168)	$ (1,286,328)	$ (1,296,103)
COVERAGE SURPLUS (DEFICIENCY)	**$ 589,303**	**$ 475,628**	**$ (148,756)**	**$ (172,433)**	**$ (739,726)**	**$ (751,168)**	**$ (1,286,328)**	**$ (1,296,103)**

City of Edmonds
Stormwater Utility
Revenue Requirements Analysis

Maximum Revenue Deficiency	2009	2010	2011	2012	2013	2014	2015	2016
Sufficiency Test Driving the Deficiency	*None*	*None*	*Cash*	*Cash*	*Cash*	*Cash*	*Coverage*	*Coverage*
Maximum Deficiency From Tests	$ -	$ -	$ 264,708	$ 334,429	$ 759,796	$ 817,209	$ 1,286,328	$ 1,296,103
less: Net Revenue From Prior Rate Increases	-	-	(167,426)	(349,986)	(548,979)	(779,192)	(1,031,125)	(1,306,746)
Revenue Deficiency	$ -	$ -	$ 97,283	$ -	$ 210,817	$ 38,016	$ 255,203	$ -
Plus: Adjustment for State Excise Tax	-	-	1,481	-	3,210	579	3,886	-
Total Revenue Deficiency	**$ -**	**$ -**	**$ 98,764**	**$ -**	**$ 214,027**	**$ 38,595**	**$ 259,089**	**$ -**

Rate Increases	2009	2010	2011	2012	2013	2014	2015	2016
Rate Revenue with no Increase	$ 2,022,787	$ 2,114,120	$ 2,124,690	$ 2,135,314	$ 2,145,990	$ 2,156,720	$ 2,167,504	$ 2,178,342
Revenues from Prior Rate Increases	-	-	169,975	355,316	557,339	791,058	1,046,827	1,326,646
Rate Revenue Before Rate Increase (Incl. previous increases)	2,022,787	2,114,120	2,294,666	2,490,630	2,703,330	2,947,779	3,214,331	3,504,987
Required Annual Rate Increase	0.00%	0.00%	4.30%	0.00%	7.92%	1.31%	8.06%	0.00%
Number of Months New Rates Will Be In Effect	12	5	12	12	12	12	12	12
Info: Percentage Increase to Generate Required Revenue	*0.00%*	*0.00%*	*4.30%*	*0.00%*	*7.92%*	*1.31%*	*8.06%*	*0.00%*
Policy Induced Rate Increases	0.00%	8.00%	8.00%	8.00%	8.50%	8.50%	8.50%	
ANNUAL RATE INCREASE	**0.00%**	**8.00%**	**8.00%**	**8.00%**	**8.50%**	**8.50%**	**8.50%**	**0.00%**
CUMULATIVE RATE INCREASE	**0.00%**	**8.00%**	**16.64%**	**25.97%**	**36.68%**	**48.30%**	**60.90%**	**60.90%**

Impacts of Rate Increases	2009	2010	2011	2012	2013	2014	2015	2016
Rate Revenues After Rate Increase	$ 2,022,787	$ 2,184,591	$ 2,478,239	$ 2,689,881	$ 2,933,113	$ 3,198,340	$ 3,487,550	$ 3,504,987
Full Year Rate Revenues After Rate Increase	*2,022,787*	*2,283,249*	*2,478,239*	*2,689,881*	*2,933,113*	*3,198,340*	*3,487,550*	*3,504,987*
Additional State Taxes Due to Rate Increases	-	1,057	5,303	8,318	11,807	15,624	19,801	19,900
Net Cash Flow After Rate Increase	404,860	150,022	83,537	211,820	15,520	208,786	107,215	49,142
Individual Coverage After Rate Increase	11.09	10.32	1.86	2.40	1.30	1.64	1.26	1.26

City of Edmonds
Stormwater Utility
Fund Activity

Funds		2009	2010	2011	2012	2013	2014	2015	2016
OPERATING FUND									
Beginning Balance b/f Repayments	Loan Balance		$ 32,191	$ 182,213	$ 231,208	$ 242,839	$ 252,007	$ 261,564	$ 271,527
Loan from Sewer Utility and Repayment	-		-	-	-	-	-	-	-
Beginning Balance After Repayments			$ 32,191	$ 182,213	$ 231,208	$ 242,839	$ 252,007	$ 261,564	$ 271,527
plus: Net Cash Flow after Rate Increase			150,022	83,537	211,820	15,520	208,786	107,215	49,142
less: Transfer of Surplus to Capital Fund			-	(34,542)	(200,189)	(6,352)	(199,230)	(97,252)	(38,754)
Ending Balance ($600K assumed to be transferred to capital fund)		$ 32,191	$ 182,213	$ 231,208	$ 242,839	$ 252,007	$ 261,564	$ 271,527	$ 281,914
Minimum Target Balance		*116,265*	*129,924*	*154,139*	*161,893*	*168,005*	*174,376*	*181,018*	*187,943*
Maximum Funds to be Kept as Operating Reserves		*174,398*	*194,887*	*231,208*	*242,839*	*252,007*	*261,564*	*271,527*	*281,914*
Info: No of Days of Cash Operating Expenses		*8*	*42*	*45*	*45*	*45*	*45*	*45*	*45*
CAPITAL FUND									
Beginning Balance b/f Interfund Loan	Loan Balance		$ 538,820	$ 38,083	$ 1,796,386	$ 297,485	$ 2,122,274	$ 285,810	$ 2,465,957
Loan from Sewer Utility and Repayment	-		-	-	-	-	-	-	-
Beginning Balance			$ 538,820	$ 38,083	$ 1,796,386	$ 297,485	$ 2,122,274	$ 285,810	$ 2,465,957
plus: Rate Funded System Reinvestment			-	-	-	-	-	-	-
plus: Grants / Developer Donations / Other Outside Sources			-	-	-	-	3,239,250	3,936,750	4,904,250
plus: Capital Facilities Charges			30,000	30,000	30,000	30,000	30,000	30,000	30,000
plus: Net Debt Proceeds Available for Projects			-	3,100,000	-	4,200,000	-	3,850,000	-
plus: Interest Earnings			8,082	762	44,910	7,437	53,057	7,145	61,649
plus: Transfer of Surplus from Operating Fund			-	34,542	200,189	6,352	199,230	97,252	38,754
plus: Direct Rate Funding			201,641	-	-	-	-	-	-
less: Capital Expenditures			(740,461)	(1,407,000)	(1,774,000)	(2,419,000)	(5,358,000)	(5,741,000)	(7,326,000)
Ending Balance ($600K is assumed to be transferred fr. Op. F.)		$ 538,820	$ 38,083	$ 1,796,386	$ 297,485	$ 2,122,274	$ 285,810	$ 2,465,957	$ 174,611
Minimum Target Balance		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
DEBT RESERVE									
Beginning Balance			$ 61,000	$ 61,000	$ 331,454	$ 331,454	$ 697,875	$ 697,875	$ 1,033,762
plus: Reserve Funding from New Debt			-	270,454	-	366,421	-	335,886	-
less: Use of Reserves for Debt Service			-	-	-	-	-	-	-
Ending Balance		$ 61,000	$ 61,000	$ 331,454	$ 331,454	$ 697,875	$ 697,875	$ 1,033,762	$ 1,033,762
Minimum Target Balance		*60,197*	*60,197*	*330,651*	*330,651*	*697,072*	*697,000*	*1,032,886*	*1,032,886*