



City of Seattle

February 3, 2012

Washington Department of Ecology
Water Quality Program
PO Box 47696
Olympia, WA 98504-7696

Dear Ms. Graul,

The City of Seattle appreciates the opportunity to provide input to the Department of Ecology regarding the NPDES Municipal Stormwater permit requirements for 2012-2017. As the largest municipality in Washington State, Seattle understands the importance of its role in stormwater management and is committed to improving the health of receiving waters by continuing to reduce the impacts of stormwater runoff. We are proud of our comprehensive stormwater program and supportive of changes to permit requirements that increase our effectiveness in managing stormwater impacts. We feel that it is important for all jurisdictions to step up and take appropriate actions to control stormwater runoff, and thank the Department of Ecology for their leadership on this issue.

We appreciate Ecology's consideration of our earlier comments to informal drafts of the Low Impact Development (LID) and monitoring sections of the permit and the changes that are reflected in the current version. We understand the difficulty of taking an aggressive stance toward protecting water quality while working with the wide range of local land use conditions across the state.

Of all of the changes in proposed permit requirements, none has more potential for improving stormwater management than the inclusion of LID requirements. Seattle was a pioneer in the development of Natural Drainage System projects and has proven that this approach can be a successful alternative to conventional piped drainage systems. To date, Seattle has developed projects that successfully treat runoff from over 200 acres. This work has allowed Seattle to develop concepts and design knowledge that are respected nationally and internationally. Our decade of experience in implementing projects locally, combined with our experience in the development and implementation of local requirements to increase the use of GSI for development and redevelopment, provides the basis for our comments on technical and feasibility aspects of LID requirements in urban environments. Although it is not a panacea, LID represents an important shift in the management of stormwater -- one that can provide multiple environmental, economic and social benefits while creating greater system resiliency to accommodate the effects of climate variability. We look forward to continued collaboration with Ecology to help to ensure that the use of LID will live up to its full potential.

City of Seattle
700 5th Avenue, Suite 4900
PO Box 34018
Seattle, WA 98124-4018

Tel (206) 684-5851
Fax (206) 684-4631
TDD (206) 233-7241

<http://www.seattle.gov/util>

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Ms. Graul
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Seattle also has carefully reviewed proposed permit changes regarding how monitoring will be conducted under the permit. While we see potential benefits for regional monitoring, there is much work to be done to ensure that this is effective for informing improvements to stormwater management. We urge Ecology to encourage a deliberate and step-wise approach toward developing a successful regional monitoring program during the next permit cycle. We believe that the committees that have been formed to support the regional monitoring program will need time to adjust to their roles and responsibilities and will likely need additional technical staff support from Ecology to realize their potential. It is very important that we focus our collective efforts on securing a successful beginning during the next permit cycle. Substantial staff and financial resources from permittees will be needed to support this work and it is important that these are used effectively to maintain public support.

Finally, we respect the considerable challenge of developing permit requirements that apply to all permittees in Western Washington, and we wish to support Ecology in this effort by providing comments on requirements that have particular relevance to built-out environments like the City of Seattle. Of particular concern are areas where the proposed permit language may conflict with other land use goals and regulations -- LID requirements should be balanced with other environmental policy issues including growth management and providing transportation choices. We have offered some alternative language in our comments that we believe will help eliminate some of this conflict or ambiguity.

The attachments to this letter include our detailed comments that are organized by permit section and are followed by edited versions of the proposed permit and associated appendices that include proposed wording changes. Our comments respond to proposed LID and monitoring requirements as well as general permit conditions. We hope that these comments will be useful in the development of the final permit requirements.

Thank you for working with us to develop effective permit requirements to protect our environment. If you have any questions or require further information, please contact Kevin Buckley, (Kevin.Buckley@Seattle.gov or 206-733-9195). We look forward to continuing to work with you .

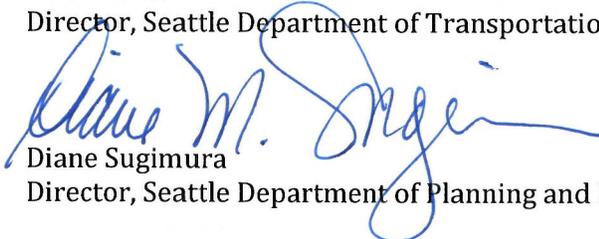
Sincerely,



Ray Hoffman
Director, Seattle Public Utilities



Peter Hahn
Director, Seattle Department of Transportation



Diane Sugimura
Director, Seattle Department of Planning and Development

**Phase I Municipal Stormwater General Permit –Draft 2013 5-year Permit Language
City of Seattle Comments: Attachment 1
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The City of Seattle appreciates the opportunity to provide input to the Department of Ecology regarding the NPDES Municipal Stormwater permit requirements for 2012-2017. As the largest municipality in Washington State, Seattle understands the importance of its role in stormwater management and is committed to improving the health of receiving waters by continuing to reduce the impacts of stormwater runoff. We are proud of our comprehensive stormwater program and supportive of changes to permit requirements that increase our effectiveness in managing stormwater impacts. Our comments respond to proposed LID and monitoring requirements as well as general permit conditions. We hope that these comments will be useful in the development of the final permit requirements.

This attachment contains the City of Seattle’s comments on the Draft 2013 5-year NPDES Phase I Municipal Stormwater Permit. In addition to the comments provided in this attachment, Seattle is providing tracked changes versions of the Draft Permit, Appendix 1, Appendix 9, Appendix 11, and Appendix 12 that contain the changes suggested in this attachment. The tracked changes versions also include suggested corrections, deletions or additions that are not presented in this document because Seattle feels that they are self-explanatory.

S1. PERMIT COVERAGE AND PERMITTEES

Comment #1: S1.A – Municipal Separate Storm Sewer, Page 5¹

Seattle requests that Ecology reinsert the deleted language in S1.A: “*municipal separate storm sewers (MS3) owned or operated by*” and “*Large and medium MS4s include all MS3s located within cities or counties required to have permit coverage.*” Seattle believes that throughout the permit the term “MS3” should be used as in previous Phase I permits, as the more precise and correct term for regulated stormwater conveyances. In a Municipal Separate Storm Sewer System (MS4), there may be many MS3s with different owners and operators. The permit should continue to be carefully crafted in the way it assigns responsibility, and to follow federal rule definitions.

S2. AUTHORIZED DISCHARGES

Comment #2: S2.B.2 - Emergency Fire Fighting Discharges, Page7

Seattle requests that Ecology delete the words “occurred during” and replace them with “*associated with*” when establishing that discharges during emergency fire fighting activities are allowable discharges into or from the MS4. Seattle understands that Ecology’s intent is to specify that the allowable discharge is only during the emergency. However, in some cases the

¹ Note: The page number presented represents the page number in the Draft 5-Year (2013-2018) NPDES Permit from Ecology and not the page number in the track changes version of the permit submitted by Seattle with these comments.

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discharges associated with the emergency may continue to dissipate after the fire is out, so some flexibility is needed.

S3. RESPONSIBILITIES OF PERMITTEES

Comment #3: S3.A.1 – Name of Section Change, Page 8

Seattle requests that Ecology delete the words “*Co-Permittees*” from this Special Condition to reflect the change in the title of Special Condition S6.

Comment #4: S3.B – Delete Language on 40 CFR 122.35(a), Page 8

Seattle requests that Ecology delete the language: “*Permittees may rely on another entity provided all the requirements of 40 CFR 122.35(a) are satisfied, including but not limited to:*” This language is not needed as the existing permit language assigns responsibility. Furthermore, the cited regulation applies to Phase II and not Phase I.

Comment #5: S3.B.1- Delete the Language, Page 8

Seattle requests that Ecology delete the added language: “*The other entity agrees to take on responsibility for implementation of the permit requirement(s).*” This language is not needed as the existing permit language assigns responsibility.

Comment #6: S3.B.2- Delete the Language, Page 8

Seattle requests that Ecology delete the added language: “*The other entity, in fact, implements the Permit requirements.*” This language is not needed as the existing permit language assigns responsibility.

S5. STORMWATER MANAGEMENT PROGRAM

Comment #7: S5.A Stormwater Management Program. Page 11

Seattle requests that Ecology revise and reinsert the deleted language into S5.A that specifies: “*For the purpose of this permit a stormwater management program is a set of actions and activities comprising the components listed in S5.C of this Permit, any applicable actions required by S7 (TMDL) and Appendix 2, activities required by S8 (monitoring), and activities required to meet S4.F obligations.*” It is important that this modified language be retained in S5.A as Special Condition S5 and S7 are prescriptive in nature. Permittees and the public must be informed about what constitutes the components of a stormwater management program (SWMP) and compliance in the absence of an Ecology-approved SWMP. Seattle understands that the SWMP is included in the definitions and further explained in the Fact Sheet, but retaining the deleted language will provide clarity and is not in conflict with the Ecology objective to simplify permit language. Identifying these items provides greater certainty about the scope of each Permittee’s obligations, to assist with planning, implementing, budgeting, and compliance.

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Comment #8: S5.B – SWMP Components, Page 12

Seattle requests that the new language on SWMP component implementation and “no repeal” added to section S5.B be deleted and the original 2007 Permit language be maintained for S5.B, to read: *“Permittees are to continue implementation of existing SWMP until they begin implementation of the updated SWMP in accordance with the terms of this permit, including implementation schedules.”*

Administratively, the “no repeal” amendment proposed by Ecology could prohibit routine repeal of previous ordinances required to adopt new stormwater ordinances. In addition, Permittees such as Seattle would be hesitant to adopt innovative stormwater regulation “beyond” permit requirements. This would adversely impact adaptive management and cause a chilling effect on the future expansion of alternative LID BMPs. Phase I’s have mature local regulatory programs and need flexibility to adjust requirements based on technical feasibility, O&M, basin needs, and experiences; the proposed language would remove this flexibility.

Comment #9: S5.C – SWMP Components, Page 12

Seattle requests that Ecology strike the added language and reinsert the deleted language into S5.C that specifies that: *“The requirements of the stormwater management program shall apply to municipal separate storm sewers, and areas served by municipal separate storm sewers owned or operated by the Permittee.”* Ecology states in the Fact Sheet that this language was removed because it was redundant with S3.A. However, it is Seattle’s opinion that Ecology must retain this language to clarify the scope of the permit and SWMP. The language clarifies that the SWMP applies to the MS3 owned and operated by the Permittee, and not to stormwater discharges into the combined or direct discharges into receiving water bodies, which would extend beyond the authority established by the Clean Water Act.

Comment #10: S5.C.1.b.iv – Legal Authority, Page 13

Seattle suggests that the language “among co-applicants” be retained in the permit. This was included in the 2007 permit to match the federal rule and account for parties choosing to apply for permit coverage together “where more than one public entity owns or operates a [MS3] within a geographic area (including adjacent or interconnected [MS4s])...” A new, broader obligation is not intended by Ecology. Therefore, retaining the language is appropriate.

Comment #11: S5.C.2.a.vii – Mapping, Page 14

Seattle suggests the following language to S5.C.2.a.vii: *“No later than 24 months after the effective date of this permit, map all connections to the MS3s owned or operated by the Permittees authorized or allowed by the Permittee after February 16, 2007.”* Seattle is suggesting this change to account for the fact that in the 2007 permit the requirement in S5.C.2.b. iii was to “...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

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this permit.” The suggested change provides a phase-in period for the permit requirements that is needed to allow municipalities to catch up on connections that may have been permitted and installed during the 2007 permit term but are yet to be entered into the mapping system that was initiated during the 2007 permit term.

Comment #12: S5.C.2.b.iii, New Mapping, page 15

Seattle suggests that Ecology delete the words “or maintained” from the requirement as the term “operate” covers maintenance.

Comment #13: S5.C5.a.iii – Application of Program, Page 18

Seattle already has a robust stormwater program that includes the requirement to use LID on most projects. Significant effort has been put forth in developing this program. Seattle has collaborated and shared with Ecology, WSU Puyallup and other jurisdictions many of the LID modeling and feasibility criterion created through the development of Seattle’s stormwater program.

Seattle and other jurisdictions, especially in Phase 1 urban environments, have special basin and programmatic needs and thus need to maintain the ability to create documents equivalent to the Permit and the SMMWW.

Given the significant changes in the SMMWW and the fact that many portions of the SMMWW are yet to be written and reviewed, additional time for jurisdictions to review and adopt an equivalent stormwater manual is necessary. This is especially true for those with an already robust program, is necessary.

Completing a gap analysis between a jurisdiction’s existing code/manuals and the SMMWW will be a significant effort. After the gap analysis is performed, the Permittee must update affected portions of its code/manuals and create equivalency documentation and modeling for Ecology’s review and approval. For Seattle, this documentation in the past has required significant effort. Time and effort necessary for outreach to the public, elected officials, and various stakeholder groups is also considerable. In addition, prior to submitting final draft documents to Ecology, there will multiple pre-draft iterations where it is assumed at least a 30 – 60 day review period will be necessary for Ecology for each iteration.

Therefore, Seattle requests an extension of six months to submit its draft documents to Ecology:

“The Permittee shall submit draft enforceable requirements, technical standards and manual to Ecology no later than June 30, 2014 ~~December 31, 2013~~. Ecology will review and provide written response to the Permittee....”

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Consequently, an extension of six months to the effective date is necessary: “No later *than June 30, 2015* ~~December 31, 2014~~, each Permittee shall adopt and make effective a local program that meets the requirements in S5.C.5.a.i through ii, above.”

Comment #14: S5.C5.a.iii - Application of Program, Page 18-19

The primary goal of the suggested changes below is to reach a similar result as the draft permit language by using terminology and concepts already existing in Washington land use law and SEPA. Requiring project-related renewals or extensions to meet updated requirements, provided the projects have not begun construction, strikes a balance between the need to require use of LID and the need to provide certainty. Seattle expects that the proposed change would result in more LID than the 2020 deadline for start of construction as proposed in the draft..

In **Option 1 & Option 2** below, the sentence beginning “Every complete application,” accomplishes three things:

1. Speaking in terms of applying requirements to “projects” is not accurate. “Project permit application” is already defined by statute and is the opportunity for local jurisdictions to exercise land use permitting authority.
2. Applying the new requirements to projects approved before June 30, 2015, but that have not started construction by January 1, 2020 would conflict directly with state law on the finality of land use decisions. However, local governments should have the authority to apply new requirements when a developer seeks to renew or extend an existing permit. This language uses that authority while retaining the concept from Ecology’s original proposal to exempt projects for which construction has already started.
3. It fills the gap in the draft left for applications submitted *before* June 30, 2015 but approved *after* that date.

Additionally, the definition of “application” creates tension with state law on “complete applications.” This tension can be resolved by referring to state law.

Therefore, Seattle suggests two options for consideration to address these issues while reaching a similar result as proposed in the draft permit:

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Option 1:

“No later ~~than June 30, 2015~~ ~~December 31, 2014~~, each Permittee shall adopt and make effective a local program that meets the requirements in S5.C.5.a.i through ii, above. Every complete project permit application³ filed⁴ after June 30, 2015 shall be considered under the local program adopted to meet the requirements of S5.C.5.a.i through ii, above, to the same extent that the application must be considered under the zoning or other land use control ordinances in effect on the date the application is filed ~~The local program adopted to meet the requirements of S5.C.5.b.i through ii, above, shall apply to all applications³ submitted after January 1, 2015 and shall apply to projects approved prior January 1, 2015, which have not started construction⁴ by January 1, 2018.~~

Notwithstanding the foregoing sentence, if filed after June 30, 2015, every complete project permit application to renew or extend an existing project permit for a project that has not started construction⁵ shall be considered under the local program adopted to meet the requirements of S5.C.5.a.i through ii to the same extent that the application must be considered under the zoning or other land use control ordinances in effect on the date the application is filed, regardless of the date on which the original complete project permit application was filed.”

³ In this context, “project permit application” has the meaning accorded by state law (see RCW 36.70B.020(4)), and includes but is not limited to an application to renew or extend an existing project permit ~~application means, at a minimum a complete; project description, site plan, and, if applicable, SEPA checklist.~~

⁴ The date on which a complete application is filed shall be determined by the Permittee consistent with applicable state law. See, e.g., RCW 36.70B.070.

⁵ “Started construction” means the site work associated with, and directly related to the approved project has begun. For example: grading the project site to final grade or utility installation. Simply clearing the project site does not constitute the start of construction.

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Option 2:

“No later ~~than June 30, 2015~~ ~~December 31, 2014~~, each Permittee shall adopt and make effective a local program that meets the requirements in S5.C.5.a.i through ii, above. Every complete project permit application³ filed⁴ after June 30, 2015 shall be considered under the local program adopted to meet the requirements of S5.C.5.a.i through ii, above ~~The local program adopted to meet the requirements of S5.C.5.b.i through ii, above, shall apply to all applications³ submitted after January 1, 2015 and shall apply to projects approved prior January 1, 2015, which have not started construction² by January 1, 2018.~~

Notwithstanding the foregoing sentence, if filed after June 30, 2015, every complete project permit application to renew or extend an existing project permit for a project that has not started construction⁵ shall be considered under the local program adopted to meet the requirements of S5.C.5.a.i through ii, regardless of the date on which the original complete project permit application was filed.”

³ In this context, “project permit application” has the meaning accorded by state law (see RCW 36.70B.020(4)), and includes but is not limited to an application to renew or extend an existing project permit ~~application means, at a minimum a complete; project description, site plan, and, if applicable, SEPA checklist.~~

⁴ The date on which a complete application is filed shall be determined by the Permittee consistent with applicable state law. See, e.g., RCW 36.70B.070.

⁵ “Started construction” means the site work associated with, and directly related to the approved project has begun. For example: grading the project site to final grade or utility installation. Simply clearing the project site does not constitute the start of construction.

Comment #15: S5.C5.a.iii - Application of Program, Page 19

Seattle requests that the following language be added to the last paragraph of S5.C5.a.iii:
“Extensions shall be granted by Ecology for a reasonable length of time appropriate to the circumstances (for example, the duration of litigation or administrative appeal) without penalty, and permit modifications shall not be necessary for such extensions.”

Extensions should specifically be provided for in the permit and should be available without the public cost of permit modifications.

Comment #16: S5.C5.b.i – Revision of Local Development Related Codes, Page 20

Seattle supports aligning development codes (especially the Land Use Code) with LID BMPs/Principles. Seattle has been working on aligning its development related codes with green building for the past five plus years and is continuing to do so - the PSP guidebook provides Permittees with useful guidance for removing barriers to LID. The proposed language allows much-needed local flexibility to adopt guidelines that make sense for urban infill development, without mandating specific measures that do not make sense in that context.

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For the effective date associated with development-related codes, a six-month extension is requested to correspond with the effective date of S5.C5.a.iii. Alignment of schedules for local code changes and review of local stormwater regulations to remove barriers to LID should be consistent. Therefore, Seattle requests the following change: “No later than June 30, 2015 ~~December 31, 2014~~, Permittees shall review and revise their local development-related codes, rules, standards, or other enforceable documents to incorporate and require Low Impact Development (LID) Principles and LID Best Management Practices (BMPs).”

Comment #17: S5.C5.b.i – Revision of Local Development Related Codes, Page 20

Seattle requests that the following language be added to the last paragraph of S5.C5.bi: “*In the case of circumstances beyond the Permittee’s control, such as litigation or administrative appeals that may result in noncompliance with the requirements of this section, the Permittee shall promptly notify Ecology and submit a written request for an extension. Extensions shall be granted by Ecology for a reasonable length of time appropriate to the circumstances (for example, the duration of litigation or administrative appeal) without penalty, and permit modifications shall not be necessary for such extensions.*” This language is copied from Page 19, Section S5.C5.a.iii, Lines 9-12. Extensions should specifically be provided for in the permit and should be available without the additional cost of a permit modification.

Comment #18: S5.C5.b.ii – Results of Revision Process, Page 20

To correspond with the six-month extension associated with S5.C5.b.i, the Annual Report date is affected as follows: “Each Permittee shall submit a summary of the results of the review and revision process in i above with the ~~Second~~ Third Year Annual Report¹.”

¹The ~~Second~~ Third Year Annual Report covering calendar year 2014 2015 is due no later than March 31, ~~2015~~ 2016.

Comment #19: S5.C.5.b.v.3 – Final Inspection of Permanent Stormwater Facilities, Page 20

Seattle requests that Ecology remove the added language “ensure” and retain the word “verify” when describing actions around the final inspection of permanent stormwater facilities as Seattle cannot ensure the actions of others and should not be required to do so as a regulator.

Comment #20: S5.C.6. - Structural Stormwater Controls – General Comment, p.23

Seattle supports Ecology providing Permittees with the flexibility to manage their structural stormwater control programs to meet the needs of local receiving waters and to include a variety of different types of projects or programs with a variety of different types of benefits. Seattle appreciates Ecology’s initial approach to establish a basis for a potential future minimum performance standard in permits for retrofitting through “retrofit incentives.” The “retrofit incentive” concept is new, and we need experience implementing it to refine this concept to determine if it can be used as a minimum performance standard in future permits. Seattle

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encourages Ecology to engage with Permittees during the upcoming permit cycle to “refine this standardized reporting approach as necessary after evaluating how well it works during this permit cycle” (Fact Sheet, p. 93).

Comment #21: S5.C.6.a.i - Add High-efficiency Street Sweeping as project type, p. 23

Seattle recommends adding “*High-efficiency street sweeping*” to the list of projects to allow the flexibility to remove pollutants using the most cost-effective approaches. In highly built-out areas like Seattle, high-efficiency street sweeping can be more cost-effective for pollutant removal and more readily implementable than conventional structural retrofitting. Seattle recently completed its first year of implementing its new Street Sweeping for Water Quality program, which is focused on approximately every-other-week high-efficiency street sweeping on curbed arterials and on curbed industrial streets that drain to the City’s MS3s. Seattle estimates that the cost per kilogram TSS removed (based on a 100yr life-cycle cost) of the program was less than for regional stormwater facilities. Seattle also estimates that, during the first year of the program, more pollutants were prevented from entering the City’s MS3s from high-efficiency street sweeping (based on TSS estimates) than were removed by all Seattle-owned traditional structural stormwater treatment facilities constructed to date.

Comment #22: S5.C.6.a.ii - Clarification, p. 23

Seattle recommends that in Ecology’s Response to Comments, Ecology clarifies that floodplain reconnection projects are qualifying projects under S5.C.6.a.ii. Floodplain reconnection projects mitigate stormwater impacts by allowing flows to spread across the rough surface of the floodplain, which slows peak flow velocity, delays the peak flow to downstream channel segments, and reduces the erosive power of the flood flows. In addition to the flow reduction benefits of floodplains, floodplains also improve downstream water quality. Filtering of surface flows through floodplain vegetation is a natural water-quality enhancement process. In addition, subsurface or hyporheic flows provide stream temperature regulation and filter nutrients and pollutants.

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Comment #23: S5.C.7.a.iii – Permittee in Compliance, Page 25

Seattle requests that Ecology replace the deleted language: “*Permittees that are in compliance with the terms of this permit will not be held liable by Ecology for water quality standard violations or receiving water impacts caused by industries and other Permittees covered, or which should be covered, under an NPDES permit issued by Ecology.*” In some instances in Seattle, the Ecology-permitted industry’s discharge is to the MS3 owned or operated by the City of Seattle, and it is important to have this language remain in the permit because the City does not control an industry’s compliance with its Ecology-issued NPDES permit.

Comment #24: S5.C.7.b.ii(1) - Business Inventory for Source Control, Page 27

Seattle requests that Ecology deletes the word “annually” and insert the words “*periodically, and at least once during the permit term*” when describing the frequency of updates to the Permittee’s inventory of land uses and businesses for source control inspections. Periodically, and at least once during the permit term accurately reflects Seattle’s successful approach to inspection of pollution-generating businesses. Seattle uses the City’s business license database as a starting point to identify pollution-generating businesses. Then next step is to identify a geographic area and have an inspector verify which businesses from the list are potentially pollution-generating. Businesses observed as potentially pollution generating that do not appear on the inventory are added. The updated list serves as the basis for conducting inspections in that area. Although Seattle understands the need to establish a target number of inspections for Permit compliance, the requirement to annually update a business inventory list does not add value.

Comment #25: S5.C.7.b.iii(2) – 20% Inspection Requirement, Page 27

Seattle requests that Ecology delete the word “listed sites annually” from the requirement and add “*sites identified pursuant to S5.C.7.b.ii.*” This comment is provided in support of the previous comment which requests deletion of the requirement to annually update the list of sites to be inspected.

Comment #26: S5.C.7.b.iii(2) – 20% Inspection Requirement, Page 27

Seattle requests that Ecology delete the language that allows Permittees to count only “up to two” follow-up compliance inspections. Ecology should be encouraging follow-up inspections as part of a progressive enforcement policy. Seattle agrees that if a site does not need corrective actions, the number of visits that count toward Permit compliance should be limited. However, Ecology's revised language creates a disincentive to continue to work with businesses until they are in full compliance. Seattle also requests that Ecology add the following phrase to clarify the meaning of “compliance inspections”: “*(i.e., inspections conducted to assure previously-identified corrective actions are adopted)*”

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Comment #27: S5.C.7.b.v(2) – Staff Evaluation, Page 28

The City agrees that staff should be trained and evaluated, and in fact all City staff are engaged in the yearly setting of job expectations, which includes attendance at appropriate job related trainings, and all employees are evaluated in accordance with the City’s Performance Management Rule. However, Seattle requests that Ecology delete S5.C.7.b.v(2), requiring that Permittees conduct evaluations of staff involved in the Source Control program as it is an unnecessary requirement.

Comment #28: S5.C.7.b.v(3) – Records, Page 28

Seattle requests that Ecology delete the words “and evaluation results” from the requirement. This comment is provided in support of the previous comment which requests deletion of the requirement to conduct annual staff evaluation.

Comment #29: S5.C.8 – Illicit Connections and Illicit Discharges Detection and Elimination, Page 28

Seattle appreciates Ecology’s efforts to reorganize the IDDE requirements to provide additional flexibility in the IDDE screening requirements.

Comment #30: S5.C.8.b.i (13) – Emergency Fire Fighting Activities, Page 30

Seattle requests that Ecology delete the words “that occur during” and replace them with “*associated with*” when establishing that discharges during emergency fire fighting activities are allowable discharges into or from the MS4. Seattle understands that Ecology’s intent is to specify that the allowable discharge is only during the emergency. However, in some cases the discharges associated with the emergency may continue to dissipate after the fire is out, so some flexibility is needed.

Comment #31: S5.C.8.b.i –Utility Repairs Page 30

Seattle requests that Ecology add an additional allowable discharge to the list contained in S5.C.8.b.i. The new allowable discharge is for chlorinated water that is discharged into the Permittee’s MS3 due to a potable water line break or other emergency event when the discharge cannot be de-chlorinated due to the volume of water and nature of the discharge (e.g. broken pipe with sink hole in middle of the road). De-chlorination procedures per S8.C.8.b.ii (1) would be followed after the emergency if additional potable water were discharged from the pipe(s).

Comment #32: S5.C.8.b.ii (1) – Conditionally Allowable Discharges, Page 30

Seattle requests that when describing the planned discharge of chlorinated water that is allowable, Ecology specify that de-chlorination must be conducted to achieve a concentration of 0.1 ppm or less of “*total*” chlorine. Chlorine residual can be measured as free or total chlorine. Total chlorine measures any chloramines formed by the de-chlorination process and is thus more

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protective of aquatic resources. Most field meters can be set to read for either form (total or dissolved) of chlorine.

Comment #33: S5.C.8.c.i(1) – Conveyance Screening, Page 31

Seattle suggests that Ecology change the date in this section from “August 1, 2017” to *December 31, 2017* because the month of August is in the middle of the dry-weather screening period for 2017 and the permit reporting is based upon the calendar year.

Note that Ecology’s definition of “outfall” should not be changed; a consistent definition over time is key to implementing S5.C.8.c.i. (1) and (2) successfully.

Comment #34: S5.C.8.c.i(1) – Conveyance Screening, Page 31

Seattle suggests that Ecology change “Beginning August 1, 2017” in the second paragraph of this section to *Beginning January 1, 2018* because the month of August is in the middle of the dry-weather screening period for 2017 and the permit reporting is based upon the calendar year.

Comment #35: S5.C.8.c.i(1) – Conveyance Screening, Page 31

Seattle suggests that the 20% IDDE screening requirement be modified to no more than 12%. The 20% IDDE screening per year would create an increase in workload over current IDDE levels as the proposed level exceeds the level of effort in the 2007 permit (12% per year) and the level proposed for the 2013 to 2017 in the draft permit (10% per year). Seattle suggests that the 20% per year requirement starting in August 2017 be changed to no greater than 12% per year. Seattle assumes that Ecology has selected 20% as the level of effort because the entire MS4 will be screened (60% in 2007 permit and 40% from 2013 to 2017), which will result in most illicit connections being detected and eliminated, so screening in the future will be more expedient. To date, Seattle’s experience would not support an inference that more area could be screened in future years with existing resources.

Comment #36: S5.C.8.d.i – Procedures for Characterizing illicit discharges, Page 33

Seattle supports up-front planning for dealing with spills, problem discharges and illicit connections found during the implementation of a source control/IDDE program. Seattle proposes that Ecology issue guidance in advance of the effective date of the permit to assist Permittees with developing their procedure for characterizing illicit discharges.

Comment #37: S5.C.8.d.ii (1) – Threat to Human Health, Welfare, or the Environment, Page 34

Seattle suggests that Ecology delete the word “Immediately” and replace it with “*Upon becoming aware, immediately evaluate and promptly*” requirement to allow Permittees time to implement their illicit discharge/spill response program.

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Seattle requests that Ecology provide guidance on the types or examples of discharges/spills that would qualify as a threat to human health, welfare, or the environment. If Ecology requires the development of procedures for characterizing the threat posed by illicit discharges, then it is these criteria that should be used to determine if immediate response is required, not G3.

The numbering in the permit in this section is off and this should be sub-section iv rather than ii.

Comment #38: S5.C.9.a – Minimum Performance Measures, Page 35

Seattle requests that Ecology add the words “*for public and private stormwater facilities/BMPs*” so that the permit reads: “Each Permittee shall implement maintenance standards for public and private stormwater facilities/BMPs that are as protective...”

Comment #39: S5.C.9.a – Minimum Performance Measures, Page 35

Seattle requests that Ecology change the date the Permittees update their maintenance standards from “December 31, 2014” to “June 30, 2015” to be consistent with Seattle comments in S5.C.5.

Comment #40: S5.C.9.b.iv – Inspection of Stormwater Facilities during Construction, Page 37

Seattle suggests that Ecology keep the original language (“during the period of heaviest construction”) because given the current economic recession there are planned residential developments that have been idle for 2+ years in Seattle. It is an undue burden to inspect the BMPs/facilities every 6 months given that it may be years before 90% of the lots are constructed. The requirements in S5.C.5 and Appendix 1 required that these type of developments have temporary and permanent erosion and sediment control methods in place, and these BMPs should be sufficient to prevent excessive sediment from entering and damaging the stormwater treatment or flow control BMPs/facilities.

Comment #41: S5.C.9.c.i - Maintenance of Stormwater Facilities owned or operated by the Permittee, Page 37

Seattle requests that Ecology retain the language “(other than catch basins)” in this section as it makes it clear that catch basins owned or operated by the Permittee are not, by definition, stormwater facilities/BMPs. The maintenance requirements for catch basins owned or operated by the Permittee is defined in S5.C.9.d.

Comment #42: S5.C.9.c.ii - Spot Check Program, Page 38

Seattle requests that Ecology retain the language “(other than catch basins)” in this section as it makes it clear that catch basins owned or operated by the Permittee are not, by definition, stormwater facilities/BMPs. The maintenance requirements for catch basins owned or operated by the Permittee is defined in S5.C.9.d.

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Comment #43: S5.C.10.c.i – E&O for General Public, Page 42

Seattle supports the inclusion of school age children in the education and outreach requirements.

Comment #44: S5.C.10.d – Education and Outreach Evaluation, Page 43

Seattle requests that Ecology delete the word “new” from the Special Condition. There are one “new” audience and two “new” behaviors in this permit. It is not appropriate to limit the evaluation to only “new” subjects. In addition, evaluating existing programs or re evaluating a program has the potential to provide valuable information that can be used to adapt programs and target audiences in different ways. The permit language with the word “new” eliminates the ability for re-evaluation of existing programs.

S8. Monitoring

Comment #45: S8 – Monitoring, Summary Comments

Seattle appreciates Ecology’s and Stormwater Work Group’s (SWG) continuing efforts to develop an improved approach to permit-required monitoring.

- Seattle is supportive of the regional approach to monitoring developed by SWG and Ecology. Seattle is providing the following comments because it is important that Regional Stormwater Monitoring Program (RSMP) funds be well spent and work be effective at meeting regional goals for monitoring.
- Seattle continues to believe that although a regional approach is beneficial for some elements of permit-required monitoring, in some instances, program effectiveness can best be accomplished at the local level, and it is a regional benefit to provide this flexibility. In particular, Seattle supports Ecology’s inclusion of independent study options for program effectiveness monitoring.
- Seattle remains concerned about the equity of the cost allocation methodology and increased total NPDES permit-required monitoring costs for Seattle.
- Seattle recognizes that the success of the RSMP relies heavily on the work of the SWG and associated subgroups. It is important that Ecology and SWG develop well-defined roles and responsibilities for the successful implementation of the RSMP and that SWG subgroups have sufficient support to assist them in accomplishing their work.
- Seattle believes the list of effectiveness studies should be removed from the Permit as the list may change as the program moves forward. Seattle also continues to be concerned about the vagueness of the objectives and scope of the Source ID and Diagnostic Monitoring component. Seattle believes that the non-RSMP options for Status & Trends and Source ID & Diagnostic monitoring are not meaningful options to the region or to local jurisdictions.
- Seattle also believes that revisions are required to clarify that (1) Permittee S8 obligations for regional monitoring will be limited to the payment amounts stated in S8, without the

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possible obligation to pay any funding exceedances, and (2) it is Ecology’s responsibility to stay within RSMP fiscal resources and allocate funding to support not only data collection but other program costs as well. Seattle believes that Appendix 12 should not be included in the Permit.

Seattle’s comments and recommendations are discussed in more detail below and in tracked changes recommendations on S8, Appendix 9, and Appendix 12 in accompanying attachments.

Comment #46: S8 - Monitoring, Total Cost/Cost Allocation

Seattle continues to agree with Ecology’s recognition that NPDES-required monitoring is a component of a Permittee’s SWMP that must be balanced with other SWMP activities and other monitoring needs, especially during this challenging economic period. Ecology has consistently indicated that the RSMP “*is expected to reduce Phase I permittees’ overall expenditures on monitoring*” (preliminary draft Phase I permit Explanatory Notes, draft Phase I permit Fact Sheet). Unfortunately, this is not the case for Seattle as the proposed NPDES required monitoring is an increase over current NPDES required monitoring expenditures. It seems likely that Seattle is the only Phase I jurisdiction that will have increased NPDES-required monitoring costs in the next permit – most Phase I jurisdictions costs are being reduced. For 2010, Seattle spent approximately \$375,000 (labor and non-labor) on NPDES required monitoring. Total RSMP payments for Seattle indicated in draft permit (Option 1s) would be \$423,000/year, an increase of approximately \$50,000/year. This increase does not reflect the cost of Seattle staff time that will be needed to support the SWG and associated subgroups. While Seattle continues to support the SWG efforts, Seattle is concerned that it, and likely other jurisdictions, will have limited ability to dedicate its current amount of staff time, or more, to SWG and associated subgroups to help assure the success of the regional monitoring program. (See also SWG support comments, below). Monitoring cost increases, including staffing costs, place additional pressure on already escalating utility rates.

The two factors contributing to the increase in costs to Seattle are the total cost of the RSMP and the cost allocation methodology. Seattle continues to believe that a population-only cost-allocation is inappropriate for the following reasons:

- factors besides population (e.g., land area, land use) are significant contributors to stormwater impacts and management needs;
- all Permittees (Phase I and Phase II) should be required to contribute a minimum amount (i.e., a base amount) that reflects a minimum level of effort that would be required to conduct monitoring independently (without RSMP) to meet NPDES permit monitoring requirements;
- population-only cost-allocation is inconsistent with precedent established by previous Ecology cost-allocations related to NPDES funding, including:

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- the distribution of FY 2011 Capacity Grant funding included a fixed base allocation to Phase I and Phase II Permittees prior to distribution by population;
- the distribution of several rounds of Local Government Stormwater Grants Program was based on an equal amount for all Phase I jurisdictions and equal amount for all Phase II jurisdictions; and
- NPDES permit fees are an equal amount for all Phase I Permittees.

Seattle's preferred options for not increasing Seattle's NPDES permit-required monitoring costs are:

- Include a base amount for each monitoring component for all Permittees (refer to previous paragraph for additional information); and
- Remove the expectation stated in the permit fact sheet that independent effectiveness studies must cost at least as much as the amount the Permittee is not contributing to the RSMP (p. 68); this provision is not necessary to ensure a meaningful study (refer to Seattle's comment on Section S8.D.3 for additional information).

Additional options to reduce Seattle's NPDES permit-required monitoring costs include:

- Reduce total RSMP costs by decreasing the funding for Effectiveness Studies since the level of effort is adjustable;
- Reduce total RSMP costs by decreasing the funding for Source ID and Diagnostics since the program is not yet fully developed; and
- Reduce total RSMP costs by decreasing the funding for Status and Trends monitoring and reducing scope accordingly.

Comment #47: S8 - Monitoring, Exceedances of Funding

Given the uncertainty in both the cost estimates of the RSMP as currently proposed and the available funding for the RSMP from Permittees and non-Permittee sources, Ecology needs to identify a well-defined process and Ecology responsibilities for how to avoid potential exceedances of available funding and manage exceedances if they occur. Permittees' obligations are limited to payment of the funding payment amounts required in the permit (Fact Sheet, p. 63.) Therefore, Ecology's process should include clear responsibilities to ensure that its contracts with vendors are written and managed to avoid exceedances. Due to the nature of the organizational structure, Seattle believes that fiscal control and responsibility to stay within available resources belongs to Ecology as the administrator of the RSMP contracts. It would be unworkable for a committee to have this responsibility, and individual Permittees must be able to rely on permit-based payment amounts for defining their financial obligations. As a starting point, Seattle recommends removing Appendix 12 from the permit to clarify that Ecology, not the Permittees, has responsibility for the RSMP and to allow Ecology the flexibility to adjust the

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RSMP as needed to operate within available funding. If Ecology includes Appendix 12, Seattle has made recommended changes to the Funding Agreement and associated attachments to clarify Ecology's intent that potential funding exceedances will be managed by Ecology by either finding additional non-Permittee funding or reducing the scope of the RSMP.

Comment #48: S8 - Monitoring, SWG Support

Seattle recognizes that the success of the regional monitoring program relies heavily on the work of the SWG and other groups. It is important that Ecology, SWG, and associated SWG subgroups develop well defined roles and responsibilities for the successful implementation of the RSMP. It is also very important that SWG subgroups have sufficient support to assist them in their work, including staff or consultant resources to organize and plan meetings, provide draft materials or analyses for committee review and to follow up on the actions or assignments of the committees. Without this support, it will be difficult to ensure that members will be able to manage committees and their own organizational responsibilities over the long term, and it is reasonable to expect that the potential for this program will not be realized. It is very important that these groups have sufficient resources, especially now when studies are being planned and the program will be preparing for the implementation phase of regional monitoring. We already see difficulty in support for groups assigned to developing the Effectiveness Studies and Source ID & Diagnostic components of the RSMP. One recommendation to help ensure the success for the RSMP is for Ecology to provide or contract with a technical entity to coordinate each SWG technical subgroup to make the best use of volunteer SWG subgroup members' time. Technical support needs to be included as a programmatic expense and set aside in the allocation of available funding.

Comment #49: S8.C.1.a – Status and Trends Monitoring Option #1, payment clarification, Page 64

To clarify Permittee obligation and reflect removing Appendix 12 from the permit (refer to Seattle's comment on S8 above), Seattle recommends that this section be rewritten as follows:

“Status and Trends Monitoring Option #1: Pay to Ecology, on or before the dates specified in this Section S8.C, the amount specified below, which Ecology shall use into a collective fund and enter into an agreement with Ecology to implement the Puget Sound marine nearshore and small streams status and trends components of a RSMP. ~~Each agreement shall be substantially in the form of Appendix 12.~~ Ecology will administer the collective fund and implement the monitoring program in accordance with ~~the arrangements between Ecology and each Permittee.~~ The agreement will specify the tasks and deliverables of the RSMP. By timely making such payment to Ecology, the Permittee shall have satisfied the requirements of this section S8.C for the calendar year at issue.”

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If Appendix 12 remains in the permit (which Seattle does not recommend), Seattle recommends changing the reference to it in this section as follows: “Each *Permittee shall enter into a payment agreement with Ecology* ~~agreement shall be~~ substantially in the form of Appendix 12.”

Comment #50: S8.C.1.a.i – Status and Trends Monitoring Option #1, payment clarification, Page 64

Seattle recommends clarifying that payment is to Ecology by adding “*to Ecology*” after “Each Permittee shall pay.”

Comment #51: S8.D.1 – Effectiveness Studies Option #1, Page 65

Seattle recommends that the list of RSMP effectiveness studies should not be included in the permit to retain flexibility to make changes to the list. Attachment C should contain a description of how the studies were solicited, selected, questions developed and what happens if a topic cannot be studied or if studies are completed, how the next study is implemented. The list of studies should be public but not in the permit.

Comment #52: S8.D.1 – Effectiveness Studies Option #1, payment clarification, Page 65

To clarify Permittee obligation and reflect removing Appendix 12 from the permit (refer to Seattle’s comment on S8 above), Seattle recommends that this section be rewritten as follows:

“a. Pay to Ecology, on or before the dates specified in this Section S8.D.1, the amount specified below, which Ecology will use ~~into a collective fund and enter into an agreement with Ecology~~ to implement the effectiveness studies component of the RSMP. Each ~~agreement shall be~~ substantially in the form of Appendix 12. Ecology will administer the collective fund and implement the monitoring program in accordance with ~~The agreement will specify~~ the tasks and deliverables of the RSMP. By timely making such payment to Ecology, the Permittee shall have satisfied the requirements of this Section S8.D.1 for the calendar year at issue.”

If Appendix 12 remains in the permit (which Seattle does not recommend), Seattle recommends changing the reference to it in this section as follows: “Each *Permittee shall enter into a payment agreement with Ecology* ~~agreement shall be~~ substantially in the form of Appendix 12.”

Comment #53: S8.D.1a – Effectiveness Studies Option #1, payment clarification, Page 66

Seattle recommends clarifying that payment is to Ecology by adding “*to Ecology*” after “Each Permittee shall pay.”

Comment #54: S8.D.3 – Effectiveness Studies Option #3, Page 67

Seattle supports Ecology’s inclusion of an independent study option for effectiveness monitoring. Seattle continues to believe that a regional approach is beneficial for some elements of Permit-required monitoring but that, in some instances, program effectiveness monitoring

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would best be accomplished at the local level, and it is a regional benefit to provide this flexibility. The measure of a meaningful study is best determined by its value -- something that should be established through the study objectives and design rather than the study budget. Since Ecology would need to approve the proposal for any independent studies (S8.D.3.b.i), the quality and value of the study can be assured through this review. Seattle is uncomfortable with the statement in the fact sheet that states “*Permittees selecting this option are expected to invest and equivalent amount of funding into conducting the independent study*” (p. 68). Seattle requests that Ecology clarify in its Response to Comments document that studies are not expected to meet a specific cost threshold to meet permit obligations. S8.D.3.a – Effectiveness Studies Option #3, payment clarification, Page 67

To clarify Permittee obligation, Seattle recommends that this section be rewritten as follows

“a. Pay to Ecology, on or before the dates specified in this Section S8.D.3, the amount specified below, which Ecology will use to implement the effectiveness studies component of the RSMP. Ecology will administer the collective fund and implement the monitoring program in accordance with the tasks and deliverables of the RSMP. By timely making such payment to Ecology, the Permittee shall have satisfied the requirements of this Section S8.D.3.a for the calendar year at issue prescribed in this section, according to the following schedule.”

Comment #55: S8.E.1 – Source Identification and Diagnostic Monitoring Information Repository Option #1, Page 68

Seattle supports Ecology and SWG in setting aside funding to develop and share best practices for detecting common pollution sources and developing a framework to identify the pollutants of concern for local and regional source control efforts. Unfortunately, the scope of work provided in Appendix 12 and description of the Source Identification and Diagnostic Monitoring in the fact sheet do not meet these objectives. Based on Seattle participation in the SWG subgroup and additional brainstorming, Seattle recommends the following as a starting point for the RSMP Source Identification and Diagnostic Monitoring scope of work:

4. Source Identification and Diagnostic Monitoring Information Repository
 1. Create a manual of “best practices” for source control based upon local experience and other sources. This could include:
 - a. Summary of methods for conducting various source control activities (e.g. smoke testing, bacterial investigations, dry weather screening) including the following information for each method:
 - Description
 - Case study(s)
 - how to determine DQOs, including specific case applications

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- SOPs
 - example QAPPs and
 - report templates;
 - b. Summary of ranges of chemical parameters found in different regions of Western Washington; and
 - c. Procedures for characterizing the nature of, and potential for, public or environmental threat posed by illicit discharges, including when immediate containment is appropriate.
2. Develop an information repository to evaluate current source identification programs and enable Permittees to share information. This repository could be web-based or a SharePoint format to encourage interaction. Webinars could also be sponsored on topics of regional interest.
3. Develop a framework to identify the pollutants of concern for local and regional source control efforts. The framework could include elements such as:
- Identifying the key questions the region needs to answer about each pollutant or pollutant class;
 - Identifying the type of information and data that should be collected over time for each pollutant or pollutant class;
 - Recommending standard methods and formats to be used for tracking and sharing this information and data; and
 - Identifying management or treatment practices that have been used or hold promise in managing the pollutant or pollutant class.

Comment #56: S8.E.1 – Source Identification and Diagnostic Monitoring Information Repository Option #1, payment clarification, Page 68

To clarify Permittee obligation and reflect removing Appendix 12 from the permit (refer to Seattle’s comment on S8 above), Seattle recommends that this section be rewritten as follows:

“1. Source Identification and Diagnostic Monitoring Information Repository Option #1: Pay to Ecology, on or before the dates specified in this Section S8.E, the amount specified below, which Ecology will use to implement the source identification and diagnostic monitoring information repository component of the RSMP. ~~Each agreement shall be substantially in the form of Appendix 12.~~ Ecology will administer the collective fund and implement the monitoring program in accordance with the tasks and deliverables of the RSMP. By timely making such payment to Ecology, the Permittee shall have satisfied the requirements of this Section S8.E for the calendar year at issue.”

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If Appendix 12 remains in the permit (which Seattle does not recommend), Seattle recommends changing the reference to it in this section as follows: “Each *Permittee shall enter into a payment agreement with Ecology* ~~agreement shall~~ be substantially in the form of Appendix 12.”

**Comment #57: S8.E.1.a – Source Identification and Diagnostic Monitoring Information
Repository Option #1, payment clarification, Page 68**

Seattle recommends clarifying that payment is to Ecology by adding “*to Ecology*” after “Each Permittee shall pay.”

**Comment #58: S8.E.2 – Source Identification and Diagnostic Monitoring Information
Repository Option #2, Page 69**

The objectives and purpose of collecting this information are not clear from the draft permit or associated fact sheet. However, in working toward a common reporting format, Seattle can provide an example format for Ecology consideration for “a format provided by Ecology” (S8.E.2.a). Seattle can provide an example of GIS-based IDDE reporting fields as well as an example of the export of the fields into an Excel workbook that could be used by jurisdictions that may not want to use GIS for source tracking data.

DEFINITIONS AND ACRONYMS

Comment #59: Definitions, Common Plan of Development or Sale, Page 81

The fact sheet for the draft MS4 Phase I permit explains that the definition of “Common Plan of Development or Sale” was added “for consistency with the definition in the Construction Stormwater General Permit and to make it consistent across municipal stormwater permits.” Seattle understands that it was added to address the one-acre threshold change for Phase II Permittees, but that is no longer a factor in today’s MS4 permits. The definition is within Ecology’s discretion, as it is not defined in the CWA or stormwater rules.

Ecology and Seattle want projects to implement stormwater requirements (including LID) if development exceeds specified thresholds. It is important that piecemealing be avoided where segments of what is really one large project are treated individually to avoid Stormwater Code requirements, but the language Ecology proposes to do this includes inconsistencies with SEPA rules on piecemealing. Seattle’s proposed language addresses Ecology’s intent, but is consistent with state law and SEPA.

In addition, for clarity, the definition should not contain a requirement; instead, requirements should be included in Appendix 1, Section 3.1 (see comment addressing this).

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Therefore, Seattle suggests that Ecology remove the proposed definition in the permit and replace it with this definition: “Common Plan of Development or Sale” means project proposals or parts of proposals that are related to each other closely enough to be, in effect, a single course of action. Project proposals or parts of proposals meet this standard if they: cannot or will not proceed unless the other proposals (or parts of proposals) are implemented simultaneously with them; or are interdependent parts of a larger proposal and depend on the larger proposal as their justification or for their implementation. The intent of this definition is to apply the anti-piecemealing or anti-segmentation rule imposed by SEPA. See WAC 197-11-060(3)(b).”

Comment #60: Definition of Co-Permittee, Page 82

Seattle suggests bringing the definition closer to the federal regulations by reinserting "*municipal separate storm sewer*," using "*MS3*" instead of "*MS4*," and deleting the following sentence: "A Co-Permittee is an owner or operator of a regulated MS4 located within or in proximity to another regulated MS4." Deleting the sentence clarifies that not every owner or operator of an MS3 "in proximity to" another is a Co-Permittee, and that no Permittee becomes a Co-Permittee without being party to a "cooperative agreement" with another applicant for coverage under the permit. Seattle's revisions also illustrate the difference between MS3 and MS4: Co-Permittees applying together may be owners or operators of different MS3s in the same regulated Phase I system (MS4), but they do not own or operate the same Phase I MS4, which the federal regulations define as all the MS3s located in the geographical area of a Phase I city or county.

Comment #61: Definition of Heavy equipment maintenance or storage yard, Page 83

Seattle suggests retaining the language “on a long term basis” in the definition. This is an established Phase I language and can be used for Phase II as well. The words “on a long term basis” clarify, reasonably, that a short-term project site is not included in the definition.

Comment #62: Definition of Illicit Discharge, Page 83

Seattle requests that Ecology delete the added language “in” and “or from” from the definition of an illicit discharge and retain the language in the 2007 Permit, “*means any discharge to a municipal separate storm sewer...*”. The permit does not refer to illicit discharges “from” the municipal separate storm sewer. It requires Permittees to prohibit and respond to illicit discharges *to* or *into* the municipal separate storm sewer owned or operated by the Permittee in Special Conditions S5.C.1, S5.C.8, S6.E.3. The word “from” is not used in the permit in the context of illicit discharges, and it should be deleted from the definition so that the meaning of existing requirements is not changed.

Comment #63: Definition of Illicit Discharge, Page 83

Seattle requests that Ecology delete the added language “and infiltration/exfiltration of non-stormwater that takes place in pipe bedding” from the definition of an illicit discharge.

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Infiltration of groundwater into the MS3 and exfiltration of stormwater out of an MS3 occur due to a variety of reasons including the age of the pipe material, subsidence that offsets joints and intrusion of roots to name a few. Infiltration and exfiltration do not fit the meaning of illicit discharge as used in the permit; they are not discharged to the MS3 on purpose by a person or action of a person, or by a specific accidental event like a spill, and do not constitute a “discharge” as typically used in the permit. Therefore, this part of the definition should be deleted.

Comment #64: Definitions of Low Impact Development, Page 84

Definition changed to match Appendix 1, Fact Sheet, and SMMWW: ““Low Impact Development” (LID) means a stormwater and land use management strategy that strives to mimic pre-development *disturbance* hydrologic processes of infiltration, filtration, storage, evaporation and transpiration by emphasizing conservation, use of on-site natural features, site planning, and distributed stormwater management practices that are integrated into a project design.”

Comment #65: Definition of the Municipal Separate Storm Sewer, Page 85

Seattle requests that Ecology retain the definition of a Municipal Separate Storm Sewer (MS3) in the permit, as the term is defined in the 2007 permit. In the fact sheet, Ecology states that the term MS3 has been deleted because it is not used in the permit or does not add helpful information. However, “municipal separate storm sewer” is a key term directly from 40 CFR 122.26 (b) (8), is fundamental to this permit, and is used throughout the permit. MS3s are the building blocks of an MS4, whether a small, medium or large MS4. Ecology has substituted the term “municipal separate storm sewer system” “(MS4)” in the place of MS3; however both terms are needed. MS4 is not a usable substitute for MS3 because, for Phase I, MS4 includes all MS3s in a geographical area, whether or not they are owned or operated by the Permittee. For clarity, and precision, the term MS3 must be used. Revisions suggested by Seattle throughout the permit reflect this need. Note that the 2007 permit and federal regulation both properly refer to “waters of the United States.”

Comment #66: Definition of the Municipal Separate Storm Sewer System, Page 85

Seattle requests that Ecology keep the deleted definition of an MS4 because it is the definition of an MS4 in 40 CFR 122.26 (b)(7) and provides continuity with the current Phase I permit. The text that Ecology proposed is (largely) the definition of a MS3 in 40 CFR 122.26 (b)(8) and should be removed from the definition.

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Comment #67: Definition of an Outfall, Page 86

Seattle suggests that Ecology remove the added language and retain the established definition of “outfall”. “Outfall” is a federal regulatory term specific to NPDES discharges to surface water, regulated under the Clean Water Act. Further adjusting the EPA definition will create confusion in permit interpretation and, potentially, could be read to create multiple outfalls within an MS3 (never previously the case), with no clear understanding of the point of compliance. This is exactly what EPA intended to avoid with its definition specific to municipal separate storm sewers, which states that an outfall does not include open conveyances connecting MS3s. A discharge to ground water regulated only by the state is not an “outfall” under the Clean Water Act, and mentioning ground water would create added confusion about point of compliance.

Comment #68: Definition of Significant Contributor, Page 86

Seattle suggests that Ecology delete this term as it is not used in this permit.

Comment #69: Definition of Stormwater Facilities Regulated by the Permittee, Page 87

Seattle suggests that Ecology delete the words “*and catch basins*” as it is inconsistent with the definition of stormwater treatment and flow control BMPs/facilities in the Draft 2013-2018 permit.

Comment #70: Definition of Stormwater Management Manual for Western Washington, Page, 87

Seattle suggests that the SMMWW's 2012 version be referenced solely and consistently throughout in the permit and appendices, as Ecology intends the 2012 version to be the basis for permit obligations, rather than any earlier version.

Comment #71: Definition of SWMP, Page 87

Seattle suggests that Ecology delete the following text from the definition: “additional actions necessary to meet the requirements of this Permit.” Seattle suggests that Ecology add the following text to the definition: “*any applicable actions required by S7 (TMDL) and Appendix 2, activities required by S8 (monitoring) and activities required to meet S4.F obligations.*” The definition will read:

Stormwater Management Program (SWMP) means a set of actions and activities designed to reduce the discharge of pollutants from the ~~MS4~~ *MS3s owned or operated by the Permittee* to the maximum extent practicable and to protect water quality, and comprising the components listed in S5 or S6 of this Permit *and any applicable actions required by S7 (TMDL) and Appendix 2, activities required by S8 (monitoring), and activities required to meet S4.F obligations.* ~~additional actions necessary to meet the requirements of this Permit.~~

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This definition includes items listed in the Fact Sheet, p. 28, and provides greater certainty about the scope of each Permittee’s obligations, to assist with planning, implementing, budgeting, and compliance.

APPENDIX 1 – Minimum Technical Requirements for New Development and Redevelopment

Note: Seattle’s comments and edits associated with Appendix 1 apply equally to applicable sections of the SMMWW.

Comment #72: Definition of Bioretention BMPs, Page 2

Bioretention systems have historically been used more for flow control than for treatment. The proposed definition implies that they are only used for treatment.

Therefore Seattle requests the following change to the definition:

“Bioretention BMPs – Engineered facilities that retain or store and treat stormwater to attenuate or reduce pollutant loading by passing it through a specified soil profile....”

Comment #73: Definition of Effective Impervious Surface, Page 3

The original 2007 permit language included “on residential development” in this definition, but the draft permit language omitted this phrase. Seattle agrees that this phrase should be deleted, but it is not clear if this deletion was intentional in the draft permit language since the strike-through was omitted.

Comment #74: Definition of Hard Surface, Page 3

Request change of “green” to “vegetated” to match language in the remainder of Appendix 1 and SMMWW: “Hard Surface – An impervious surface, a permeable pavement, or a vegetated ~~green~~ roof.”

Comment #75: Definition of Receiving Waters, Page 5

Request removal of ground water from receiving waters definition: “Bodies of water or surface water systems to which surface runoff is discharged via a point source of stormwater or via sheet flow. ~~Ground water to which surface runoff is directed by infiltration.~~”

Receiving waters have meaning within the federal Clean Water Act, NPDES permitting, and case law that is separate and distinct from state-only permitting of state waste discharges to ground water. Ground water is a water of the state and is thus already protected without making this change. For this and all other instances in the permit, definitions need to be the same as those in the CWA and NPDES regulations to allow consistent interpretation where federal law applies and clarity in use of terms.

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Comment #76: Section 3.1 – Thresholds, Page 8

Request change as referencing definition is unnecessary and to clarify intent of requirement:
“Use the thresholds in sections 3.2 and 3.3 at the time of application for a subdivision, plat or a short plat. ~~The thresholds apply to a common plan of development or sale as defined in the definitions and acronyms section of this permit.~~ *If the project is part of a common plan of development or sale, the thresholds apply to the disturbed area of the entire plan....”*

Comment #77: Figure 3.2 Flow Chart for Determining Requirements for New Development, Page 9

Seattle agrees that when “the existing land cover is converted to pasture or lawn/landscaping categories,” the type of vegetation (native vs. non-native) is insignificant to the effect on stormwater runoff. But, for clarity and to provide parameters that are described in SMMWW, Seattle requests the addition of forest and/or pasture in place of where “native” previously was used, as applicable:

“Does the project convert $\frac{3}{4}$ acres or more of ~~native~~ *forest or pasture* vegetation to lawn or landscaped areas, or convert 2.5 acres or more of ~~native~~ *forest* vegetation to pasture?”

Comment #78: Figure 3.3 Flow Chart for Determining Requirements for Redevelopment, Page 10

Seattle agrees that when “the existing land cover is converted to pasture or lawn/landscaping categories,” the type of vegetation (native vs. non-native) is insignificant to the effect on stormwater runoff. But, for clarity and to provide parameters that are described in SMMWW, Seattle requests the addition of forest and/or pasture in place of where “native” previously was used, as applicable:

“Convert $\frac{3}{4}$ acres or more of ~~native~~ *forest or pasture* vegetation to lawn or landscaped areas?
OR
Convert 2.5 acres or more of ~~native~~ *forest* vegetation to pasture?”

Comment #79: Section 3.2 – New Development, Page 11

Seattle agrees that when “the existing land cover is converted to pasture or lawn/landscaping categories,” the type of vegetation (native vs. non-native) is insignificant to the effect on stormwater runoff. But, for clarity and to provide parameters that are described in SMMWW, Seattle requests the addition of forest and/or pasture in place of where “native” previously was used, as applicable:

“Convert $\frac{3}{4}$ acres, or more, of ~~native~~ *forest or pasture* vegetation to lawn or landscaped areas, or
Convert 2.5 acres, or more, of ~~native~~ *forest* vegetation to pasture.”

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Comment #80: Section 3.3 – Redevelopment, Page 11

Seattle agrees that when “the existing land cover is converted to pasture or lawn/landscaping categories,” the type of vegetation (native vs. non-native) is insignificant to the effect on stormwater runoff. But, for clarity and to provide parameters that are described in SMMWW, Seattle requests the addition of forest and/or pasture in place of where “native” previously was used, as applicable:

“Convert ¾ acres, or more, of ~~native~~ *forest or pasture* vegetation to lawn or landscaped areas, or Convert 2.5 acres, or more, of ~~native~~ *forest* vegetation to pasture.”

Comment #81: Section 4.1 – Minimum Requirement #1: Preparation of Stormwater Site Plans, Page 13

There are local codes and policies other than the Stormwater Code that relate to allowed/desired development and address environmental goals related to promoting density in urban areas. Seattle’s addition to the draft language clarifies that MR #1 should not fundamentally change what uses and development types are allowed by a given zoning designation; if not clarified, MR #1 could conflict with GMA requirements to establish Comprehensive Plan growth targets and provide capacity to meet those targets through zoning regulations. As noted in Appendix 1, Seattle’s suggested addition does not relieve the Permittee of the requirement in S5.C.5 to review local development-related codes, standards, and rules to remove barriers and require use of LID principles and BMPs in local codes.

Requested change to draft language addresses Seattle’s concern:

“The Permittee shall require a Stormwater Site Plan from all projects meeting the thresholds in Section 3.1 of this Appendix. Stormwater Site Plans shall use site-appropriate development principles to retain native vegetation and minimize impervious surfaces to the extent feasible *without limiting the specific uses or reducing floor area otherwise allowed by zoning and development standards*. Stormwater Site Plans shall be prepared in accordance with Chapter 3 of Volume 1 of the Stormwater Management Manual for Western Washington (2012).”

Comment #82: Section 4.2 – Minimum Requirement #2: Construction Stormwater Pollution Prevention Plan (SWPPP), #10 – Control De-Watering, Page 20

The language proposed appears to imply that de-watering discharge must be discharged to systems tributary to surface waters with only consideration of the effect to receiving waters and without consideration to the affect of the operation of the system. Therefore, Seattle requests the following change:

“b. Discharge clean, non-turbid de-watering water, such as well-point ground water, to systems (*with owner/operator approval*) tributary, to, or directly into surface waters of the state, as specified in Element #8, provided the de-watering flow does not cause erosion or flooding of receiving waters *or interfere with the operation of the system*.

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Comment #83: Section 4.2 – Minimum Requirement #2: Construction Stormwater Pollution Prevention Plan (SWPPP), #12 – Manage the Project, Page 21

For smaller sites, it is not reasonable to list the inspector on the SWPPP as the inspector will not likely be known during plan preparation; therefore the following change is requested:

“Projects that disturb one or more acres must have site inspections conducted by a Certified Erosion and Sediment Control Lead (CESCL). Sites less than one acre may have a person without CESCL certification conduct inspections. *For sites that disturb one or more acres, The SWPPP must identify the CESCL, The CESCL or inspector who must be present on-site or on-call at all times. The CESCL or inspector (sites less than on acre) must have the skills to assess the:...*”

Comment #84: Section 4.5 - Minimum Requirement #5: On-site Stormwater Management, Page 23

Seattle strongly supports the majority of the draft language associated with Minimum Requirement #5: On-site Stormwater Management. Seattle has proposed minor changes to this section but also requests that sidewalks, trails, and bike lanes (non-pollution generating impervious surfaces (NPGIS)) in the public right-of-way or public place be exempt from implementing LID in non-flow control basins (direct or indirect discharges to large receiving bodies).

By connecting mass transit systems, increasing ridership and providing more non-vehicular modes of transportation, alternative transportation projects prevent potential pollution from numerous vehicles on roads and thus prevent stormwater pollution. Thus, more affordable alternative transportation projects will reduce pollutants reaching waterways. These types of projects in non-flow control basins would be required to evaluate and install LID, adding significant incremental cost to planning, design and construction, while contributing little to the reduction in stormwater impacts. This increased cost directly results in the installation of less alternative transportation infrastructure aimed at reducing pollution associated with automobile use, a.k.a. “car habitat”. Overall benefits will likely be greater if all transportation projects are more affordable.

Therefore, Seattle requests the following change to Minimum Requirement #5:

“The Permittee must require On-site Stormwater Management BMPs in accordance with the following project thresholds, standards, and lists to infiltrate, disperse, and retain stormwater runoff onsite to the extent feasible without causing flooding or erosion impacts *unless that portion of the project is a sidewalk, trail, or bike lane in the right-of-way or in a public place that discharges directly to, or indirectly through an MS4 to a water listed in Appendix I-E of the SMMWW and is not subject to the restrictions outlined in Section 4.7 – Applicability.*”

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Comment #85: Section 4.5 - Minimum Requirement #5: On-site Stormwater Management, Mandatory List #1, Page 24

Seattle agrees that smaller projects should be allowed to use a less engineered approach (rain gardens versus bioretention cells) to meet Mandatory List #1. However, the “Rain Garden Handbook for Western Washington” should not be considered a regulatory document as it does not include minimum area sizing nor has there been a public review process associated with the handbook. The design, sizing, and construction requirements for rain gardens should be incorporated either in the Permit or in the SMMWW.

Comment #86: Section 4.5 - Minimum Requirement #5: On-site Stormwater Management, Mandatory Lists #1 & #2, Pages 24 & 25

For all of the BMPs listed in Mandatory Lists #1 & #2, references to the SMMWW chapters and volumes should be included. As an example, from Mandatory List #1, Item 2: “Downspout Infiltration Systems in accordance with Section 3.1.1 *in Chapter 3 of Volume III* of the SMMWW”

Comment #87: Section 4.5 - Minimum Requirement #5: On-site Stormwater Management, Mandatory Lists #1 & #2, Pages 24 & 25

Due to the quantifiable stormwater benefits of trees, Seattle suggests that tree planting be a requirement of both Mandatory Lists #1 & #2.

“Lawn and landscape areas:

- *Post-Construction Soil Quality and Depth in accordance with BMP T5.13 in Chapter 5 of Volume V, of the Stormwater Management Manual for Western Washington (SMWW²) at all projects.*
- *Provide a minimum of one tree for every 1,000 sf of lawn and landscape area. Trees shall be planted in accordance with Section 7.7.3 of Appendix III-C of Volume III.”*

Comment #88: Section 4.5 - Minimum Requirement #5: On-site Stormwater Management, Mandatory Lists #1 & #2, Pages 24 & 25

Depending on project specifics, maintenance capabilities, funding, programming requirements and other factors, an applicant should have the choice to use either permeable pavement or rain gardens/bioretention cells, whichever is considered feasible. Rain gardens and bioretention cells pose fewer maintenance challenges than permeable pavement and might prove to be more reliable in performance over the long term. In addition, maintenance of permeable pavement requires the use of expensive equipment that is not typically available to the average resident or small business. Therefore, Seattle requests the following change to allow applicants flexibility in choosing between permeable pavement and rain garden/ bioretention BMPs:

“Mandatory List #1

2. Applicant must choose one that is considered feasible:

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- a. Permeable pavement¹ in accordance with design criteria in Appendix III-C of the SMMWW, or
- b. Rain Gardens in accordance with design procedures in the “Rain Garden Handbook for Western Washington””

“Mandatory List #2

2. Applicant must choose one that is considered feasible:

- a. Permeable pavement¹ in accordance with design criteria in Appendix III-C of the SMMWW, or
- b. Bioretention BMP’s (See Chapter 7, Volume V of the SMMWW) that have a minimum horizontally projected surface area below the overflow which is at least 5% of the ~~of the~~ total surface area draining to it. If the short-term native soil infiltration rate is less than 0.3 in/hr, do not use this option unless the hard surface is classified as pollution-generating.”

Comment #89: Section 4.6 - Minimum Requirement #6: Runoff Treatment, Page 26

For clarity, Seattle suggests the following change:

“3. Bioretention BMP’s (See Chapter 7 of Volume V of the SMMWW) that have a minimum horizontally projected surface area below the overflow which is at least 5% of the total surface area draining to it. If the short-term native soil infiltration rate does not meet the feasibility criteria in Section 8 ~~is less than 0.3 in/hr~~, do not use this option unless the roof is classified as pollution-generating impervious surface, in which case this BMP shall be used with an underdrain.”

Comment #90: Section 4.6 - Minimum Requirement #6: Runoff Treatment, Page 28

Infiltration below pavement should not be exclusive to permeable:

“5. For a commercial building, a vegetated roof or an impervious roof with runoff routed below ~~permeable~~ pavement. If the latter option is not used, a cost analysis is necessary to claim infeasibility of a vegetated roof.”

Comment #91: Section 4.6 - Minimum Requirement #6: Runoff Treatment, Page 26

For clarity, Seattle suggests the following change:

“Projects in which the total of *new plus replaced* pollution-generating impervious hard surface (PGIS) is 5,000 square feet or more in a threshold discharge area of the project, or...”

Comment #92: Section 4.6 - Minimum Requirement #6: Runoff Treatment, Page 28

Consider requiring continuous modeling for treatment facility sizing.

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Comment #93: Section 6 - Exceptions/Variances, Page 34

Seattle supports evaluating how development requirements would apply in situations where the requirements would create a severe economic hardship. However, requiring that an economic hardship also be “unexpected” as a threshold for granting an exception raises potential conflicts with private property rights and adds unnecessary complexity to decisions about whether to grant the exception.

Seattle requests deleting the word “unexpected” so that exception/variances can be considered for severe financial hardship.

Comment #94: Section 8.I.A & B Feasibility Criteria, Site/Engineering-based Conditions, Page 36

Seattle strongly supports the feasibility language that has been added to Section 8.I.A & B of the Appendix 1 in the permit. These changes protect sensitive areas by disallowing the requirement for LID where infiltration could damage human health and the environment.

For clarity and consistency with other BMPs listed in the SMMWW, Ecology should consider including all feasibility criteria for BMPS in respective volumes (e.g. Volumes III & V) of the SMMWW and not in the Permit or an Appendix to Volume I of the SMMWW.

Comment #95: Section 8.I.A & B Feasibility Criteria, Site/Engineering-based Conditions - Bioretention BMPs and Rain Gardens, Page 36

Placing bioretention on slopes greater than 8% requires an unreasonable number of weirs to get functional performance, therefore Seattle requests the following change:

~~“Where the site cannot be reasonably designed to locate bioretention facilities on slopes less than 15%, or if bioretention is within the road right of way and the right of way cannot be feasibly designed to locate bioretention facilities on slopes less than 8%.”~~

Comment #96: Section 8.I.A & B Feasibility Criteria, Site/Engineering-based Conditions, Page 37 & 39

Seattle supports setting the threshold for bioretention, rain garden, and permeable pavement infeasibility at an initial native soil hydraulic conductivity infiltration rate of less than 0.3 in/hr. The ability of native soils to effectively infiltrate is a primary predictor of bioretention and permeable pavement function. If infiltration is mandated on sites where SHC rates are questionable to the project success, there is a high risk of failure, which will result in push back by the development community on LID use globally. Seattle Ballard Roadside Rain Garden Pilot Project experience was a high visibility example where SHC rates were pushed to this boundary and failed to meet the specified drawdown time. Three of the project blocks had initial native soils SHC in the 0.2 in/hr to 0.3 in/hr range. The construction on those sites resulted in bioretention cells that remained full of water all winter, even after numerous days of no rain. To

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empty the cells required a vactor truck. To get a complete picture of project performance requires a full evaluation of the groundwater regime, potential mounding during the wet season prior to construction, and careful predictions of mounding due to additional infiltrated water. These analyses should be requirements when working in slow draining soils so that LID projects are successful. Because these analyses require time and money, we should focus on areas where initial rates are above the 0.3 in/hr range. Comments above reflect Seattle’s experience and our recommendation for how to incorporate the lessons learned.

Page 37:

“Where the field testing indicates potential bioretention/rain garden sites have a short term (a.k.a., initial) native soil saturated hydraulic conductivity less than 0.30 inches per hour or where the geotechnical evaluation specified in the 2012 SMMWW recommends infiltration not be used due to reasonable concerns that the surface pool drawdown time of 24 hours cannot be achieved at all times. In these instances bioretention/rain gardens serving pollutant-generating surfaces can be built with an underdrain, preferably elevated within the underlying gravel layer, unless other feasibility restrictions apply.

Page 39:

“Where appropriate field testing indicates soils have a short-term (a.k.a., initial) native soil saturated hydraulic conductivity less than 0.3 inches per hour or where the geotechnical evaluation specified in the 2012 SMMWW recommends infiltration not be used due to reasonable concerns that the surface pool drawdown time of 24 hours cannot be achieved at all times. In these instances, roads and parking lots can be built with an underdrain, preferably elevated within the base course, unless other feasibility restrictions apply.:

Comment #97: Section 8.I.B Feasibility Criteria/Engineering-based Conditions – Permeable Pavement, Page 37

Do to lack of experience and testing of the technology, Seattle has strong reservations about including ‘impervious pavements that would employ stormwater collection and redistribution below the pavement’ for PGIS runoff due to concerns about (1) long term functioning of the infiltration bed, (2) the integrity of, and damage to, adjoining pavement sections and properties not designed for infiltration, and (3) the effect on existing public and private utilities when stormwater is introduced beneath streets in the public right-of-way. Seattle realizes that infiltration of PGIS runoff below pavements has not been proposed by Ecology, but believes that using this practice for PGIS should not be required.

Comment #98: Section II.A Competing Needs, Page 39

Local governments and development applicants have no choice but to comply with all federal and state laws, rules, and mandatory standards. It is not practical or necessary to list all legal

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requirements - leaving Permittees at risk of a Clean Water Act permit violation if one is left off the list.

Additionally, Seattle continues to support preserving historic buildings as retention of older buildings is an effective tool for responsible, sustainable stewardship of natural resources. Seattle supports the allowance of superseding or reducing On-site Stormwater Management requirements when they are in conflict with any federal or state law, rule or mandatory standard including Historic Preservation Laws.

Therefore, Seattle requests the following change:

“A. Requirements of ~~any the following~~ federal or state laws, rules, ~~and or mandatory~~ standards: ~~Historic Preservation Laws and Archaeology Laws as listed at <http://www.dahp.wa.gov/learn-and-research/preservation-laws>, federal Superfund or state Model Toxic Control Act, Federal Aviation Administration requirements for airports, Americans with Disabilities Act.”~~

Comment #99: Section II.B Competing Needs, Page 39

Seattle appreciates the allowance to tailor On-site Stormwater Management (LID) requirements to account for density in urban areas and account for the requirement to meet GMA goals. This provision is helpful for defining competing needs in urban areas, but the language about “special zoning district design criteria” is unclear. “Development regulations” is defined within GMA to include both zoning regulations and development standards. The revised language requested here would cover provisions that have been adopted for historic districts, urban villages and centers, and major institutions.

Seattle feels that it is not necessary for Ecology to reference “community plan process” here, since all development regulations must be adopted through a public process under GMA. But if Ecology wants to include this concept, the language in brackets would be clearer than the proposed language; “community planning process” implies a particular kind of public process that is not inclusive of the various kinds of public input that inform development regulations.

Finally, “development-related” is added and “design” is deleted in second sentence for consistency with language proposed in S5.C5.

Seattle requests the following change:

“B. Where an LID requirement has been found to be in conflict with ~~special zoning district design criteria~~ development regulations for design standards [adopted pursuant to a public process] ~~adopted and being implemented pursuant to a community planning process~~, the existing local codes may supersede or reduce the LID requirement. This does not relieve the Permittees of the requirement in S5.C-5 to review local development-related ~~design~~ codes, standards, and rules to remove barriers and require use of LID principles and BMP’s.”

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Comment #100: Section II.D Competing Needs, Page 39

Seattle supports the added language as it recognizes that there are multiple needs associated with public rights-of-way. Transportation regulations are implemented through the development of plans with public involvement. Adopted transportation plans form the basis for right-of-way policy and project development and need to be recognized along with regulations as follows:

“D. Transportation regulations or adopted transportation plans, to maintain, expand, or implement the options for ~~future expansion~~ or multi-modal use or expansion of public rights-of-way.”

APPENDIX 6 – Street Waste Disposal

Comment #101: Appendix 6 - Street Waste Solids, Page 2 of 2

Appendix 6 contains new language that reads: “*Contaminated soils are considered solid waste and are regulated by local health departments/districts and laws/regulations governing the disposal of solid waste and hazardous waste.*” This statement is confusing, and it is not clear why Ecology included this statement in the Appendix. Seattle requests that the statement be removed because if retained in the permit it implies that street waste solids are always considered to be contaminated soils, which is not the case.

APPENDIX 9 – Stormwater Discharge Monitoring

Comment #102: Appendix 9 – Monitoring Frequency, Page 2

Recommend deleting requirement that “*Additionally, the Permittee shall analyze up to a maximum of three (3) samples that are collected as a result of attempts to sample the eleven (11) qualifying storm events and do not meet the rainfall volume storm event criterion but do meet the other storm event and sample criteria. The maximum number of sampled storm events to be analyzed is fourteen (14) per year.*” These sentences should be deleted because it has been a source of confusion, as this data is not comparable to other data collected. If this requirement is not deleted, clarification should be provided as to whether these additional three events are to be used for loading calculations or treated separately. For example, if the event rainfall is only 0.09”, does Ecology want this data to be used?

Comment #103: Appendix 9 – Qualifying Storm Event Criteria, Page 2

Recommend changing minimum rainfall criteria to 0.15” (from 0.20”) and the antecedent dry period criteria to 0.06” (from 0.02”). These recommendations are meant to be more realistic and to reflect Seattle’s experience during the current permit cycle. Based on Seattle’s best efforts, Seattle was not able to meet criteria in WY2010 for the two dry season events and barely met the criteria for the two dry season events for WY 2011. Seattle assumes other Permittees had similar challenges.

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Comment #104: Appendix 9 – Types of Sampling, Page 3

Recommend clarifying criteria by replacing “*must consist of*” with “*should be targeted to contain*” to prevent confusion with next sentence which allows for “7 to 9 aliquots.”

Comment #105: Appendix 9 – Types of Sampling, Page 3

Recommend clarifying confusing existing criteria that required needing only one year of flow day, but needing flow data for all sampled events. Recommended change: Replace “*of all storm events (not just sampled storm events) is necessary for at least one year to establish a baseline rainfall/runoff relationship. Ongoing continuous flow monitoring is necessary to properly operate the flow-weighted composite sampling*” with “*is required for the entire water year monitored.*”

Comment #106: Appendix 9 – Types of Parameters, Page 4

Recommend that Ecology clarify what accreditation bodies (e.g., Ecology, NELAC, EPA, etc.) are acceptable for accredited laboratories.

Comment #107: Appendix 9 – Recordkeeping & Reporting, Page 4

Recommend that Ecology provide an additional month for data submission to more evenly distribute workload as March 1 is the peak of annual report production. Recommend changing “*March 1*” to “*April 1*” and “*April 30*” to “*June 15.*”

Comment #108: Appendix 9 – Recordkeeping & Reporting, Page 6

Recommend adding “*for each successful storm event*” to clarify intent.

Comment #109: Appendix 9 – Recordkeeping & Reporting, page 6

Recommend deleting the following text (lines 6 and 7): “*For storm events where water quality samples were collected, the load for each parameter for each sampled storm event, include date of storm event.*” Seattle believes that pollutant loading calculations for each storm and each parameter for the most part won’t generate useful information (the amount of data generated would be 5 outfalls X 11 Storms X 38 parameters which is 2,090 calculations). Storm flow and concentrations vary greatly. Storm flow is fundamentally affected by random, year to year changes in weather and runoff hydrology in the drainage basins beyond the control of municipalities. If the purpose for storm by storm pollutant loading calculations is trend analysis, Seattle recommends using pollutant concentrations as opposed to pollutant loading, because the large component of random variability in pollutant loads is more likely to confound the interpretation of long-term changes in stormwater quality, including the effects of a municipality’s source control actions. If not deleted, please clarify the purpose of storm by storm pollutant loading calculations.

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Comment #110: Appendix 9 - Recordkeeping & Reporting, page 6

Recommend deleting or clarifying the following text (lines 26-33)

~~“An explanation and discussion of the results from each *sampled storm event* at each monitoring site and *sediments* collected at each site, including:~~

- ~~o A narrative analysis of the event mean concentrations for each parameter~~
- ~~o Any conclusions based on trend data that may result from this study or from previously collected data from these sites.~~
- ~~o A description of the Stormwater Management Program activities currently taking place or planned within the monitoring station’s drainage are that may have affected or may potentially affect future monitoring results.”~~

First sub-bullet: The requirement for a narrative analysis of the EMC for each parameter for each sampled storm event should be clarified or deleted. There are over 50 parameters analyzed per event so a narrative analysis would be unreasonable and challenging to write and read.

Requiring statistical analysis (e.g., listing the statistics of interest) is reasonable.

Second sub-bullet: A trend analysis would be reasonable after 3 years of data collection, but not after each event or even one year. This requirement should be clarified or deleted.

Third sub-bullet: Recommend making this a stand-alone bullet as is not an appropriate sub-bullet to the discussion of results from each sampling event”.

Comment #111: Appendix 9 – Table 9-1 Analytical Procedures in Stormwater

Recommending deleting the word “*Target*” in heading of 3rd column or replacing with “*Required*” as Ecology has indicated these are limits, not targets to aim for. In addition, recommend deleting associated footnote as labs are, as a practice, not willing to provide results below reporting limits. They do not want to be accountable to provide data below the limits that they can defend.

Comment #112: Appendix 9 – Table 9-1 Analytical Procedures in Stormwater

Recommend adding missing reporting limit for BTEX.

APPENDIX 11 – Structural Stormwater Controls Project List

Comment #113: Appendix 11 – Project Type List, Page 1

Seattle recommends that all project types listed in the permit in Sections S5.C.6.a.i & ii be listed in the footnote “*Type*.” For this list to be complete, “*New LID BMPs or application of LID Principles*” needs to be added. Per Seattle’s comment on Section S5.C.6.a.i, Seattle also recommends adding “*High-efficiency street sweeping*.”

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Comment #114: Appendix 11 – Retrofit Incentive, Page 1

Seattle recommends that the following sentence be added to the end of the footnote “⁵Retrofit Incentive”: “*Ecology may approve other Project Achievements and Incentive Points if the Permittee justifies their appropriateness.*” This would provide information for the potential refinement of this table for future permits.

Comment #115: Appendix 11 – Retrofit Incentive Table, Add rows for High-efficiency Street Sweeping, Page 2

Seattle recommends adding rows to the Retrofit Incentive Table for High-efficiency street sweeping as shown below:

<i>Project Achievement</i>	<i>Incentive Points</i>
<i>Water Quality (High-efficiency street sweeping): Better than Existing</i>	<i>100 (as % of roadway area swept)</i>
<i>Water Quality (High-efficiency street sweeping): Better than Existing in known water quality problem area</i>	<i>150 (as % of roadway area swept)</i>

Comment #116: Appendix 11 – Retrofit Incentive Table, Maintenance Activity, Page 2

For consistency with incentive points for other projects, Seattle recommends that incentive points be based on “*impervious area*” instead of “*area*.”

Comment #117: Appendix 11 – Retrofit Incentive Table, General Comment, Page 2

Seattle recommends that as the Incentive Point concept is further developed for future permits, the Incentive Points should be refined to account for the land use and source type of the impervious area. For example, providing water quality treatment for one acre of a commercial parking lot should receive more points than treating one acre of rooftop.

Comment #118: Appendix 11 – Water Quality Benefit Calculation, General Comment, Page 3

Seattle appreciates Ecology’s effort to provide a standardized TSS benefit that is easily implemented. However, Seattle recommends that Ecology qualify that this method provides only a rough estimate that is not suitable for purposes beyond a high level summary for Project List reporting as it may not be representative for all projects. This is due to the limitations of this simplified method which include:

- Limited data collected by Permittees during current cycle may not be robust enough to estimate concentrations from various land uses.

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- Although data collected by Permittees were primarily for areas with a dominant land use, other land uses were in the area. Additionally, runoff from both impervious and pervious areas were monitored by Permittees although only impervious area is used in this calculation. Source type (street, roof, parking lot, etc.) and connectedness are not considered.
- Pervious areas can be a source of pollutants.

Comment #119: Appendix 11 - Water Quality Benefit Calculation, Maintenance projects, Page 3

Seattle recommends that the benefits of maintenance projects be modified to read as follows:

“For maintenance projects involving solids removal, estimated reduction is the ~~sum of estimated dry weight of the total~~ solids (TS) removed in pounds.” Note that total solids (TS) is different than total suspended solids (TSS). Note that the difference also needs to be noted in the title of this section as follows; *“Water Quality Benefit (Estimated TSS or TS reduction) Calculation.”*

Comment #120: Appendix 11 - Hydro Benefit Calculation, Page 3

Based on Ecology’s objective stated in the fact sheet for the Hydro Benefit calculation to take into account the high benefit of infiltration facilities, Seattle recommends including calculations to explicitly demonstrate the volume reduction. One approach is to quantify the degree to which the LID performance standard is achieved. Another approach is to develop a simplified volume based calculation based on regionally appropriate precipitation data. Seattle recommends adding language to allow Permittees to propose equivalent methods (refer to Seattle’s next comment) and the following change:

- ***“Volume required if the project had to meet the Standard Flow Control Requirement: Choose either (1) The amount of detention/retention storage required to 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, or (2) the amount of retention required to achieve the LID performance target to match developed discharge durations to pre-developed durations for the range of pre-developed discharge rates from 8% of the 2-year peak flow to 50% of the 2-year peak flow. This is determined using WWHM (or an approved equivalent modeling program) and assuming a forested pre-developed condition.”***¹

Comment #121: Appendix 11 - Hydro Benefit Calculation, Page 4

Seattle recommends adding the following paragraph to the end of the “Overview” section.

“Ecology may approve other methods of calculating an estimated Hydro Benefit if the Permittee justifies the method is appropriate for the relevant project type.” This addition is especially

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needed due to the potential for the denominator in the Volume Ratio Calculation to be zero. Seattle also recommends that Ecology clarify that the Hydro Benefit calculation provides only a rough estimate that is not suitable for purposes beyond a high level summary for Project List reporting as it may not be representative for all projects.

Comment #122: Appendix 11 - Volume Ratio Calculation, Page 4

Seattle recommends replacing “*Infiltrates all of the 25-year, 24-hour storm on-site*” with “*Achieves LID performance standard through volume reduction strategies.*” since relating it to the LID standard is more appropriate.

Comment #123: Appendix 11 - Volume Ration Calculation, 100% Hydro benefit, Page 4

The intent of providing high credit for projects using volume reduction strategies such as LID IMPS is an important concept to capture. The concern is that the list for 100% hydro benefit is technically imbalanced. A high standard is required for bioretention (infiltrating all of the 25-year storm) while sites with only 50% of non roof hard surfaces being infiltrated receives the same credit. Recommend adding the second simplified calculation to demonstrate hydrobenefit, and deleting all the LID IMP bullets except “uses full dispersion...”. If a more simplified hydro benefit calculation is desired, relative to the second option for the volume ratio calculation provided above, an equation could be developed based on impervious area and presized sizing information such as COS calculator and Kitsap County’s GSI-Calc, eliminating the need for additional modeling.

Comment #124: Appendix 11 - Calculation Process, Page 4

Seattle recommends providing a footnote when referencing WWHM that indicates “*Other approved models or pond sizing methodologies providing comparable data are acceptable.*” For projects that have detailed SWMM or MGS Flood modeling, the need to quantify hydro benefit should not require the effort to remodel the project in WWHM.

APPENDIX 12 – Funding Agreement between Ecology and Municipal Stormwater Permittees

Comment #125: Appendix 12 – Funding Agreement, General Comment - Remove

As indicated in Seattle’s comments on S8, Seattle recommends removing Appendix 12 from the permit to clarify that Ecology, not the Permittees, has responsibility for the regional monitoring project and to allow Ecology the flexibility to adjust the RSMP as needed to operate within available funding. If Ecology includes Appendix 12, Seattle has made recommended tracked changes to the Funding Agreement and associated attachments to clarify Ecology’s intent that Permittee’s obligations will be limited to paying the funding payment amounts required in the permit and that potential funding exceedances will be managed by Ecology by either reducing

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the scope of the RSMP or finding additional, non-Permittee funding. The tracked changes recommendations are found in accompanying attachment. Due to the numerous changes recommended to clarify Ecology’s intent on these matters, each change is not called out by section below. Please contact Seattle if Ecology needs additional information or has questions on the tracked changes comments. Additional comments on the Funding Agreement not related to clarifying Ecology’s intent regarding potential funding exceedances are provided below.

Comment #126: Appendix 12 – Funding Agreement, General Comment

For consistency and clarity, throughout the document Seattle recommends providing consistent terminology by referring to “RSMP” instead of “project” and referring to “funding payments” instead of “funding shares.” These changes are shown as tracked changes throughout Appendix 12.

Comment #127: Appendix 12 – Attachment A, Ecology Task 0.3 & Task 0.6, Page 5

In Ecology’s response to comments on draft permit, please clarify the project management oversight process being referred to.

Comment #128: Appendix 12 – Attachment A, Ecology Task 0.7, Page 5

Recommend clarifying to indicate that all subtasks are not data interpretation tasks. Recommend changing “~~to the data interpretation tasks listed below~~” to “conduct the tasks listed below”.

In addition, add subtask 0.7 as follows: “d. Share data, results, and conclusions with Permittees and other interested parties” as RSMP results should be made available through other venues than the annual review.

Comment #129: Appendix 12 – Attachment A, Add new Ecology Task 0.8, Page 5

Recommend adding new Ecology task as follows: “8.0 Identify or develop suitable data management systems for Contractor Tasks 1, 2, and 3”. Recommend adding this task to address the gap in the Scope of Work as to who is responsible for identifying or developing suitable data management systems. Status & Trends contractor tasks indicate “*Confirm that data management tools are available.*” Data management is not included in contractor tasks for Regional Effectiveness studies. As the overall coordinator of the RSMP, Ecology seems the logical entity to identify and/or develop suitable data management systems, and this additional task reflects this approach. If Ecology is not going to do this, it needs to be added as a task to the contractor scope of work.

Comment #130: Appendix 12 – Attachment A, Add new Ecology Task 0.9, Page 5

Recommend adding new Ecology task as follows: “9.0 Provide a technical program lead for each of the technical SWG subgroups (Status & Trends, Program Effectiveness, and Source Identification and Diagnostics).” Recommend adding this task to increase the efficiency of the

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SWG subgroups by centralizing some organizational functions so these tasks do not need to be performed by committee. This would decrease the anticipated heavy workload and potential strain on SWG subgroup staff. For more information, refer to Seattle’s comment on S8.

Comment #131: Appendix 12 – Attachment A, Contractor Task 1.1.3.d.ii, Page 6

Recommend deleting this task if not anticipated to be conducted during 2013 – 2018 permit term.

Comment #132: Appendix 12 – Attachment A, Contractor Task 2.1.d, Page 7

This task will require a large database that currently does not exist and is potentially unfunded. Refer to Seattle’s comment on Appendix 12- Attachment A, Ecology Task 0.9 regarding Seattle’s recommendation that a new Ecology task be added to identify a suitable database.

Comment #133: Appendix 12 – Attachment A, Contractor Task 3.1, Page 7

Recommend deleting reference to Attachment C as the list of ranked effectiveness studies is a living list that should be outside of the permit. For more information, refer to Seattle’s comment on S8.

Comment #134: Appendix 12 – Attachment A, Contractor Task 3.2, Page 7

Recommend adding the following language “*As part of the RFP process, the contractor will provide input to Ecology on the ability to implement or conduct specific studies in the permit timeframe and an estimated cost to implement.*” Given the broad range of potential questions on the ranked list, it would benefit all to understand if the question can be answered in the timeframe of the permit with the available funding. If a question is too large or hard to answer, the oversight committee can move the question to a lower ranking or ask the effectiveness subgroup to develop additional questions for the topic. For this reason it is also important that the list of studies be held outside of the permit.

Comment #135: Appendix 12 – Attachment A, recommend adding Contractor Task 3.5. Page 7

Recommend that the following reporting task be added to facilitate sharing of results: “*5. The contractor will provide bi-annual and final report to Ecology on the implementation status, any results and conclusions of the effectiveness studies for Ecology to summarize and provide to the Permittees.*”

Comment #136: Appendix 12 – Attachment A, Contractor Task 4, Page 7

As described in Seattle’s comments on S8.E.1, recommend deleting current tasks and replacing with new tasks. As a starting point for what new tasks could be, refer to Seattle’s comments on S8.E.1.

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Comment #137: Appendix 12 – Attachment C, Page 12

Seattle recommends that this list should not be included in the permit (refer to Seattle comments on S8.D.1 for more information). Seattle will be providing input on individual studies to SWG Effectiveness subgroup outside of permit comments as Seattle believes that the study list should not be a part of the permit.

1 | _____ Issuance Date:
2 | Effective Date:
3 | Expiration Date:
4 |

5 | **City of Seattle Comments – Attachment 2.**

6 | **Ecology text that is in track changes that is proposed to be deleted by Seattle is in double**
7 | **strikethrough and highlighted. Seattle’s suggested changes are highlighted. See Seattle**
8 | **Attachment 1 for explanation of change. Note that Seattle has also included corrections,**
9 | **deletions or additions in this document that are not discussed in Attachment 1.**

10 |
11 | **DRAFT**

12 |
13 | **Phase I Municipal Stormwater Permit**

14 |
15 |
16 | National Pollutant Discharge Elimination System and
17 | State Waste Discharge General Permit
18 | for discharges from
19 | Large and Medium Municipal Separate Storm Sewer Systems

20 |
21 |
22 | **State of Washington**
23 | **Department of Ecology**
24 | Olympia, Washington 98504-7600

25 |
26 |
27 | In compliance with the provisions of
28 | The State of Washington Water Pollution Control Law
29 | Chapter 90.48 Revised Code of Washington
30 | and
31 | The Federal Water Pollution Control Act
32 | (The Clean Water Act)
33 | Title 33 United States Code, Section 1251 et seq.

34 |
35 |
36 |
37 | Until this permit expires, is modified, or revoked, Permittees that have properly obtained
38 | coverage under this permit are authorized to discharge to waters of the state in accordance
39 | with the special and general conditions which follow.
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Kelly Susewind, P.E., P.G.
Water Quality Program Manager
Department of Ecology

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SPECIAL CONDITIONS

S1. PERMIT COVERAGE AND PERMITTEES

A. Geographic Area of Permit Coverage

This permit covers *discharges* from Large and Medium *Municipal Separate Storm Sewer Systems* (MS4s) as established at Title 40 *CFR* 122.26, except for municipal separate storm sewers (MS3) owned or operated by municipal separate storm sewers (MS3s) owned or operated by the Washington State Department of Transportation's MS3s MS4s. Large and medium MS4s include all MS3s located within cities or counties required to have permit coverage. Large and medium MS4s include all MS3s located within cities or counties required to have permit coverage.

For *Secondary Permittees* required to obtain coverage under this permit, the minimum geographic area of coverage includes the portion of the MS4 which is located within the unincorporated areas of Clark, King, Snohomish, and Pierce Counties and the incorporated areas of the cities of Seattle and Tacoma. Ecology may establish additional geographic areas of coverage specific to an individual Secondary permittee.

B. The following Cities and Counties have submitted a Duty to Reapply- Notice of Intent (NOI) for coverage to Ecology prior to August 19, 2011 and have coverage are covered under this permit as Permittees, beginning on the effective date of the permit:

1. The City of Tacoma and the City of Seattle.
2. Clark, King, Pierce, and Snohomish Counties.

~~C. King County is covered as a Co-Permittee with the City of Seattle for discharges from outfalls King County owns or operates within the City of Seattle.~~

~~D.C. Upon application and coverage in accordance with Special Condition S1.F., the following entities have submitted a Duty to Reapply- Notice of Intent (NOI) for coverage to Ecology prior to August 19, 2011 and have coverage are covered under this permit as Secondary Permittees, beginning on the effective date of the permit:~~

1. Port of Seattle, excluding Seattle-Tacoma International Airport.
2. Port of Tacoma.
- 2.3. The University of Washington, Seattle; Seattle School District #1; Metropolitan Park District of Tacoma; Washington State Military Department; and Tacoma Community College.
3. ~~Other owners or operators of municipal separate storm sewers located in the Cities or unincorporated portions of the Counties listed in S1.B above.~~

1 ~~E.D.~~ Unless otherwise noted, the term “Permittee” includes Permittee, Co-Permittee, and
2 Secondary Permittee, and New Secondary Permittee, as defined above in Special
3 Conditions S1.B., S1.C. and S1.D.

4 ~~F.E.~~ Coverage for New Secondary Permittees

5 1. Entities meeting the requirements in S1.E.a-b, below, are required to apply for
6 and to obtain coverage under this permit. Upon application and coverage the
7 following entities will have coverage under this Permit as each New Secondary
8 Permittee, identified under Special Condition S1.D. shall either:

9 a. Active drainage, diking, flood control, or diking and drainage districts
10 located in the Cities or unincorporated portions of the Counties listed in
11 S1.B. above, which own or operate municipal separate storm sewers
12 serving non-agricultural land uses; and were not covered by the permit
13 prior to August 1, 2013.

14 a.-b. Other owners or operators of municipal separate storm sewers (MS3)
15 located in the Cities or unincorporated portions of the Counties listed in
16 S1.B above; and which were not covered by the permit prior to August 1,
17 2013.

18 2. To obtain coverage under this permit, New Secondary Permittees shall
19 either Application Requirements:

20 a. Submit a Notice of Intent (NOI) for Coverage under National Pollutant
21 Discharge Elimination System (NPDES) Municipal Stormwater General
22 Permit provided in Appendix 5 and provide public notice of the
23 application for coverage in accordance with WAC 173-226-130. The NOI
24 shall constitute the application for coverage. Ecology will notify
25 applicants in writing of their status concerning coverage under this permit
26 within 90 days of Ecology's receipt of a complete NOI.

27 b. Each Permittee applying as Co-Permittee shall submit an NOI provided in
28 Appendix 5. The NOI and shall clearly identify the MS3 and areas of the
29 MS4 for which the Co-Permittee is responsible.

30 b. Submit a co-application jointly with a permittee named in S1.B. and Each
31 permittee shall provide public notice of the application for coverage in
32 accordance with WAC 173-226-130. The co-application shall consist of an
33 amendment to the Phase I Part 1, and Part 2 permit applications. Ecology
34 will notify applicants in writing of their status concerning their co-
35 application coverage under this permit within 90 days of Ecology's receipt
36 of a complete NOI.

37 2. Secondary Permittees required to get coverage under this permit, and the
38 NPDES and State Waste Discharge Permit for discharges from Small Municipal
39 Separate Storm Sewers in Western Washington and/or the NPDES and State
40 Waste Discharge Permit for discharges from Small Municipal Separate Storm
41 Sewers in Eastern Washington may obtain coverage by submitting a single NOI.

1 3. ~~NOIs and co-applications shall be submitted to:~~

2 Department of Ecology
3 Water Quality Program
4 Municipal Stormwater Permit Program
5 P.O. Box 47696
6 Olympia, WA 98504-7696

7 ~~G.F.~~ All MS4s ~~and MS3s~~ and MS3s owned or operated by Permittees named in S1.B. and
8 located in another city or county area requiring coverage under this permit or either
9 the *Western Washington Phase II Municipal Stormwater Permit* or the *Eastern*
10 *Washington Phase II Municipal Stormwater Permit* are also covered under this
11 permit.

12 S2. AUTHORIZED DISCHARGES

13 A. This permit authorizes the discharge of stormwater to surface waters and to ground
14 *waters of the state* from municipal separate storm sewers owned or operated by each
15 Permittee covered under this permit in the geographic area covered by this permit
16 pursuant to S1.A. subject to the following limitations:

- 17 1. Discharges to ground waters of the state through facilities regulated under the
18 Underground Injection Control (UIC) program, ~~c~~Chapter 173-218 WAC, are not
19 ~~covered-authorized~~ under this permit.
- 20 2. Discharges to ground waters not subject to regulation under the federal *Clean*
21 *Water Act* are ~~covered-authorized~~ in this permit only under state authorities,
22 Chapter 90.48 *RCW*, the Water Pollution Control Act.

23 B. This permit authorizes discharges of non-stormwater flows to surface waters and
24 ground waters of the state from municipal separate storm sewers owned or operated
25 by each Permittee covered under this permit, in the geographic area covered pursuant
26 to S1.A, only under any of the following conditions:

- 27 1. The discharge is authorized by a separate ~~individual or general~~ National
28 Pollutant Discharge Elimination System (NPDES) ~~permit;~~ or State Waste
29 Discharge permit.
- 30 2. The discharge ~~is from~~ occurred during associated with emergency fire fighting
31 activities; ~~or~~
- 32 3. The discharge is from another illicit or non-stormwater discharge that is
33 managed by the Permittee as provided in Special Condition S5.C.8., S6.D.3., or
34 S6.E.3.

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

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

- 1 D. Discharges from municipal separate storm sewers constructed after the effective date
2 of this permit shall receive all applicable state and local permits and use
3 authorizations, including compliance with Chapter 43.21C RCW (the State
4 Environmental Policy Act).
- 5 E. This permit does not authorize discharges of stormwater to waters within Indian
6 Reservations except where authority has been specifically delegated to Ecology by
7 the U.S. Environmental Protection Agency. The exclusion of such discharges from
8 this permit does not waive any rights the State may have with respect to the
9 regulation of the discharges.

10 S3. RESPONSIBILITIES OF PERMITTEES

- 11 A. Each Permittee, Co-Permittee and Secondary Permittee is responsible for complying
12 with the terms of this permit for the municipal separate storm sewers (MS3) it owns
13 or operates that are covered by this permit.
- 14 1. Each Permittee, as listed in S1.B., is required to comply with all conditions of
15 this permit, except for S6. *Stormwater Management Program for ~~Co-Permittees~~*
16 ~~and~~ *Secondary Permittees*.
- 17 ~~2. King County, as a Co-Permittee, is required to comply with all conditions of~~
18 ~~this permit except for S6.D. and S6.E.~~
- 19 ~~3.2.~~ The Port of Tacoma and the Port of Seattle, are required to comply with all
20 conditions of this permit except for S5. *Stormwater Management Program* and
21 conditions S6.D. *Stormwater Management Program for Secondary*
22 *Permittees* ~~and S6.F.~~
- 23 ~~4.3.~~ All ~~other~~ Secondary Permittees, except for the Port of Tacoma and the Port of
24 Seattle, are required to comply with all conditions of this permit except for S5.
25 *Stormwater Management Program* and conditions S6.E. *Stormwater*
26 *Management Program for the Port of Seattle and Port of Tacoma*, ~~S6.F.~~, and
27 permit conditions in S8. *Monitoring conditions C., D., and E.* through S8.H.
- 28 B. Permittees may rely on another *entity* to satisfy one or more of the requirements of
29 this permit. Permittees that are relying on another entity to satisfy one or more ~~or~~ of
30 their permit obligations remain responsible for permit compliance if the other entity
31 fails to implement the permit conditions. Permittees may rely on another entity
32 provided all the requirements of 40 CFR 122.35(a) are satisfied, including but not
33 limited to ~~Where permit responsibilities are shared they shall be documented as~~
34 ~~follows:~~
- 35 ~~1. The other entity agrees to take on responsibility for implementation of the~~
36 ~~permit requirement(s).~~
- 37 ~~1.2. The other entity, in fact, implements the Permit requirements. Permittees and~~
38 ~~Co-Permittees that are continuing coverage under this permit shall submit a~~
39 ~~statement that describes the permit requirements that will be implemented by~~
40 ~~other entities. The statement must be signed by all participating entities. There~~

1 ~~is no deadline for submitting such a statement, provided that this does not alter~~
2 ~~implementation deadlines. Permittees and Co-Permittees may amend their~~
3 ~~statement during the term of the permit to establish, terminate, or amend their~~
4 ~~shared responsibilities statement, and submit the amended statements to~~
5 ~~Ecology.~~

6 ~~2. Secondary Permittees shall submit an NOI that describes which requirements~~
7 ~~they will implement and identify the entities that will implement the other~~
8 ~~permit requirements in the area served by the Secondary Permittee's MS4. A~~
9 ~~statement confirming the shared responsibilities, signed by all participating~~
10 ~~entities, shall accompany the NOI. Secondary Permittees may amend their NOI,~~
11 ~~during the term of the permit, to establish, terminate, or amend shared~~
12 ~~responsibility arrangements, provided this does not alter implementation~~
13 ~~deadlines.~~

14 C. Unless otherwise noted, all appendices to this permit are incorporated by this
15 reference as if set forth fully within this permit.

16 **S4. COMPLIANCE WITH STANDARDS**

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

21 B. This permit does not authorize a discharge which would be a violation of Washington
22 State surface water quality standards (~~c~~Chapter 173-201A WAC), ground water
23 quality standards (~~c~~Chapter 173-200 WAC), sediment management standards
24 (~~C~~chapter 173-204 WAC), or human health-based criteria in the national Toxics Rule
25 (Federal Register, Vol. 57, NO. 246, Dec. 22, 1992, pages 60848-60923). The
26 required response to such discharges is defined in section S4.F., below.

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

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

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

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

38 1. A Permittee shall notify Ecology in writing within 30 days of becoming aware,
39 based on credible site-specific information, that a discharge from the municipal
40 separate storm sewer owned or operated by the Permittee is causing or

1 contributing to a known or likely violation of Water Quality Standards in the
2 receiving water. Written notification provided under this subsection shall, at a
3 minimum, identify the source of the site-specific information, describe the
4 nature and extent of the known or likely violation in the receiving water, and
5 explain the reasons why the MS4 discharge is believed to be causing or
6 contributing to the problem. For ongoing or continuing violations, a single
7 written notification to Ecology will fulfill this requirement.

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

- 14 a. The violation of Water Quality Standards is already being addressed by a
15 Total Maximum Daily Load or other enforceable water quality cleanup
16 plan; or
17 b. Ecology concludes the MS4 contribution to the violation will be
18 eliminated through implementation of other permit requirements.

19 3. Adaptive Management Response

- 20 a. Within 60 days of receiving a notification under S4.F.2., or by an
21 alternative date established by Ecology, the Permittee shall review its
22 Stormwater Management Program and submit a report to Ecology. The
23 report shall include:
- 24 i. A description of the operational and/or structural BMPs that are
25 currently being implemented to prevent or reduce any pollutants that
26 are causing or contributing to the violation of Water Quality
27 Standards, including a qualitative assessment of the effectiveness of
28 each BMP.
- 29 ii. A description of potential additional operational and/or structural
30 BMPs that will or may be implemented in order to apply AKART on
31 a site-specific basis to prevent or reduce any pollutants that are
32 causing or contributing to the violation of Water Quality Standards.
- 33 iii. A description of the potential monitoring or other assessment and
34 evaluation efforts that will or may be implemented to monitor, assess,
35 or evaluate the effectiveness of the additional BMPs.
- 36 iv. A schedule for implementing the additional BMPs including, as
37 appropriate: funding, training, purchasing, construction, monitoring,
38 and other assessment and evaluation components of implementation.
- 39 b. Ecology will, in writing, acknowledge receipt of the report within a
40 reasonable time and notify the Permittee when it expects to complete its

1 review of the report. Ecology will either approve the additional BMPs and
2 implementation schedule or require the Permittee to modify the report as
3 needed to meet AKART on a site-specific basis. If modifications are
4 required, Ecology will specify a reasonable time frame in which the
5 Permittee shall submit and Ecology will review the revised report.

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

9 d. The Permittee shall include with each subsequent annual report a summary
10 of the status of implementation, and the results of any monitoring,
11 assessment or evaluation efforts conducted during the reporting period. If,
12 based on the information provided under this subsection, Ecology
13 determines that modification of the BMPs or implementation schedule is
14 necessary to meet AKART on a site-specific basis, the Permittee shall
15 make such modifications as Ecology directs. In the event there are
16 ongoing violations of water quality standards despite the implementation
17 of the BMP approach of this section, the Permittee may be subject to
18 compliance schedules to eliminate the violation under WAC 173-201A-
19 510(4) and WAC 173-226-180 or other enforcement orders as Ecology
20 deems appropriate during the term of this permit.

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

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

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

- 32 1. Reduce the discharge of pollutants to the MEP;
- 33 2. Comply with the state AKART requirements; or
- 34 3. Control the discharge of toxicants to waters of the State of Washington.

35 **S5. STORMWATER MANAGEMENT PROGRAM**

36 A. Each Permittee listed in S1.B. shall implement a Stormwater Management Program
37 (SWMP) during the term of this permit. **For the purpose of this permit a stormwater**
38 **management program is a set of actions and activities comprising the components**
39 **listed in S5.C of this Permit, any applicable actions required by S7 (TMDL) and**
40 **Appendix 2, activities required by S8 (monitoring), and activities required to meet**

1 S4.F obligations. For the purpose of this permit a stormwater management program is
2 a set of actions comprising the *components* listed in S5.C., and additional actions and
3 activities, where necessary, to meet the requirements of *S7 Compliance with Total*
4 *Maximum Daily Load Requirements*.

5 1. ~~In accordance with the requirements in S9 Reporting Requirements, e~~Each
6 Permittee shall prepare written documentation of their SWMP. The SWMP
7 Report (SWMPR) shall be organized according to the program components in
8 S5.C. and shall be updated at least annually and for submittal with the
9 Permittee's ~~it to Ecology in written and electronic formats with the first year~~
10 annual report to Ecology (S9 Reporting Requirements). ~~The documentation of~~
11 the SWMP shall be organized according to the program components in S5.C.,
12 and shall be updated annually. ~~The SWMPR documentation shall be written to~~
13 inform the public of the planned SWMP activities for the upcoming calendar
14 year, and shall include a description of:

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

16 b. ~~and a~~ Any additional planned actions necessary to meet the requirements
17 of applicable TMDLs pursuant to S7 Compliance with Total Maximum
18 Daily Load Requirements.

19 ~~a-c.~~ Any additional planned actions to meet the requirements of S8
20 Monitoring.

21 ~~1.2.~~ Each Permittee shall track the cost or estimated cost of development and
22 implementation of each component of the SWMP. This information shall be
23 provided to Ecology upon request.

24 ~~2.3.~~ Each Permittee shall track the number of inspections, official enforcement
25 actions and types of public education activities as required by the respective
26 program component. ~~This information shall be included in the annual report.~~

27 B. The SWMP shall be designed to reduce the discharge of pollutants from MS4s to the
28 maximum extent practicable (MEP), meet state AKART requirements, and protect
29 water quality.

30 Permittees that are already implementing some or all of the SWMP components in
31 this section shall continue implementation of those components of their SWMP.
32 Permittees are to continue implementation of existing stormwater management
33 programs until they begin implementation of the updated stormwater management
34 program in accordance with the terms of this permit, including implementation
35 schedules. ~~Permittees are to continue implementation of existing stormwater~~
36 ~~management programs until they begin implementation of the updated stormwater~~
37 ~~management program in accordance with the terms of this permit, including~~
38 ~~implementation schedules.~~ Permittees shall not repeal existing local requirements to
39 control stormwater that go beyond the requirements of this permit for prohibiting
40 non-stormwater discharges and for new development and redevelopment sites.

1 C. The SWMP shall include the components listed below. The requirements of the
2 stormwater management program shall apply to municipal separate storm sewers, and
3 areas served by municipal separate storm sewers, owned or operated by the Permittee.
4 ~~The requirements of the stormwater management program shall apply to municipal~~
5 ~~separate storm sewers, and areas served by municipal separate storm sewers owned or~~
6 ~~operated by the Permittee.~~ To the Within the scope and to the extent allowable under
7 state and federal law, all SWMP components are mandatory.

8 1. Legal Authority

- 9 a. ~~No later than the effective date of this permit, e~~Each Permittee shall be
10 able to demonstrate that they can operate pursuant to legal authority which
11 authorizes or enables the Permittee to control discharges to and from
12 municipal separate storm sewers owned or operated by the Permittee.
- 13 b. This legal authority, which may be a combination of statute, ordinance,
14 permit, contracts, orders, interagency agreements, or similar means, shall
15 authorize or enable the Permittee, at a minimum, to:
- 16 i. Control through ordinance, order, or similar means, the contribution
17 of pollutants to municipal separate storm sewers owned or operated
18 by the Permittee from stormwater discharges associated with
19 industrial activity, and control the quality of stormwater discharged
20 from sites of industrial activity;
- 21 ii. Prohibit through ordinance, order, or similar means, illicit discharges
22 to the municipal separate storm sewer owned or operated by the
23 Permittee;
- 24 iii. Control through ordinance, order, or similar means, the discharge of
25 spills and disposal of materials other than stormwater into the
26 municipal separate storm sewers owned or operated by the
27 Permittee;
- 28 iv. Control through interagency agreements among co-applicants ~~among~~
29 ~~co-applicants~~, the contribution of pollutants from one portion of the
30 municipal separate storm sewer system to another portion of the
31 municipal separate storm sewer system;
- 32 v. Require compliance with conditions in ordinances, permits,
33 contracts, or orders; and,
- 34 vi. Within the limitations of state and federal law, carry out all
35 inspection, surveillance, and monitoring procedures necessary to
36 determine compliance and non-compliance with permit conditions,
37 including the prohibition on illicit discharges to the municipal
38 separate storm sewer and compliance with local ordinances.

39 2. Municipal Separate Storm Sewer System Mapping and Documentation

1 The SWMP shall include an ongoing program for mapping and documenting the
2 MS4.

3 Minimum performance measure information and its form of retention shall
4 include:

5 a. Ongoing Mapping: Each Permittee shall continue mapping the features
6 listed below on an ongoing basis. All updates shall be completed within
7 six months of additional features being found, modified, or constructed.
8 No later than 2 years from the effective date of this permit each Permittee
9 shall map all

10 i. ~~Known MS4~~ municipal separate storm sewer ~~municipal separate storm~~
11 sewer (MS3) outfalls.

12 ii. ~~and~~ Receiving waters, ~~and~~

13 iii. ~~s~~Structural stormwater treatment and flow control BMPs/facilities owned,
14 operated, or maintained by the Permittee. ~~Permittees may rely on~~
15 permanent stormwater control plans for mapping LID BMPs provided they
16 are spatially referenced to the MS4 map and maintained on an ongoing
17 basis. ~~Mapping of outfalls and structural BMPs shall continue on an on-~~
18 going basis as additional outfalls are found, and as new BMPs are
19 constructed or installed.

20 iv. Geographic areas served by MS3s owned or operated by the
21 Permittee ~~s~~ MS4 that do not discharge stormwater to surface water.

22 v. Tributary MS3 conveyances, owned or operated by the permittee to
23 all known MS3 outfalls with a 24-inch nominal diameter or larger, or
24 an equivalent cross-sectional area for non-pipe systems. For
25 Counties, this requirement applies to urban/higher density rural sub-
26 basins. For Cities, this requirement applies throughout the City. The
27 following attributes shall be mapped:

28 (1) Tributary conveyance type, material, and size where known

29 (2) Associated drainage areas

30 (3) Land uses

31 vi. Connections between the MS4s owned or operated by the Permittee
32 and MS3s owned or operated by other municipalities or other public
33 entities.

34 vii. ~~All~~ No later than 24 months after the effective data of this
35 permit, map all connections to the ~~MS4~~ MS3s owned or operated by
36 the permittee authorized or allowed by the Permittee after February
37 16, 2007.

38 viii. Existing, known connections over 8 inches in nominal diameter to
39 tributary conveyances mapped in accordance with S5.C.2.a.v. For
40 Counties, this requirement applies to one-half the area of the county

1 within urban/higher density rural sub-basins. For Cities, this
2 requirement applies throughout the City.

3 ~~i. No later than 2 years from the effective date of this permit each permittee~~
4 ~~shall initiate a program to map connection points between municipal~~
5 ~~separate storm sewers owned or operated by the Permittee and other~~
6 ~~municipalities or other public entities.~~

7 ~~a. No later than 4 years from the effective date of this permit each Permittee~~
8 ~~shall map the attributes listed below for all storm sewer outfalls with a 24~~
9 ~~inches nominal diameter or larger, or an equivalent cross-sectional area for~~
10 ~~non-pipe systems. For Counties, the mapping shall be done within~~
11 ~~urban/higher density rural sub-basins. For Cities, the mapping shall be~~
12 ~~done throughout the City. Attributes mapped shall include: Land use,~~
13 ~~Tributary conveyances (indicate type, material, and size where known);~~
14 ~~and associated drainage areas.~~

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

18 b. New Mapping: Each Permittee shall complete the following mapping
19 updates by August 1, 2017. ~~existing, known connections over 8" to~~
20 ~~municipal separate storm sewers tributary to all storm sewer outfalls with~~
21 ~~a 24" inches nominal diameter or larger, or an equivalent cross-sectional~~
22 ~~area for non-pipe systems, according to the following schedule:~~

23 ~~• City of Seattle and City of Tacoma: 2 years after the effective~~
24 ~~date of this permit.~~

25 ~~• Clark, King Pierce and Snohomish Counties: one half the area~~
26 ~~of the County within urban/higher density rural sub-basins 4~~
27 ~~years after the effective date of this permit.~~

28 i. Counties shall map existing, known connections greater than 8
29 inches in nominal diameter to tributary conveyances mapped in
30 accordance with S5.C.2.a.v.

31 ii. Each Permittee shall map existing, known connections equal to 8
32 inches in nominal diameter to tributary conveyances mapped in
33 accordance with S.5.C.2.a.v.

34 iii. Each Permittee shall map connections between stormwater treatment
35 and flow control BMPs / facilities owned, or operated, or maintained
36 by the Permittee mapped in accordance with S5.C.2.a.iii and
37 tributary conveyances mapped in accordance with S5.C.2.a.v. -The
38 Permittee shall map any emergency overflows.

1 i. ~~No later than 4 years from the effective date of this permit each~~
2 ~~Permittee shall map geographic areas served by the Permittee's MS4~~
3 ~~that do not discharge stormwater to surface water.~~

4 c. To the extent consistent with national security laws and directives, each
5 Permittee shall make available to Ecology, upon request, available maps
6 depicting the information required in S5.C.2-~~a and b.i through v.~~, above.
7 The ~~preferred required~~ format ~~for mapping is of submission will be an~~
8 electronic ~~format~~ with fully described mapping standards. An example
9 description is available on Ecology's website. ~~Notification of updated GIS~~
10 ~~data layers shall be included in annual reports.~~

11 ~~d.~~ Upon request, and to the extent appropriate, Permittees shall provide
12 mapping information to federally recognized Indian Tribes, other
13 municipalities, Co-Permittees and Secondary Permittees. This permit does
14 not preclude Permittees from recovering reasonable costs associated with
15 fulfilling mapping information requests by federally recognized Indian
16 Tribes, other municipalities, Co-Permittees and Secondary Permittees.

17
18
19
20 3. Coordination

21 The SWMP shall include coordination mechanisms among departments within
22 each jurisdiction to eliminate barriers to compliance with the terms of this
23 permit.

24 The SWMP shall also include coordination mechanisms among entities covered
25 under a municipal stormwater NPDES permit to encourage coordinated
26 stormwater-related policies, programs and projects within a watershed.

27 Minimum Performance Measures:

28 a. ~~No later than 1 year after the effective date of this permit, establish, in~~
29 ~~writing, and begin i~~Implementation of, intra-governmental (internal)
30 coordination agreement(s) or Executive Directive(s) to facilitate
31 compliance with the terms of this permit. Permittees shall include
32 information in the first year annual report to identify all departments
33 within the Permittee's jurisdiction that conduct stormwater-related
34 activities and their roles and responsibilities under this permit, and a
35 current organizational chart specifying these departments' key personnel.

36 b. ~~No later than 2 years after the effective date of this permit, or~~Implement;
37 and within 2 years following the addition of a new Secondary Permittee,
38 establish and implement:

- 1 i. Coordination mechanisms clarifying roles and responsibilities for the
2 control of pollutants between *physically interconnected* MS4s of
3 the Permittee and any other Permittee covered by a municipal
4 stormwater permit.
- 5 ii. Coordinating stormwater management activities for *shared*
6 *waterbodies*, among Permittees and Secondary Permittees, as
7 necessary to avoid conflicting plans, policies and regulations.

8 Permittees shall document their efforts to establish the required
9 coordination mechanisms. Failure to effectively coordinate is not a permit
10 violation provided other entities, whose actions the Permittee has no or
11 limited control over, refuse to cooperate.

12 4. Public Involvement and Participation

13 The SWMP shall provide ongoing opportunities for public involvement in the
14 Permittee's stormwater management program and implementation priorities.

15 Minimum performance measures:

- 16
- 17 a. ~~No later than 6 months after the effective date of this permit, develop and~~
18 ~~begin~~ Permittees shall implementing a process to create opportunities for
19 the public to participate in the decision-making processes involving the
20 development, implementation and update of the Permittee's SWMP. ~~Each~~
21 ~~Permittee shall develop and implement a process for consideration of~~
22 ~~public comments on their SWMP.~~
- 23 b. Each Permittee shall post on their website ~~make~~ their SWMPR, the
24 SWMP documentation required under S5.A.1. and the annual report
25 required under S9.A. all submittals required by this permit, including
26 annual reports, available to the public no later than May 31 each year. ~~To~~
27 ~~comply with the posting requirement, a Permittee that does not maintain a~~
28 ~~website may submit their updated SWMPR starting with the first annual~~
29 ~~report, on the Permittee's website or submitted in electronic format to~~
30 ~~Ecology for posting on Ecology's website. All other submittals should be~~
31 available to the public upon request.

32 5. Controlling Runoff from New Development, Redevelopment and Construction
33 Sites

34 The SWMP shall include a program to prevent and control the impacts of runoff
35 from new development, redevelopment, and construction activities. The
36 program shall apply to private and public development, including roads.

- 37 a. Site and subdivision scale m ~~Minimum~~ technical requirements ~~performance~~
38 measures:

1 i. The Minimum Requirements, thresholds, and definitions in
2 Appendix 1, or Minimum Requirements, thresholds, and definitions
3 determined by Ecology to be equivalent to Appendix 1, for new
4 development, redevelopment, and construction sites shall be
5 included in ordinances or other enforceable documents adopted by
6 the local government. Adjustment and variance criteria equivalent to
7 those in Appendix 1 shall be included. More stringent requirements
8 may be used, and/or certain requirements may be tailored to local
9 circumstances through the use of basin plans or other similar water
10 quality and quantity planning efforts. Such local requirements and
11 thresholds shall provide equal or similar protection of receiving
12 waters and equal or similar levels of pollutant control as compared to
13 Appendix 1.

14 ii. The local requirements shall include a site planning process and
15 BMP selection and design criteria that, when used to implement the
16 minimum requirements in Appendix 1, will protect water quality,
17 reduce the discharge of pollutants to the maximum extent
18 practicable, and satisfy the state requirement under chapter 90.48
19 RCW to apply all known, available, and reasonable methods of
20 prevention, control and treatment (AKART) prior to discharge.
21 Permittees shall document how the criteria and requirements will
22 protect water quality, reduce the discharge of pollutants to the
23 maximum extent practicable, and satisfy the state AKART
24 requirements.

25 Permittees who choose to use the site planning process, and BMP
26 selection and design criteria in the 2012~~05~~ *Stormwater Management*
27 *Manual for Western Washington*¹, or an equivalent manual approved
28 by Ecology, may cite this choice as their sole documentation to meet
29 this requirement.

30 ~~iii. Low Impact Development~~

- 31 ~~• The program must allow non-structural preventative actions~~
32 ~~and source reduction approaches such as Low Impact~~
33 ~~Development Techniques (LID), to minimize the creation of~~
34 ~~impervious surfaces, and measures to minimize the disturbance~~
35 ~~of soils and vegetation.~~
- 36 ~~• The program must require² non-structural preventive actions~~
37 ~~and source reduction approaches including Low Impact~~

¹ [Ecology's Stormwater Management Manual for Western Washington is currently under public review and comment for selected edits. Ecology will publish the revised manual in the spring of 2012.](#)

² ~~In order to implement the Pollution Control Hearings Board's language in S5.C.5.b.iii, Ecology will initiate a process to define the scope of LID techniques to be considered, criteria for determining the feasibility of LID~~

1 *Development Techniques (LID), to minimize the creation of*
2 *impervious surfaces, and measures to minimize the disturbance*
3 *of soils and vegetation where feasible.*

4 iii. No later ~~than June 30, 2015~~ ~~December 31, 2014~~ ~~than~~ 18 months from
5 ~~the effective date of this permit~~, each Permittee shall adopt and make
6 effective a local program that meets the requirements in S5.C.5.a.b.i
7 through ~~iii(1)~~, above. ~~The local program adopted to meet the~~
8 ~~requirements of S5.C.5.b.i through ii, above, shall apply to all~~
9 ~~applications³ submitted after January 1, 2015 and shall apply to~~
10 ~~projects approved prior January 1, 2015, which have not started~~
11 ~~construction⁴ by January 1, 2018.~~ **COMMENT: See Attachment 1**
12 **for proposed changes to this section**

13 Ecology review and approval of the local manual and ordinances is
14 required. Approved manuals and ordinances are listed in Appendix
15 10. Permittees shall provide detailed, written justification of any of
16 the requirements which differ from those contained in Appendix 1 of
17 this permit.

18 The Permittee shall submit draft enforceable requirements, technical
19 standards and manual to Ecology no later than ~~June 30, 2014~~
20 ~~December 31, 2013~~ ~~12 months after the effective date of this permit~~.
21 Ecology will review and provide written response to the Permittee. If
22 Ecology takes longer than ~~60-90~~ days to provide a written response,
23 the required deadline for adoption and order effective date will be
24 automatically extended by the number of calendar days that Ecology
25 exceeds a ~~6~~90 day period for written response.

26 In the case of circumstances beyond the Permittee's control, such as
27 litigation or administrative appeals that may result in noncompliance
28 with the requirements of this section, the Permittee shall promptly
29 notify Ecology and submit a written request for an extension.
30 Extensions shall be granted by Ecology for a reasonable length of
31 time appropriate to the circumstances (for example, the duration of
32 litigation or administrative appeal) without penalty, and permit
33 modifications shall not be necessary for such extensions.

~~techniques, and a LID performance standard. When the process is complete, Ecology will incorporate the results and a deadline for implementation of S5.C.5.b.iii(2) into the permit through a permit modification.~~

~~³ In this context, application means, at a minimum a complete, project description, site plan, and, if applicable, SEPA checklist.~~

~~⁴ "Started construction" means the site work associated with, and directly related to the approved project has begun. For example: grading the project site to final grade or utility installation. Simply clearing the project site does not constitute the start of construction.~~

1 | iv. ~~No later than 18 months after the effective date of this permit, t~~The
2 | program shall ~~include~~establish legal authority to inspect, ~~within the~~
3 | ~~scope and extent allowable under state and federal law,~~ private
4 | stormwater facilities and enforce maintenance standards for all-new
5 | development and redevelopment approved under the provisions of
6 | this section.

7 | v. ~~No later than 18 months after the effective date of this permit, t~~The
8 | program shall include a process of permits, ~~site~~ plan review,
9 | inspections, and enforcement capability to meet the following
10 | standards for both private and public projects, using qualified
11 | personnel:

12 | (1) Review all stormwater site plans submitted to the Permittee for
13 | proposed development involving land disturbing activity that
14 | meet the thresholds in S5.C.5.~~ba~~.i., above.

15 | (2) Inspect prior to clearing and construction, all permitted
16 | development sites that meet the thresholds in S5.C.5.~~ba~~.i., and
17 | that have a high potential for sediment transport as determined
18 | through plan review based on definitions and requirements in
19 | Appendix 7.

20 | (3) Inspect all permitted development sites involving land
21 | disturbing activity that meet the thresholds in S5.C.5.~~ba~~.i.,
22 | above, during construction to verify proper installation and
23 | maintenance of required erosion and sediment controls.
24 | Enforce as necessary based on the inspection.

25 | Inspect all ~~permitted~~ development sites that meet the thresholds
26 | in S5.C.5.~~ab~~.i., upon completion of construction and prior to
27 | final approval ~~or/~~ occupancy to ~~ensure~~verify ~~verify~~ proper
28 | installation of permanent ~~erosion controls and~~ stormwater
29 | facilities, ~~including LID/~~ BMPs. Enforce as necessary based on
30 | the inspection. A maintenance plan shall be developed for
31 | permanent stormwater ~~treatment and flow control~~
32 | ~~facilities/~~BMPs/~~facilities~~ and responsibility for maintenance
33 | shall be assigned.

34 | (4) Compliance with the above inspection requirements shall be
35 | determined by the presence of an established inspection
36 | program designed to inspect all sites involving land disturbing
37 | activity that meet the thresholds in S5.C.5.a.i. Compliance
38 | during this permit term shall be determined by achieving at
39 | least 80% of scheduled inspections. The inspections may be
40 | combined with other inspections provided they are performed
41 | using qualified personnel.

- 1 (5) The program shall include a procedure for keeping records of
2 inspections and enforcement actions by staff, including
3 inspection reports, warning letters, notices of violations, and
4 other enforcement records. Records of maintenance inspections
5 and maintenance activities shall be maintained.
- 6 (6) The program shall include an enforcement strategy to respond
7 to issues of non-compliance.

8 vi. ~~No later than the effective date of this permit, t~~The Permittee shall
9 make available, ~~as applicable,~~ the "Notice of Intent for Construction
10 Activity" and/or copies of the "Notice of Intent for Industrial
11 Activity" to representatives of proposed new development and
12 redevelopment. Permittees will continue to enforce local ordinances
13 controlling runoff from sites that are covered by other stormwater
14 permits issued by Ecology.

15 ~~vii. No later than 18 months after the effective date of this permit, e~~Each
16 permittee shall ensure that all staff whose primary job duties are
17 implementing the program to Control Stormwater Runoff from New
18 Development, Redevelopment, and Construction Sites, including
19 permitting, plan review, construction site inspections, and
20 enforcement, are trained to conduct these activities. As determined
21 necessary by the Permittee, follow-up training shall be provided to
22 address changes in procedures, techniques or staffing. Permittees
23 shall document and maintain records of the training provided and the
24 staff trained.

25 b. Low impact development code-related requirements:

26 i. No later than ~~June 30, 2015~~ ~~December 31, 2014~~, Permittees shall
27 review and revise their local development-related codes, rules,
28 standards, or other enforceable documents to incorporate and require
29 Low Impact Development (LID) Principles and LID Best
30 Management Practices (BMPs). The intent of the revisions shall be
31 to make LID the-preferred and commonly-used approach to site
32 development. In reviewing the local codes, rules, standards, or other
33 enforceable documents, Permittees shall identify opportunities to
34 minimize impervious surfaces, native vegetation loss, and
35 stormwater runoff in all types of development situations. Permittees
36 shall conduct a review and revision process similar to the steps and
37 range of issues outlined in the following document: *Integrating LID*
38 *into Local Codes: A Guidebook for Local Governments* (Puget
39 Sound Partnership, 2011).

40 In the case of circumstances beyond the Permittee's control, such as
41 litigation or administrative appeals that may result in noncompliance
42 with the requirements of this section, the Permittee shall promptly
43 notify Ecology and submit a written request for an extension.

1 Extensions shall be granted by Ecology for a reasonable length of
2 time appropriate to the circumstances (for example, the duration of
3 litigation or administrative appeal) without penalty and permit
4 modifications shall not be necessary for such extensions.

5 ii. Each Permittee shall submit a summary of the results of the review
6 and revision process in i above with the ~~Second~~ Third Year Annual
7 Report⁵. This summary shall include, at a minimum, a list of the
8 participants, the codes, rules, standards, and other enforceable
9 documents reviewed, and the amendments made to those documents
10 which incorporate and require LID Principles and LID BMPs.
11 Identified amendments shall include previously adopted amendments
12 to require LID Principles and LID BMPs in development-related
13 codes. The description of amendments shall be organized as follows:

14 (1) Measures to minimize impervious surfaces.

15 (2) Measures to minimize loss of native vegetation.

16 (3) Measures to minimize stormwater runoff.

17 c. Watershed scale stormwater planning requirements:

18 i. No later than December 31, 2013, each County Permittee listed
19 below shall select one watershed from the following list in which to
20 conduct detailed stormwater basin planning:

21 • Clark County: Whipple, Salmon

22 • King County: Bear, Covington, Evans, Issaquah, Jenkins,
23 May, Soos

24 • Pierce County: Clover, Mashel

25 • Snohomish County: Quilceda, Little Bear, Portage

26 ii. Each County Permittee shall convene and lead a process involving
27 other Permittees subject to a municipal stormwater permit as well as
28 other cities and counties with areas of their jurisdiction in the
29 watershed selected in i., above. This process shall begin no later
30 than February 2, 2014. The process shall develop a watershed scale
31 stormwater basin plan for the watershed identified in i. above that
32 has the goal of accommodating growth and maintaining beneficial
33 uses. The planning process shall include:

⁵ The ~~Second~~ Third Year Annual Report covering calendar year ~~2014~~ 2015 is due no later than March 31, ~~2015~~ 2016.

- (1) An assessment of baseline conditions of water bodies, including but not limited to biota, habitat, beneficial uses, water quality conditions, and hydrologic conditions.
- (2) Identification of watershed conditions requiring special attention. For example: preservation of headwater wetlands or critical aquifer recharge areas.
- (3) An analysis of flows and water quality conducted at the appropriate scale. The analysis shall quantify estimated changes using computer modeling and best available science.
- (4) Identification of impacts to beneficial uses from existing development, and predicated impacts from future development at full build-out under existing or proposed comprehensive land use management plans.
- (5) Identification of changes to codes, rules, standards, and plans to address harmful impacts to beneficial uses and comply with antidegradation provisions of state and federal statutes and rules.
- (6) Identification of structural retrofit actions to address harmful impacts to designated beneficial uses.
- (7) Identification of other actions such as non-regulatory actions including, but not limited to, land acquisition or restoration actions to address harmful impacts to beneficial uses.
- (8) An implementation plan that identifies a schedule of actions, responsible parties, estimated costs, and funding strategies.

iii. The planning may include:

- (1) Evaluation of the need for basin-specific stormwater control requirements, and identification of appropriate changes to stormwater requirements as allowed by Section 7 of Appendix 1.
- (2) Evaluation and identification of strategies to encourage redevelopment and infill, and an assessment of options for efficient, effective runoff controls for redevelopment projects, such as regional facilities, in lieu of individual site requirements.

iv. Minimum Performance Measures

- (1) By February 2, 2014, establish a schedule for conducting the stormwater planning required under this section.

- (2) Each County Permittee must solicit public review and comment on the draft watershed-scale stormwater plan.
- (3) Submit the final plan to Ecology no later than August 1, 2016. The plan must identify recommended capital improvements, regulatory, programmatic, and land use actions as appropriate for meeting plan objectives.
- (4) The plan shall include a schedule of actions, responsible parties, estimated costs, and funding strategies.

6. Structural Stormwater Controls

~~Each Permittee~~The SWMP shall ~~include~~ implement a ~~program to construct~~ structural stormwater controls program to prevent or reduce impacts to waters of the state caused by discharges from the MS4. Impacts that shall be addressed include disturbances to watershed hydrology and stormwater pollutant discharges.

The program shall consider impacts caused by stormwater discharges from areas of existing development, including runoff from highways, streets and roads owned or operated by the Permittee, and areas of new development, where impacts are anticipated as development proceeds.

Minimum Performance Measures:

a. The program shall address impacts that are not adequately controlled by the other required actions of the SWMP, ~~and shall provide proposed projects and an implementation schedule.~~

i. ~~The program shall consider the following~~ construction of projects ~~such as:~~

- (1) New flow control facilities.
- (2) New water quality treatment facilities.
- (3) Retrofitting of existing stormwater facilities.
- (4) Property acquisition to provide additional water quality and/or flow control benefits.
- (5) New LID BMPs or application of LID Principles.
- (6) Maintenance with capital construction costs \geq \$25,000.
- (7) High Efficiency street sweeping

ii. ~~regional flow control facilities; water quality treatment facilities; facilities to trap and collect contaminated particulates; retrofitting of existing stormwater facilities; and rights-of-way, or other property~~

1 acquisition to provide additional water quality and flow control
2 benefits. Permittees should also consider other means to address
3 impacts, such as:

4 (1) ~~reduction or prevention of hydrologic changes through the use~~
5 ~~of on-site (infiltration and dispersion) stormwater management~~
6 ~~BMPs and site design techniques, ~~r~~riparian habitat~~
7 ~~acquisition.~~

8 (2) ~~or ~~r~~Restoration of forest cover and/or riparian buffers, for~~
9 ~~compliance with this requirement.~~

10 (3) Other projects to address stormwater runoff into or from the
11 MS4 MS3 owned or operated by the permittee and not
12 otherwise required in S5.C.

13 iii. Permittees may not use in-stream culvert replacement or channel
14 restoration projects for compliance with this requirement.

15 b. ~~Minimum Performance Measures:~~

16 i. ~~No later than 1 year after the effective date of this permit, each~~
17 ~~Permittee shall develop a Structural Stormwater Control program~~
18 ~~designed to control stormwater impacts that are not adequately~~
19 ~~controlled by other required actions of the SWMP. Implementation~~
20 ~~of the program shall begin no later than 18 months after the effective~~
21 ~~date of this permit. Permittees shall provide a list of planned~~
22 ~~individual projects that are scheduled for implementation during the~~
23 ~~term of this permit and describe how the selected projects comply~~
24 ~~with AKART and MEP requirements. Updates and revisions to the~~
25 ~~list will be provided in the annual report and will address any~~
26 ~~concerns identified by Ecology during its review of the Structural~~
27 ~~Stormwater Control program.~~

28 ii.iv. The Structural Stormwater Control program may also include a
29 program designed to implement small scale projects that are not
30 planned in advance.

31 e.b. Each Permittee's SWMPR shall describe ~~include a description of the~~
32 ~~Structural Stormwater Control Program in the written documentation of~~
33 ~~their SWMP. The description of the Structural Stormwater Control~~
34 ~~Program shall include~~ing the following:

35 i. The ~~goals that the~~ Structural Stormwater Control Program goals are
36 intended to achieve.

37 ii. The planning process used to develop the Structural Stormwater
38 Control Program, including:

39 (1) ~~t~~The geographic scale of the planning process.

- (2) ~~the~~ Issues and regulations addressed.
- (3) ~~the~~ Steps in the planning process.
- (4) ~~the~~ Types of characterization information considered.
- (5) ~~the~~ Amount budgeted for implementation.
- (1)(6) ~~and~~ The public involvement process.
- (2)(7) A description of the prioritization process, procedures and criteria used to select the Structural Stormwater Control projects.

ii. ~~For planned individual projects, and programs of small projects, provide the following information:~~

iii. ~~The estimated pollutant load reduction that will result from each project designed to provide stormwater treatment.~~

iv. ~~The expected outcome of each project designed to provide flow control.~~

v. ~~Any other expected environmental benefits.~~

vi. ~~If planned, monitoring or evaluation of the project and monitoring/evaluation results.~~

c. Each Permittee’s annual report must provide an annually updated or revised list of planned, individual projects scheduled for implementation during this permit term. This list must include at a minimum the information and formatting specified in Appendix 11.

~~Information about the Structural Stormwater Control Program shall be updated with each annual report.~~

7. Source Control Program for Existing Development

a. ~~The Permittee shall implement~~SWMP shall include a program to reduce pollutants in runoff from areas that discharge to municipal separate storm sewers owned or operated by the Permittee. The program shall include the following:

i. Application of operational and structural source control BMPs, and, if necessary, treatment BMPs/facilities to pollution generating sources associated with existing land uses and activities.

ii. Inspections of pollutant generating sources at commercial, industrial and multifamily properties to enforce implementation of required BMPs to control pollution discharging into municipal separate storm sewers owned or operated by the Permittee.

1 iii. Application and enforcement of local ordinances at applicable sites,
2 including sites with discharges authorized by a separate National
3 Pollutant Discharge Elimination System or State Waste Discharge
4 permit that are covered by other stormwater permits issued by
5 Ecology. Permittees that are in compliance with the terms of this
6 permit will not be held liable by Ecology for water quality standard
7 violations or receiving water impacts caused by industries and other
8 Permittees covered, or which should be covered under an NPDES
9 permit issued by Ecology. Permittees that are in compliance with the
10 terms of this permit will not be held liable by Ecology for water
11 quality standard violations or receiving water impacts caused by
12 industries and other Permittees covered, or which should be covered
13 under an NPDES permit issued by Ecology.

14 iv. Reduction of pollutants associated with the application of pesticides,
15 herbicides, and fertilizer discharging into municipal separate storm
16 sewers owned or operated by the Permittee.

17 b. Minimum Performance Measures ~~for Source Control Program:~~

18 i. ~~No later than 18 months after the effective date of this permit, adopt~~
19 ~~and begin~~ Permittees shall implement a program to enforcement of
20 ~~an~~ ordinance(s), or other enforceable documents, requiring the
21 application of source control BMPs for pollutant generating sources
22 associated with existing land uses and activities (See Appendix 8 to
23 identify pollutant generating sources).

24 Permittees shall update the ordinance(s), or other enforceable
25 documents, as necessary to meet the requirements of this section no
26 later than February 2, 2018.

27 The requirements of this subsection are met by using the source
28 control BMPs in Volume IV of the 2012~~05~~ *Stormwater Management*
29 *Manual for Western Washington*, or a functionally equivalent
30 manual approved by Ecology.

31 ii. ~~Ecology review and approval of the ordinance, or other enforceable~~
32 ~~documents, and source control program is required. Each Permittee~~
33 ~~shall submit the proposed source control program and all necessary~~
34 ~~documentation to Ecology for review, no later than 12 months after~~
35 ~~the effective date of this permit. If Ecology does not request changes~~
36 ~~within 60 days, the proposed source control BMPs are considered~~
37 ~~approved.~~

38 Operational source control BMPs shall be required for all pollutant
39 generating sources. Structural source control BMPs shall be required
40 for pollutant generating sources if operational source control BMPs
41 do not prevent illicit discharges or violations of surface water,
42 ground water, or sediment management standards because of

1 inadequate stormwater controls. Implementation of source control
2 requirements may be done through education and technical
3 assistance programs, provided that formal enforcement authority is
4 available to the Permittee and is used as determined necessary by the
5 Permittee, in accordance with S5.C.7.b.iv., below.

6 ~~iii.~~ii. ~~Permittees shall No later than 18 months after the effective date of~~
7 ~~this permit, establish/~~implement a program to identify sites which are
8 potentially pollution generating. The program shall include:

9 ~~(1)~~—Inventory or listing of ~~sites the land uses/businesses using~~
10 ~~representing~~ the categories of land uses and businesses in
11 Appendix 8. The Permittee shall ~~annually/periodically, and at~~
12 ~~least once during the permit~~ periodically update the inventory
13 ~~as new businesses are identified and business~~
14 ~~ownership/management and responsibilities change.~~

15 ~~(2)~~(1) Complaint-based response to identify other pollutant
16 generating sources, such as mobile or home-based businesses.

17 ~~iv.~~iii. ~~Starting no later than 24 months after the effective date of this~~
18 ~~permit, Permittees shall~~ implement an ~~audit/~~inspection program for
19 sites identified pursuant to S5.C.7.b.ii. above.

20 (1) All identified sites with a business address shall be provided,
21 by mail, telephone, or in person, information about activities
22 that may generate pollutants and the source control
23 requirements applicable to those activities. This information
24 may be provided all at one time or spread out over ~~the last~~
25 ~~three years of~~ the permit term to allow for some tailoring and
26 distribution of the information during site inspections.
27 Businesses may self-certify compliance with the source control
28 requirements at the discretion of the Permittee.

29 ~~(1)~~(2) The Permittee shall inspect 20% of ~~the sites identified~~
30 ~~pursuant to S5.C.7.b.ii~~ ~~se-listed sites annually~~ to assure BMP
31 effectiveness and compliance with source control requirements.
32 The Permittee may select which sites to inspect each year and
33 is not required to inspect 100% of sites over a 5-year period.
34 Sites may be prioritized for inspection based on their land use
35 category, potential for pollution generation, proximity to
36 receiving waters, or to address an identified pollution problem
37 within a specific geographic area or sub-basin. The Permittee
38 may count ~~up to two~~ follow up compliance inspections ~~(i.e.,~~
39 ~~inspections conducted to assure previously-identified~~
40 ~~corrective actions are adopted)~~ at the same site toward the 20%
41 inspection rate.

1 | (2)(3) Each Permittee shall inspect 100% of sites identified
2 | through legitimate complaints.

3 | ~~v. iv. No later than 24 months after the effective date of this permit, e~~Each
4 | Permittee shall implement a progressive enforcement policy to
5 | require sites to come into compliance with stormwater requirements
6 | within a reasonable time period as specified below:

7 | (1) If the Permittee determines, through inspections or otherwise,
8 | that a site has failed to adequately implement required BMPs,
9 | the Permittee shall take appropriate follow-up action(s) which
10 | may include: phone calls, reminder letters or follow-up
11 | inspections.

12 | (2) When a Permittee determines that a facility has failed to
13 | adequately implement BMPs after a follow-up inspection, the
14 | Permittee shall take ~~further~~ enforcement action as established
15 | through authority in its municipal code and ordinances, or
16 | through the judicial system.

17 | (3) Each Permittee shall maintain records, including
18 | documentation of each site visit, inspection reports, warning
19 | letters, notices of violations, and other enforcement records,
20 | demonstrating an effort to bring facilities into compliance.
21 | Each Permittee shall also maintain records of sites that are not
22 | inspected because the property owner denies entry.

23 | (4) ~~A Permittee shall contact Ecology immediately upon~~
24 | ~~discovering a source control violation that presents a severe~~
25 | ~~threat to human health or the environment.~~ A Permittee may
26 | refer non-emergency violations of local ordinances to Ecology,
27 | provided, the Permittee also makes a documented effort of
28 | progressive enforcement. At a minimum, a Permittee's
29 | enforcement effort shall include documentation of inspections
30 | and warning letters or notices of violation.

31 | v. Permittees shall develop and implement a regular training program
32 | that ensures all designed to accomplish that all staff, whose primary
33 | job duties are implementing the source control program, are
34 | qualified and trained to conduct these activities.

35 | (1) Staff shall be trained at least annually with topics covering the
36 | legal authority for source control, source control BMPs and
37 | their proper application, inspection protocols, lessons learned,
38 | typical cases, and enforcement procedures.

39 | (2) Staff shall be evaluated annually on topics taught during the
40 | annual training.

41 | (3) Records of attendance and evaluation results shall be kept.

1 vi. ~~No later than 24 months after the effective date of this permit, each~~
2 ~~Permittee shall ensure that all staff whose primary job duties are~~
3 ~~implementing the source control program are trained to conduct~~
4 ~~these activities. The training shall cover the legal authority for source~~
5 ~~control (adopted codes, ordinances, rules, etc.), source control BMPs~~
6 ~~and their proper application, inspection protocols, and enforcement~~
7 ~~procedures. Follow-up training shall be provided as needed to~~
8 ~~address changes in procedures, techniques or staffing. Permittees~~
9 ~~shall document and maintain records of the training provided and the~~
10 ~~staff trained.~~

11 8. Illicit Connections and Illicit Discharges Detection and Elimination

12 The SWMP shall include an ongoing program to identify, detect, remove and
13 prevent illicit connections and illicit discharges, including spills ~~including spills,~~
14 into the MS4 municipal separate storm sewers owned or operated by the
15 Permittee ~~municipal separate storm sewers owned or operated by the Permittee.~~

16 Minimum Performance Measures:

- 17 a. ~~No later than the effective date of this permit, e~~Each Permittee shall
18 continue implementing an on-going program to prevent, identify and
19 respond to illicit connections and illicit discharges into the MS3s owned or
20 operated by the Permittee. The program shall include procedures for
21 reporting and correcting or removing illicit connections, spills and other
22 illicit discharges into the MS3s owned or operated by the Permittee when
23 they are suspected or identified. ~~No later than 24 months after the effective~~
24 ~~date of this permit, each permittee shall develop~~ The program shall also
25 include procedures for addressing pollutants entering the MS⁴³ from an
26 interconnected, adjoining MS⁴³.

27 Illicit connections and illicit discharges shall be identified through field
28 screening, inspections, complaints/reports, construction inspections,
29 maintenance inspections, source control inspections, and/or monitoring
30 information, as appropriate.

- 31 b. No later than ~~18 months after the effective date of this permit~~ February 2,
32 2018, each Permittee shall evaluate, and if necessary update, existing
33 ordinances or other regulatory mechanisms to effectively prohibit non-
34 stormwater, illicit discharges, including spills, into the Permittee's
35 municipal separate storm sewer system.

- 36 i. Allowable Discharges: The ordinance or other regulatory mechanism
37 does not need to prohibit the following categories of non-stormwater
38 discharges:

- 39 (1) Diverted stream flows;
40 (2) Rising ground waters;

- (3) Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20));
- (4) Uncontaminated pumped ground water;
- (5) Foundation drains;
- (6) Air conditioning condensation;
- (7) Irrigation water from agricultural sources that is commingled with urban stormwater;
- (8) Springs;
- (9) Water from crawl space pumps;
- (10) Footing drains; ~~and~~
- (11) Flows from riparian habitats and wetlands.
- (12) Non-stormwater discharges authorized by another NPDES or State Waste Discharge permit
- (13) Discharges that occur during associated with emergency fire fighting activities

~~(11)~~(14) Chlorinated water discharges that occur during emergency utility repair

ii. Conditionally Allowable Discharges: The ordinance or other regulatory mechanism, ~~shall prohibit~~ may allow the following categories of non-stormwater discharges ~~unless only if~~ the stated conditions are met:

- (1) Discharges from potable water sources; including, but not limited to, water line flushing, *hyperchlorinated* water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be dechlorinated to a concentration of 0.1 ppm or less total chlorine, pH-adjusted if necessary, and volumetrically and velocity controlled to prevent resuspension of sediments in the MS4;
- (2) Discharges from lawn watering and other irrigation runoff. These discharges shall be minimized through, at a minimum, public education activities (see S5.C.10) and water conservation efforts.
- (3) Dechlorinated swimming pool, spa, and hot tub 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. Discharges shall be thermally

1 controlled to prevent an increase in temperature of the
2 receiving water. Swimming pool cleaning wastewater and filter
3 backwash shall not be discharged to the MS4.

- 4 (4) Street and sidewalk wash water, water used to control dust, and
5 routine external building washdown that does not use
6 detergents. The Permittee shall reduce these discharges
7 through, at a minimum, public education activities (see
8 S5.C.10.) and/or water conservation efforts. To avoid washing
9 pollutants into the MS4, Permittees shall minimize the amount
10 of street wash and dust control water used. At active
11 construction sites, street sweeping shall be performed prior to
12 washing the street.
- 13 (5) Other non-stormwater discharges. Other non-stormwater
14 discharges shall be in compliance with the requirements of a
15 stormwater pollution prevention plan reviewed by the
16 Permittee which addresses such discharges.

17 ~~iii. The Permittee's SWMP shall, at a minimum, address each category~~
18 ~~in (2) above in accordance with the conditions stated therein.~~

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

22 ~~iii. Non-stormwater discharges covered by another NPDES permit and~~
23 ~~discharges from emergency fire fighting activities are allowed in the~~
24 ~~MS4 in accordance with S2 Authorized Discharges~~

25 c. Each Permittee shall implement an ongoing program to identify and detect
26 non-stormwater discharges and illicit connections into the Permittee's
27 MS3 owned or operated by the Permittee MS4. The program shall include
28 the following components:

29 i. Procedures for conducting investigations of the Permittees into the
30 MS3 owned or operated by the Permittee MS4 for the purpose of
31 detecting illicit discharges and illicit connections. Each Permittee
32 shall conduct on-going screening to detect illicit connections. The
33 program shall include field screening and methods for identifying
34 potential sources tracing; and may also include source control
35 inspections and complaint response. The permittee shall implement a
36 field screening methodology appropriate to the characteristics of the
37 MS4 and water quality concerns. To comply with the requirement
38 the Permittee Screening for illicit connections may be use conducted
39 using the methods identified in the *Illicit Discharge Detection and*
40 *Elimination: A Guidance Manual for Program Development and*
41 *Technical Assessments*, Center for Watershed Protection, October
42 2004; or another method of comparable or improved effectiveness.

1 field screening methods approved by Ecology in a Stormwater
2 Management Program under a prior Phase I municipal stormwater
3 NPDES permit, provided the approved methods include field
4 screening and source tracing. If another method of field screening is
5 developed and implemented the Permittee shall document the field
6 screening methodology in the relevant Annual Report.

7 (1) Each City covered under this permit shall prioritize
8 conveyances and outfalls and complete field screening for the
9 remaining unscreened 40% of the conveyance systems within
10 the Permittee's incorporated area no later than **December 31,**
11 **2017.** ~~August 1, 2017.~~

12 ~~Beginning August 1, 2017,~~ **Beginning January 1, 2018,** City
13 Permittees shall implement an ongoing field screening program
14 that results in routine annual field screening of approximately
15 **12%** ~~20%~~ of the Permittee's MS4.

16 (2) Each County covered under this permit shall prioritize outfalls
17 and conveyances in urban/higher density rural sub-basins for
18 screening and shall complete field screening for at least the
19 remaining unscreened half of the conveyance systems in these
20 areas no later than 4 years from the effective date of this
21 permit. In addition, Counties shall complete field screening in
22 at least 1 additional rural sub-basin no later than **August 1,**
23 **2017.**

24 Beginning August 1, 2017, County Permittees shall implement
25 an ongoing field screening program that results in routine
26 annual field screening of approximately 20% of the Permittee's
27 urban/higher density rural sub-basin's MS4 infrastructure and
28 at least 1 rural sub-basin's MS4 infrastructure.

29 ii. ~~Each Permittee shall provide a~~ publicly-listed and publicized
30 hotline or other, ~~water quality citizen complaints/reports telephone~~
31 number, for public reporting of spills and other illicit discharges.
32 ~~Except for Clark County, which shall meet this requirement no later~~
33 ~~than 6 months from the effective date of this permit, this citizen~~
34 ~~complaint/reports telephone number shall be in place no later than~~
35 ~~the effective date of this permit. Complaints shall be responded to in~~
36 ~~accordance with S5.C.8.b.vii. and viii., below.~~

37 v. ~~No later than 18 months after the effective date of this permit, each~~
38 ~~Permittee shall ensure that all municipal field staff who are~~
39 ~~responsible for identification, investigation, termination, cleanup,~~
40 ~~and reporting of illicit discharges, including spills, improper disposal~~
41 ~~and illicit connections, are trained to conduct these activities.~~
42 ~~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.~~

iii. ~~No later than 24 months after the effective date of this permit, develop and implement a~~An ongoing training program 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 a MS4 storm sewer system, shall be trained~~MS3 owned or operated by the permittee on the identification of an illicit discharge ~~and/or connection, and on the proper procedures for reporting and responding, as appropriate, to the illicit discharge and/or connection. Follow-up training shall be provided as needed to address changes in procedures, techniques, requirements, or staffing. Permittees shall document and maintain records of the trainings~~ provided and the staff trained.

~~Permittees shall address all illicit discharges identified by municipal field staff in accordance with the provisions in S5.C.8.d.~~

~~vi. Each Permittee shall provide a publicly listed, water quality citizen complaints/reports telephone number. Except for Clark County, which shall meet this requirement no later than 6 months from the effective date of this permit, this citizen complaint/reports telephone number shall be in place no later than the effective date of this permit. Complaints shall be responded to in accordance with S5.C.8.b.vii. and viii., below.~~

~~e. Each Permittee shall conduct on-going screening to detect illicit connections. The program shall include field screening and source tracing; and may also include source control inspections and complaint response. To comply with the requirement the Permittee may use the methods identified in Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, October 2004; or field screening methods approved by Ecology in a Stormwater Management Program under a prior Phase I municipal stormwater NPDES permit, provided the approved methods include field screening and source tracing.~~

~~d. Each City covered under this permit shall prioritize conveyances and outfalls and complete field screening for at least 60% of the conveyance systems within the Permittee's incorporated area no later than 5 years from the effective date of the permit.~~

~~(1) Each County covered under this permit shall prioritize outfalls and conveyances in urban/higher density rural sub-basins for screening and shall complete field screening for at least half of the conveyance systems in these areas no later than 5 years from the effective date of this permit. In addition, Counties~~

1 shall complete field screening in at least 1 rural sub-basin no
2 later than 5 years from the effective date of this permit.

3 e.-d. Response to Illicit Connections Each Permittee shall implement an ongoing
4 program to address illicit discharges, including spills, and illicit
5 connections into MS3s owned or operated by the Permittee ~~MS4~~. The
6 program shall include:

7 i. Procedures for characterizing the nature of, and potential public or
8 environmental threat posed by, any illicit discharges into the MS3
9 owned or operated by the Permittee found by or reported to the
10 Permittee. Procedures shall include detailed instructions for
11 evaluating whether the discharge must be immediately contained and
12 steps to be taken for containment of the discharge.

13 ii. Procedures for tracing the source of an illicit discharge into the MS3
14 owned or operated by the Permittee; including visual inspections,
15 and when necessary, opening manholes, using mobile cameras,
16 collecting and analyzing water samples, and/or other detailed
17 inspection procedures.

18 i. Procedures for eliminating the discharge; including notification of
19 appropriate authorities; notification of the property owner; technical
20 assistance; follow-up inspections; and escalating enforcement and
21 legal actions if the discharge is not eliminated.

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

24 (1) Immediately Upon becoming aware, immediately evaluate and
25 promptly respond to all illicit discharges, including spills, into
26 the MS3 owned or operated by the Permittee which are
27 determined to constitute a threat to human health, welfare, or
28 the environment in accordance with the criteria developed
29 pursuant to provision d.i. above ~~General Condition G3~~, or are
30 otherwise judged to be urgent.

31 (2) Investigate (or refer to the appropriate agency with authority to
32 act) within 7 days, on average, any complaints, reports or
33 monitoring information that indicates a potential illicit
34 discharge into the MS3 owned or operated by the Permittee.

35 (3) For all illicit connections into the MS3 owned or operated by
36 the Permittee, initiate an investigation within 21 days of any
37 report or discovery of a suspected illicit connection to
38 determine the source of the connection, the nature and volume
39 of discharge through the connection, and the party responsible
40 for the connection.

1 9. Operation and Maintenance Program

2 ~~The SWMPEach~~ Each Permittee shall ~~include~~ implement a program to regulate
3 maintenance activities and to conduct maintenance activities by the Permittee
4 ~~that to~~ prevent or reduce stormwater impacts. The program shall include:

- 5 ~~i. Maintenance standards and programs for proper and timely maintenance of~~
6 ~~public and private stormwater facilities.~~
- 7 ~~ii. Practices for operating and maintaining Permittee's streets, roads, and highways~~
8 ~~to reduce stormwater impacts.~~
- 9 ~~iii. Policies and procedures to reduce pollutants associated with the application of~~
10 ~~pesticides, herbicides, and fertilizer by the Permittee's agencies or departments.~~
- 11 ~~iv. Practices for reducing stormwater impacts from heavy equipment maintenance~~
12 ~~or storage yards, and from material storage facilities owned or operated by the~~
13 ~~Permittee.~~
- 14 ~~v. A training component.~~

15 Minimum Performance Measures:

- 16 a. Maintenance Standards. ~~No later than 18 months after the effective date of~~
17 ~~this permit, e~~ Each Permittee shall ~~establish~~ implement maintenance
18 standards for public and private stormwater facilities/BMPs that are as
19 protective, or more protective, of facility function than those specified in
20 Chapter 4 of Volume V of the 201205 *Stormwater Management Manual*
21 *for Western Washington*. For ~~existing~~ facilities which do not have
22 maintenance standards, the Permittee shall develop a maintenance
23 standard. No later than December 31, 2014, June 30, 2015 each Permittee
24 shall update their maintenance standards as necessary to meet the
25 requirements in this section.

- 26 i. The purpose of the maintenance standard is to determine if
27 maintenance is required. The maintenance standard is not a measure
28 of the facility's required condition at all times between inspections.
29 Exceeding the maintenance standard between inspections and/or
30 maintenance is not a permit violation.
- 31 ii. Unless there are circumstances beyond the Permittee's control, when
32 an inspection identifies an exceedence of the maintenance standard,
33 maintenance shall be performed:
- 34 (1) Within 1 year for typical maintenance of facilities, except catch
35 basins.
- 36 (2) Within 6 months for catch basins, ~~and~~
- 37 (3) Within 2 years for maintenance that requires capital
38 construction of less than \$25,000.

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

7 b. Maintenance of stormwater facilities regulated by the Permittee

- 8 i. ~~No later than 18 months after the effective date of this permit, e~~Each
9 Permittee shall evaluate and, if necessary, update existing ordinances
10 or other enforceable documents requiring maintenance of all
11 permanent stormwater treatment and flow control BMPs/facilities
12 and catch basins regulated by the Permittee ~~(including catch basins)~~,
13 in accordance with maintenance standards established under
14 S5.C.9.ab.i., above.

15 ~~No later than 18 months after the effective date of this permit, each~~
16 ~~Permittee shall develop and implement an initial inspection~~
17 ~~schedule for all known, permanent stormwater treatment and flow~~
18 ~~control facilities (other than catch basins) regulated by the Permittee~~
19 ~~to inspect each facility at least once during the term of this permit to~~
20 ~~enforce compliance with adopted maintenance standards as needed~~
21 ~~based on the inspection. The inspection program is limited to~~
22 ~~facilities to which the Permittee can legally gain access, provided~~
23 ~~the Permittee shall seek access to the types of stormwater treatment~~
24 ~~and flow control facilities listed in the 2005 Stormwater~~
25 ~~Management Manual for Western Washington.~~

- 26 ii. ~~No later than 4 years after the effective date of this permit, e~~Each
27 Permittee shall ~~develop~~ implement an on-going inspection ~~schedule~~
28 program to annually inspect all stormwater treatment and flow
29 control BMPs/facilities ~~(other than catch basins)~~ regulated by the
30 Permittee. ~~The annual inspection requirement may be reduced based~~
31 ~~on maintenance records. The inspection program is limited to~~
32 facilities to which the Permittee can legally gain access, provided the
33 Permittee shall seek access to all stormwater treatment and flow
34 control BMPs/facilities.

- 35 iii. Permittees may R ~~reducing~~ the inspection frequency ~~to less~~
36 ~~frequently than annually shall be~~ based on maintenance records of
37 double the length of time of the proposed inspection frequency. In
38 the absence of maintenance records, the Permittee may substitute
39 written statements to document a specific less frequent inspection
40 schedule. Written statements shall be based on actual inspection and
41 maintenance experience and shall be certified in accordance with
42 G19 *Certification and Signature*.

- 1 | iv. ~~No later than 2 years after the effective date of this permit e~~Each
2 | Permittee shall manage maintenance activities to inspect all ~~new~~
3 | permanent stormwater treatment and flow control ~~BMPs/facilities,~~
4 | ~~including and~~ catch basins, in new residential developments every 6
5 | months, ~~until 90% of the lots are constructed,~~ ~~during the period of~~
6 | ~~heaviest construction~~ ~~during the period of heaviest construction to~~
7 | identify maintenance needs and enforce compliance with
8 | maintenance standards as needed.
- 9 | v. Compliance with the inspection requirements of S5.C.9.b.ii. ~~(2), (32),~~
10 | and ~~iv(43),~~ above, shall be determined by the presence of an
11 | established inspection program designed to inspect all sites, and
12 | achieving inspection of 80% of all sites.
- 13 | vi. The Permittee shall require cleaning of catch basins regulated by the
14 | Permittee if they are found to be out of compliance with established
15 | maintenance standards in the course of inspections conducted at
16 | facilities under the requirements of S5.C.7. (Source Control
17 | Program), and S5.C.8. (Illicit Connections and Illicit Discharges
18 | Detection and Elimination), or if the catch basins are part of the
19 | ~~treatment or flow control systems~~ ~~stormwater facilities~~ inspected
20 | under the requirements of S5.C.9. (Operation and Maintenance
21 | Program).
- 22 | c. Maintenance of stormwater facilities owned or operated by the Permittee
- 23 | i. ~~No later than 24 months after the effective date of this permit e~~Each
24 | Permittee shall ~~begin~~ ~~implementing~~ a program to annually inspect all
25 | permanent stormwater treatment and flow control ~~BMPs/facilities~~
26 | ~~(other than catch basins)~~ ~~(other than catch basins)~~ owned or operated
27 | by the Permittee; ~~Permittees shall~~ ~~and~~ implement appropriate
28 | maintenance action(s) in accordance with adopted maintenance
29 | standards. ~~The annual inspection requirement may be reduced based~~
30 | ~~on inspection records.~~
- 31 | ~~Permittees may reduce~~ ~~Changing~~ the inspection frequency ~~to less~~
32 | ~~frequently than annually shall be~~ based on maintenance records of
33 | double the length of time of the proposed inspection frequency. In
34 | the absence of maintenance records, the Permittee may substitute
35 | written statements to document a specific less frequent inspection
36 | schedule. Written statements shall be based on actual inspection and
37 | maintenance experience and shall be certified in accordance with
38 | *G19 Certification and Signature.*
- 39 | ii. ~~No later than 24 months after the effective date of this program~~
40 | ~~e~~Each Permittee shall ~~begin~~ ~~implementing~~ a program to conduct spot
41 | checks of potentially damaged permanent ~~stormwater~~ treatment and
42 | flow control ~~BMPs/facilities~~ ~~(other than catch basins)~~ ~~(other than~~
43 | ~~catch basins)~~ after major storm events ~~(24 hour storm event with a~~

1 | ~~10 year recurrence interval~~). If spot checks indicate widespread
2 | damage/maintenance needs, inspect all stormwater treatment and
3 | flow control facilities that may be affected. Conduct repairs or take
4 | appropriate maintenance action in accordance with maintenance
5 | standards established under S5.C.9.~~ab.i.~~, above, based on the results
6 | of the inspections.

7 | iii. Compliance with the inspection requirements of S5.C.9.~~b.iii.c.(1)i.~~,
8 | and ~~(2)ii.~~ above, shall be determined by the presence of an
9 | established inspection program designed to inspect all sites:
10 | ~~Compliance during this permit term shall be determined by and~~
11 | ~~achieving an annual rate of~~ at least 95% of required inspections ~~no~~
12 | ~~later than 180 days prior to the expiration date of this permit.~~

13 | d. Maintenance of Catch Basins Owned or Operated by the Permittee

14 | i. ~~No later than 24 months after the effective date of this permit e~~Each
15 | Permittee shall ~~begin implementing a program continue~~ to annually
16 | inspect catch basins and inlets owned or operated by the Permittee,
17 | except as provided below.

18 | ~~Inspections may be conducted on a “circuit basis” whereby a~~
19 | ~~sampling of catch basins and inlets within each circuit is inspected to~~
20 | ~~identify maintenance needs. Include in the sampling an inspection of~~
21 | ~~the catch basin immediately upstream of any system outfall. Clean~~
22 | ~~all catch basins within a given circuit for which the inspection~~
23 | ~~indicates cleaning is needed to comply with maintenance standards~~
24 | ~~established under S5.C.9.b.i., above.~~

25 | ~~As an alternative to inspecting catch basins on a “circuit basis,” the~~
26 | ~~Permittee may inspect all catch basins, and clean only catch basins~~
27 | ~~where cleaning is needed to comply with maintenance standards.~~

28 | The annual catch basin inspection schedule may be changed as
29 | appropriate to meet the maintenance standards based on maintenance
30 | records of double the length of time of the proposed inspection
31 | frequency. In the absence of maintenance records for catch basins,
32 | the Permittee may substitute written statements to document a
33 | specific, less frequent inspection schedule. Written statements shall
34 | be based on actual inspection and maintenance experience and shall
35 | be certified in accordance with G19 *Certification and Signature*.

36 | The following alternatives to the standard approach of inspecting
37 | catch basins every two years are allowed:

38 | (1) -Inspections at least once every two years may be conducted on
39 | a “circuit basis” whereby a sampling of catch basins and inlets
40 | within each circuit is inspected to identify maintenance needs.
41 | Include in the sampling an inspection of the catch basin

1 immediately upstream of any system outfall. Clean all catch
2 basins within a given circuit for which the inspection indicates
3 cleaning is needed to comply with maintenance standards
4 established under S5.C.9.a-b.i., above.

5 ~~(2) As an alternative to inspecting catch basins on a “circuit basis,”~~
6 ~~the Permittee may inspect all catch basins, and clean only catch~~
7 ~~basins where cleaning is needed to comply with maintenance~~
8 ~~standards.~~

9 ~~(3)(2) The Permittee may clean the entire MS4 within a circuit,~~
10 ~~including all conveyances and catch basins, once during the~~
11 ~~permit term.~~

12 ii. The disposal of decant water shall be in accordance with the
13 requirements in Appendix 6 – *Street Waste Disposal*.

14 ~~iii.~~ Compliance with the inspection requirements of S5.C.9.b-ivd.i.
15 above, shall be determined by the presence of an established
16 inspection program designed to inspect all catch basins and
17 achieving at least 95% of required inspections.

18 ~~e. Records of inspections and maintenance or repair activities conducted by~~
19 ~~the Permittee shall be maintained. Records of maintenance or repair~~
20 ~~requiring capital construction of \$25,000 or more shall be maintained and~~
21 ~~provided in the annual report.~~

22 ~~f. e. Within 12 months of the effective date of this permit, establish Each~~
23 ~~Permittee shall implement practices, policies, and procedures to reduce~~
24 ~~stormwater impacts associated with runoff from all lands owned or~~
25 ~~maintained by the Permittee, and road maintenance activities under the~~
26 ~~functional control of the Permittee. Lands owned or maintained by the~~
27 ~~Permittee include, but are not limited to: parking lots, streets, roads, and~~
28 ~~highways, buildings, parks, open space, road right-of-way, maintenance~~
29 ~~yards, and stormwater treatment and flow control BMPs/facilities. owned~~
30 ~~or operated by the Permittee; and road maintenance activities conducted~~
31 ~~by the Permittee.~~

32 ~~Implementation of practices shall begin no later than 18 months after the~~
33 ~~effective date of this permit, and continue on an ongoing basis throughout~~
34 ~~the term of the permit. The following activities shall be addressed:~~

- 35 i. Pipe cleaning
- 36 ii. Cleaning of culverts that convey stormwater in ditch systems
- 37 iii. Ditch maintenance
- 38 iv. Street cleaning
- 39 v. Road repair and resurfacing, including pavement grinding

- vi. Snow and ice control and disposal
- vii. Utility installation
- viii. Maintaining roadside areas, including vegetation management.
- ix. Dust control
- x. Pavement striping maintenance
- xi. Appropriate application of fertilizers, pesticides, and herbicides including reducing nutrients and pesticides using environmentally-friendly alternatives
- xii. Sediment and erosion control
- xiii. Landscape maintenance and vegetation disposal
- xiv. Trash and pet waste management

~~xv. Building exterior cleaning and maintenance~~

~~g. No later than 18 months after the effective date of this permit, each Permittee shall establish and implement policies and procedures to reduce pollutants in discharges from lands owned or maintained by the Permittee subject to this permit. Lands owned or maintained by the Permittee include but are not limited to: parks, open space, road right-of-ways, maintenance yards, and stormwater treatment and flow control facilities.~~

~~h. The policies and procedures shall address, but are not limited to:~~

~~i. Application of fertilizer, pesticides, and herbicides, including the development of Nutrient management and Integrated Pest Management Plans;~~

~~j. Sediment and erosion control;~~

~~k. Landscape maintenance and vegetation disposal;~~

~~l. Trash management; and~~

~~m. Building exterior cleaning and maintenance.~~

~~n.f. No later than 24 months after the effective date of this permit, develop and~~
~~i]implement an ongoing training program for employees of the Permittee who have primary construction, operations or maintenance job functions that could impact stormwater quality. The training program shall address the importance of protecting water quality, operation and maintenance standards, inspection procedures, selecting appropriate BMPs, ways to perform their job activities to prevent or minimize impacts to water quality, and procedures for reporting water quality concerns. Follow-up training shall be provided as needed to address changes in procedures,~~

1 techniques, requirements, or staffing. Permittees shall document and
2 maintain records of the training provided and the staff trained.

3 ~~g.~~ Develop and i Implement a Stormwater Pollution Prevention Plan
4 (SWPPP) for all heavy equipment maintenance or storage yards, and
5 material storage facilities owned or operated by the Permittee in areas
6 subject to this permit, that are not required to have coverage under the
7 *General NPDES Permit for Stormwater Discharges Associated with*
8 *Industrial Activities* or another NPDES permit that covers stormwater
9 discharges associated with the activity. ~~The Permittee shall identify~~
10 ~~facilities subject to this requirement. The SWPPPs shall be developed~~
11 ~~within 24 months of the effective date of this permit. Implementation of~~
12 ~~non-structural BMPs shall begin immediately after the pollution~~
13 ~~prevention plan is developed.~~ A schedule for implementation of structural
14 BMPs shall be included in the SWPPP. Generic SWPPPs that can be
15 applied at multiple sites may be used to comply with this requirement. The
16 SWPPP shall include periodic visual observation of discharges from the
17 facility to evaluate the effectiveness of BMPs.

18 ~~e-h.~~ Maintain records of inspections and maintenance or repair activities
19 conducted by the Permittee.

20 10. Education and Outreach Program

21 The SWMP shall include an education program aimed at residents, businesses,
22 industries, elected officials, policy makers, planning staff and other employees
23 of the Permittee. The goal of the education program is to reduce or eliminate
24 behaviors and practices that cause or contribute to adverse stormwater impacts.
25 An education program may be developed and implemented locally or
26 regionally.

27 Minimum Performance Measures:

28 ~~a.~~ No later than 12 months after the effective date of this permit, eEach
29 Permittee shall implement or participate in an education and outreach
30 program that uses a variety of methods to target the audiences and topics
31 listed below. The outreach program shall be designed to educate each
32 target audience about the stormwater problem and provide specific actions
33 they can follow to minimize the problem~~achieve measurable~~
34 ~~improvements in each target audience's understanding of the problem and~~
35 ~~what they can do to solve it.~~

36 ~~a-b.~~ Create stewardship opportunities and/or build on existing organizations to
37 encourage residents to participate in activities such as stream teams , storm
38 drain stenciling, volunteer monitoring, riparian plantings and education
39 activities).

40 ~~b-c.~~ Education and outreach efforts shall target the following audiences and
41 subject areas:

- 1 | i. General Public, including school age children.
- 2 | (1) General impacts of stormwater flows into surface waters.
- 3 | (2) Impacts from impervious surfaces.
- 4 | (3) Source control BMPs and environmental stewardship,
- 5 | programs and actions and opportunities in the areas of pet
- 6 | waste, vehicle maintenance, landscaping and buffers.
- 7 | ii. -General public and businesses, including home based and mobile
- 8 | businesses
- 9 | (1) BMPs for use and storage of automotive chemicals, hazardous
- 10 | cleaning supplies, carwash soaps and other hazardous
- 11 | materials.
- 12 | (2) Impacts of illicit discharges and how to report them.
- 13 | ~~(2)(3)~~ BMPs for equipment maintenance.
- 14 | iii. Homeowners, landscapers and property managers
- 15 | (1) Yard care techniques protective of water quality.
- 16 | (2) BMPs for use and storage of pesticides and fertilizers.
- 17 | (3) BMPs for carpet cleaning and auto repair and maintenance.
- 18 | (4) Low Impact Development principles and BMPs techniques,
- 19 | including site design, pervious paving, retention of forests and
- 20 | mature trees.
- 21 | (5) Stormwater facility maintenance Stormwater treatment and
- 22 | flow control BMPs.
- 23 | ~~(5)(6)~~ Dumpster maintenance for property owners.
- 24 | iv. Engineers, contractors, developers, review staff and land use
- 25 | planners
- 26 | (1) Technical standards for stormwater site and erosion control
- 27 | plans.
- 28 | (2) Low Impact Development principles and BMPs techniques,
- 29 | including site design, pervious paving, retention of forests and
- 30 | mature trees.
- 31 | (3) Stormwater treatment and flow control BMPs/facilities.
- 32 | ~~v. Create stewardship opportunities and/or build on existing~~
- 33 | ~~organizations to encourage residents to participate in activities such~~

~~as stream teams, storm drain stenciling, volunteer monitoring, riparian plantings and education activities).~~

e-d. ~~No later than February 2, 2015, Each Permittee shall begin measuring the implement or participate in an effort to measure~~ understanding and adoption of the targeted behaviors for at least one ~~new~~ targeted audience in at least one ~~new~~ subject area. ~~No later than February 2, 2016~~ ~~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. Permittees may meet this requirement individually or as a member of a regional group.

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

S6. STORMWATER MANAGEMENT PROGRAM FOR ~~CO-PERMITTEES AND SECONDARY PERMITTEES~~

A. This section applies to all Secondary Permittees; and all new Secondary Permittees whether coverage under this Permit is obtained individually, or as a Co-Permittee with a City, ~~and/or~~ Town, ~~and/or~~ County, and/or another Secondary Permittee.

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

1. To the extent allowable under state, federal and 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 than ~~180 days before the expiration date of this Permit~~ four and one-half years from initial permit coverage date. ~~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 *Stormwater Management Program*, 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.B., and submitted a copy of the agreement to Ecology.

1 ~~Each Secondary Permittees and Co-Permittees~~ shall prepare written
2 documentation of the SWMP. The SWMP ~~Report (SWMPR)~~documentation
3 shall ~~include a description of program activities for the upcoming calendar year.~~
4 ~~be organized according to the program components and shall be updated at least~~
5 ~~annually for submittal with the Permittee's annual reports to Ecology.~~

6 ~~For all Secondary Permittees except the Port of Seattle and the Port of Tacoma,~~
7 ~~The SWMP documentation shall include:~~

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

10 ~~Any additional actions necessary to meet the requirements of applicable~~
11 ~~TMDLs pursuant to S7-Compliance with Total Maximum Daily Load~~
12 ~~Requirements.~~

13 ~~For the Port of Tacoma and the Port of Seattle the SWMP documentation shall~~
14 ~~include:~~

15 ~~A description of each of the program components included in S6.E.1. through~~
16 ~~S6.E.7., and~~

17 ~~Any additional actions necessary to meet the requirements of applicable~~
18 ~~TMDLs pursuant to S7-Compliance with Total Maximum Daily Load~~
19 ~~Requirements.~~

20 5. Conditions S6.A., S6.B., and S6.C. are applicable to all Co-Permittees and
21 Secondary Permittees covered under this permit. In addition:

22 a. S6.D. is applicable to all Secondary Permittees except the Port of Seattle
23 and the Port of Tacoma. S6.D. does not apply to Permittees listed in S1.B.,
24 or S1.C.

25 b. S6.E. is applicable only to the Port of Seattle and the Port of Tacoma.

26 ~~c. S6.F. is applicable only to King County as a Co-Permittee with the City of~~
27 ~~Seattle for MS4s owned by King County but located within the City of~~
28 ~~Seattle.~~

29 ~~A.B.~~ Coordination

30 The SWMP ~~shall should include mechanisms to encourage~~ coordinated stormwater-
31 related policies, programs and projects within a watershed and interconnected MS4s.
32 Where relevant and appropriate, the SWMP shall also ~~include~~ coordination among
33 departments of the Secondary Permittee to ensure compliance with the terms of this
34 permit.

35 ~~B.C.~~ Legal Authority

36 To the extent allowable under state law and federal law, each Secondary Permittee
37 shall be able to demonstrate that it can operate pursuant to legal authority which

1 authorizes or enables the Secondary Permittee to control discharges to and from
2 municipal separate storm sewers owned or operated by the Secondary Permittee.

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

5 **C.D. Stormwater Management Program for Secondary Permittees**

6 ~~The term “Secondary Permittees” means drainage, diking, flood control, or diking
7 and drainage districts, Ports (other than the Ports of Seattle and Tacoma, (see S6.E.)),
8 public colleges and universities, and any other owners or operators of municipal
9 separate storm sewers located within the municipalities that are listed as Permittees in
10 S1.B. Permittees that are already implementing some or all of the Stormwater
11 Management Program (SWMP) components in this section shall continue
12 implementation of those components of their SWMP.~~

13 The Stormwater Management Program (SWMP) for Secondary Permittees shall
14 include the following components:

15 1. Public Education and Outreach

16 Each Secondary Permittee shall implement the following stormwater education
17 strategies:

- 18 a. Storm drain inlets owned and operated by the Secondary Permittee that are
19 located in maintenance yards, in parking lots, along sidewalks, and at
20 pedestrian access points shall be clearly ~~and permanently~~ labeled with the
21 message similar to “Dump no waste” — Drains to water body.”⁶ and
22 ~~indicating the point of discharge as a river, lake, bay, or ground water.~~

23 ~~i. — No later than three years from the date of permit coverage, at least
24 50 percent of these inlets shall be labeled.~~

- 25 ~~i. — No later than 180 days prior expiration date of this Permit, or as
26 established as a condition of coverage by Ecology, all of these inlets shall
27 be labeled.~~

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

- 33 b. Each year, ~~beginning no later than three years from the date of permit~~
34 ~~coverage~~, public ports, colleges and universities shall distribute
35 educational information to tenants and residents on the impact of

⁶ New Secondary Permittees shall label all inlets as described in S6.D.1.a no later than four years from the permit coverage date.

1 stormwater discharges on receiving waters, and steps that can be taken to
2 reduce pollutants in stormwater runoff. Distribution may be by hard copy
3 or electronic means.⁷ ~~Different combinations of Appropriate topics shall~~
4 ~~be addressed each year, and, before the expiration date of this Permit.~~
5 ~~Where relevant, tenants and residents shall receive educational~~
6 ~~information about the following topics may include:~~

- 7 i. How stormwater runoff affects local waterbodies.₅
- 8 ii. Proper use and application of pesticides and fertilizers.₅
- 9 iii. Benefits of using well-adapted vegetation.₅
- 10 iv. Alternative equipment washing practices, including cars and trucks
11 that minimize pollutants in stormwater.₅
- 12 v. Benefits of proper vehicle maintenance and alternative transportation
13 choices; proper handling and disposal of wastes, including the
14 location of hazardous waste collection facilities in the area.₅
- 15 vi. Hazards associated with illicit connections, and illicit discharges.
- 16 vii. Benefits of litter control and proper disposal of pet waste.

17 ~~Compliance with this requirement may be achieved through~~
18 ~~participation in the local jurisdiction's public education and outreach~~
19 ~~programs.~~

20 2. Public Involvement and Participation

21 ~~Each year no later than May 31, No later than 180 days before the expiration~~
22 ~~date of this Permit, or as established as a condition of coverage by the Ecology,~~
23 each Secondary Permittee shall:

- 24 a. ~~Publish a public notice in the local newspaper or~~ Make the annual report
25 available on the Permittee's website ~~and solicit public review of its~~
26 SWMP.
- 27 b. Make available on the Permittee's website the latest updated version of the
28 SWMPR. To comply with the posting requirement, a Secondary Permittee
29 that does not maintain a website may submit their updated SWMPR in
30 electronic format to Ecology for posting on Ecology's website. ~~available~~
31 ~~to the public. If the Secondary Permittee maintains a website, the SWMP~~
32 ~~shall be posted on the Secondary Permittee's website.~~

33 3. Illicit Discharge Detection and Elimination

⁷ New Secondary Permittees shall begin meeting the requirements of S6.D.1.b no later than three years from permit coverage date.

1 Each Secondary Permittee shall:

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

5 b. ~~Develop and adopt~~ Implement appropriate policies prohibiting illicit
6 discharges⁸ ~~no later than one year from the date of permit coverage and~~
7 ~~Identify possible enforcement mechanisms, no later than one year from the~~
8 ~~date of permit coverage; and, no later than eighteen months from the date~~
9 ~~of permit coverage, develop and implement~~ an enforcement plan using
10 ~~these mechanisms~~ to ensure compliance with illicit discharge policies.⁹
11 These policies shall address, at a minimum: illicit connections; non-
12 stormwater discharges, including spills as defined below; or otherwise
13 improperly disposing of hazardous materials, pet waste, and litter.

14 ~~i. Non-stormwater discharges covered by another NPDES permit and~~
15 ~~discharges from that occur during emergency fire fighting activities~~
16 ~~are allowed in the MS4 in accordance with S2 Authorized~~
17 ~~Discharges.~~

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

- 20 (1) Diverted stream flows;
- 21 (2) Rising ground waters;
- 22 (3) Uncontaminated ground water infiltration (as defined at 40
23 CFR 35.2005(20));
- 24 (4) Uncontaminated pumped ground water;
- 25 (5) Foundation drains;
- 26 (6) Air conditioning condensation;
- 27 (7) Irrigation water from agricultural sources that is commingled
28 with urban stormwater;
- 29 (8) Springs;
- 30 (9) Water from crawl space pumps;

⁸ New Secondary Permittees shall develop and implement appropriate policies prohibiting illicit discharges, and identify possible enforcement mechanisms as described in S6.D.3.b no later than one year from permit coverage date.

⁹ New Secondary Permittees shall develop and implement an enforcement plan in accordance with S6.D.3.b no later than 18 months from date of initial permit coverage.

- (10) Footing drains, ~~and~~
- (11) Flows from riparian habitats and wetlands-
- (12) Discharges that occur during emergency fire fighting activities
- (13) Non-stormwater discharges authorized by another NPDES or State Waste Discharge permit

iii.i. Conditionally allowable discharges: The policies ~~may allow~~~~shall prohibit~~ the following categories of non-stormwater discharges, ~~unless~~ only if the stated conditions are met and such discharges are allowed by local codes:

- (1) Discharges from potable water sources, including, but not limited to, water line flushing, hyperchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water. Planned discharges shall be 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.
- (2) 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.
- (3) Dechlorinated swimming pool, spa, and hot tub 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. Discharges shall be thermally controlled to prevent an increase in temperature of the receiving water. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4.
- (4) Street and sidewalk wash water, water used to control dust, and routine external building washdown that does not use detergents. The Secondary Permittee shall reduce these discharges through, at a minimum, public education activities and/or water conservation efforts conducted by the Secondary Permittee and/or the local jurisdiction. To avoid washing pollutants into the MS4, the Secondary Permittee shall minimize the amount of street wash and dust control water used. ~~At active construction sites, street sweeping shall be performed prior to washing the street.~~
- (5) Other non-stormwater discharges shall be in compliance with the requirements of a ~~stormwater~~ pollution prevention plan

1 reviewed by the Permittee which addresses control of such
2 discharges.

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

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

- 9 c. ~~No later than 180 days before the expiration date of this Permit, or as~~
10 ~~established as a condition of coverage by Ecology, develop~~ Maintain a
11 storm sewer system map showing the locations of all known storm drain
12 outfalls, labeling the receiving waters, and delineating the areas
13 contributing runoff to each outfall. Make the map (or completed portions
14 of the map) available on request to Ecology and ~~and to the extent~~
15 ~~appropriate~~ for to other Permittees ~~or Secondary Permittees~~. The preferred,
16 ~~but not required,~~ format ~~of submission for mapping will be~~ is an electronic
17 format with fully described mapping standards. An example description is
18 provided on Ecology's website.¹⁰
- 19 d. Conduct field inspections and visually inspect for illicit discharges at all
20 known ~~MS4 discharge points and~~ outfalls ~~that discharge to surface waters~~.
21 Visually inspect at least one third (on average) of all known ~~discharge~~
22 ~~points and~~ outfalls ~~each year beginning no later than two years from the~~
23 ~~date of permit coverage. Develop and i~~ Implement procedures to identify
24 and remove illicit discharges. Keep records of inspections and follow-up
25 activities.¹¹
- 26 e. ~~No later than 180 days before the expiration date of this Permit, or as~~
27 ~~established as a condition of coverage by the Ecology, develop and~~
28 ~~i~~ Implement a spill response plan that includes coordination with a
29 qualified spill responder.¹²
- 30 f. ~~No later than two years from permit coverage date, p~~ Provide staff training
31 or coordinate with existing training efforts to educate ~~relevant~~ staff ~~and as~~
32 ~~appropriate provide the opportunity for such training to tenants~~ on proper
33 ~~best management practices for preventing spills and~~ illicit discharges,
34 ~~including spills. Train A~~ all ~~relevant~~ Permittee staff ~~shall who, as part of~~

¹⁰ New Secondary Permittees shall meet the requirements of S6.D.3.c no later than four and one-half years from permit coverage date.

¹¹ New Secondary Permittees shall begin meeting the requirements of S6.D.3.d no later than two years from permit coverage date.

¹² New Secondary Permittees shall meet the requirements of S6.D.3.e no later than four and one-half years from permit coverage date.

1 | their normal job responsibilities, have a role in preventing such illicit
2 | discharges-be trained.¹³

3 | 4. Construction Site Stormwater Runoff Control

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

- 5 | a. Comply with all relevant ordinances, rules, and regulations of the local
6 | jurisdiction(s) in which the Secondary Permittee is located that govern
7 | construction phase stormwater pollution prevention measures.
- 8 | b. Ensure ~~For~~ all construction projects under the functional control of the
9 | Secondary Permittee, which require a construction stormwater permit;
10 | ~~Secondary Permittees shall~~ obtain coverage under the NPDES General
11 | Permit for Stormwater Discharges Associated with *Construction*
12 | *Activities*, or an alternative individual NPDES permit prior to discharging
13 | construction related stormwater.
- 14 | c. Coordinate with the local jurisdiction regarding projects owned and-or
15 | operated by other entities which discharge into the Secondary Permittee's
16 | MS4, to assist the local jurisdiction with achieving compliance with all
17 | relevant ordinances, rules, and regulations of the local jurisdiction(s).
- 18 | d. Provide training or coordinate with existing training efforts to educate
19 | relevant staff in erosion and sediment control *BMPs* and requirements, or
20 | hire trained contractors to perform the work.
- 21 | e. Coordinate as requested with Ecology or the local jurisdiction to provide
22 | access for inspection of construction sites or other land disturbances,
23 | which are under the control of the Secondary Permittee during the active
24 | grading-land disturbing activity and/or construction period.

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

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

- 28 | a. Comply with all relevant ordinances, rules and regulations of the local
29 | jurisdiction(s) in which the Secondary Permittee is located that govern
30 | post-construction stormwater pollution prevention measures.
- 31 | b. Coordinate with the local jurisdiction regarding projects owned and-or
32 | operated by other entities which discharge into the Secondary Permittee's
33 | MS4, to assist the local jurisdiction with achieving compliance with all
34 | relevant ordinances, rules, and regulations of the local jurisdiction(s).

35 | 6. Pollution Prevention and Good Housekeeping for Municipal Operations

¹³ New Secondary Permittees shall meet the requirements of S6.D.3.f no later than two years from permit coverage date.

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 under the functional control of conducted by the Secondary Permittee. The O&M Plan shall include appropriate pollution prevention and good housekeeping procedures for all of the following operations, activities, and/or types of facilities that are present within the Secondary Permittee's boundaries and under the functional control of the Secondary Permittee.¹⁴

i. Stormwater collection and conveyance systems, including catch basins, stormwater ~~sewer~~ pipes, open channels, culverts, ~~structural stormwater controls,~~ and structural ~~runoff~~ treatment and/or flow control ~~BMPs/facilities~~; The O&M Plan shall address, at a minimum 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~~ and operated by the Secondary Permittee and regularly inspect and maintain all ~~structural post-construction~~ stormwater BMPs/facilities 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 2005-2012 Stormwater Management Manual for Western Washington.

Secondary Permittees shall review their maintenance standards to ensure they are consistent with the requirements of this section.

~~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 2004 Stormwater Management Manual for Eastern Washington.~~

Secondary Permittees shall conduct spot checks of potentially damaged permanent stormwater treatment and flow control BMPs/facilities following a 24-hour major storm events 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;

¹⁴ New Secondary Permittees shall meet the requirements of S6.D.6.a no later than three years from permit coverage date.

1 snow disposal areas; material (e.g. salt, sand, or other chemical)
2 storage areas; all-season BMPs to reduce road and parking lot debris
3 and other pollutants from entering the MS4.

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

9 | iv. External building maintenance:- The O&M Plan shall address,
10 building exterior cleaning and maintenance including cleaning,
11 washing, painting and other maintenance activities, including
12 maintenance and management of dumpsters.

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

17 | vi. Material storage ~~facilities~~ ~~facilities~~ ~~areas~~, and heavy equipment
18 ~~maintenance~~ ~~or~~ ~~and~~ ~~storage~~ ~~yards~~ ~~areas~~, ~~and~~ ~~maintenance~~ ~~areas~~:-
19 Secondary Permittees shall develop and implement a Stormwater
20 Pollution Prevention Plan to protect water quality at each of these
21 facilities owned or operated by the Secondary Permittee and not
22 covered under the General NPDES Permit for Stormwater
23 Discharges Associated with *Industrial Activities* or under another
24 NPDES permit that covers stormwater discharges associated with the
25 activity.

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

29 | b. From the initial date of coverage under this Permit, Secondary Permittees
30 shall also have permit coverage for all facilities operated by the Secondary
31 Permittee that are required to be covered under the General NPDES
32 Permit for Stormwater Discharges Associated with Industrial Activities or
33 another NPDES permit that regulates surface water discharges associate
34 with the activity.

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

- 1 | d. Secondary Permittees shall implement a program designed to train all
2 | employees whose construction, operations, or maintenance job functions
3 | may impact stormwater quality.¹⁵ The training shall address:
- 4 | i. The importance of protecting water quality;
 - 5 | ii. The requirements of this Permit;
 - 6 | iii. Operation and maintenance requirements;
 - 7 | iv. Inspection procedures;
 - 8 | v. Ways to perform their job activities to prevent or minimize impacts
9 | to water quality, ~~and~~
 - 10 | vi. Procedures for reporting water quality concerns, including potential
11 | illicit discharges, including spills.

12 | **D.E. Stormwater Management Program for the Port of Seattle and Port of Tacoma**

13 | ~~The Stormwater Management Program (SWMP) for the Port of Seattle and the Port~~
14 | ~~of Tacoma shall be developed and implemented in accordance with the schedules~~
15 | ~~contained in this section and shall be fully developed and implemented no later than~~
16 | ~~three years from the effective date of coverage.~~

17 | ~~Notwithstanding the schedules for implementation of SWMP components contained~~
18 | ~~in this permit,~~ Permittees that are already implementing some or all of the Stormwater
19 | Management Program (SWMP) components in this section shall continue
20 | implementation of those components of their SWMP.

21 | The SWMP for the Port of Seattle and the Port of Tacoma of shall include the
22 | following components:

23 | 1. Education Program

24 | The SWMP shall include an education program aimed at tenants and ~~Port~~
25 | Permittee employees. The goal of the education program is to reduce or
26 | eliminate behaviors and practices that cause or contribute to adverse stormwater
27 | impacts.

28 | Minimum Performance Measure:

- 29 | a. ~~No later than 18 months after receiving coverage under this permit,~~ ~~the~~
30 | Permittee shall make educational materials available to tenants and ~~Port~~
31 | Permittee employees whose job duties could impact stormwater.

32 | 2. Public Involvement and Participation

¹⁵ New Secondary Permittees shall develop and implement the training program required in S6.D.6.d no later than three years from permit coverage date.

1 ~~No later than 180 days before the expiration date of this Permit, each Port shall:~~

- 2 ~~a. Publish a public notice in the local newspaper and solicit public review of its~~
3 ~~SWMP.~~

4 Each Permittee shall Make the latest updated version of the SWMPR available
5 to the public. The most recent SWMPR and Annual Report shall be posted on
6 the ~~Port's~~Permittee's website.

7 3. Illicit Discharge Detection and Elimination

8 The SWMP shall include a program to identify, detect, remove and prevent
9 illicit connections and illicit discharges, including spills, into the municipal
10 separate storm sewers owned or operated by the Permittee~~Port~~.

11 Minimum Performance Measures:

- 12 a. ~~From the date of permit coverage, e~~Comply with all relevant ordinances,
13 rules, and regulations of the local jurisdiction(s) in which the ~~Port~~
14 ~~district's MS3~~Permittee's MS4 is located that govern non-stormwater
15 discharges.

- 16 b. ~~Develop and adopt~~Implement appropriate policies prohibiting illicit
17 discharges ~~no later than one year from the date of permit coverage.~~
18 ~~Identify possible enforcement mechanisms no later than one year from the~~
19 ~~date of permit coverage and, no later than eighteen months from the date~~
20 ~~of permit coverage, develop and i~~Implementand an enforcement plan
21 ~~using these mechanisms~~ to ensure compliance with illicit discharge
22 policies. These policies shall address, at a minimum: illicit connections;
23 non-stormwater discharges, including spills as defined below; or otherwise
24 improperly disposing of hazardous materials, pet waste, and litter.

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

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

- 30 (1) Diverted stream flows;
31 (2) Rising ground waters;
32 (3) Uncontaminated ground water infiltration (as defined at 40
33 CFR 35.2005(20));
34 (4) Uncontaminated pumped ground water;
35 (5) Foundation drains;
36 (6) Air conditioning condensation;

1 (7) Irrigation water from agricultural sources that is commingled
2 with urban stormwater;

3 (8) Springs;

4 (9) Water from crawl space pumps;

5 (10) Footing drains; ~~and~~

6 (11) Flows from riparian habitats and wetlands-

7 (12) Discharges that occur during emergency fire fighting activities

8 (13) Non-stormwater discharges authorized by another NPDES
9 permit

10 ii. Conditionally allowable discharges: The policies ~~shall prohibit~~ may
11 allow the following categories of non-stormwater discharges ~~unless~~
12 only if the stated conditions are met and such discharges are allowed
13 by local codes:

14 (1) Discharges from potable water sources, including but not
15 limited to, water line flushing, hyperchlorinated water line
16 flushing, fire hydrant system flushing, and pipeline hydrostatic
17 test water. Planned discharges shall be de-chlorinated to a
18 concentration of 0.1 ppm or less, pH-adjusted if necessary, and
19 volumetrically and velocity controlled to prevent resuspension
20 of sediments in the MS4.

21 (2) Discharges from lawn watering and other irrigation runoff.
22 These discharges shall be minimized through, at a minimum,
23 public education activities and water conservation efforts
24 conducted by the ~~Secondary~~ Permittee and/or the local
25 jurisdiction.

26 (3) Dechlorinated swimming pool, spa, and hot tub discharges.
27 The discharges shall be dechlorinated to a concentration of 0.1
28 ppm or less, pH-adjusted and reoxygenated if necessary, and
29 volumetrically and velocity controlled to prevent resuspension
30 of sediments in the MS4. Discharges shall be thermally
31 controlled to prevent an increase in temperature of the
32 receiving water. Swimming pool cleaning wastewater and
33 filter backwash shall not be discharged to the MS4.

34 (4) Street and sidewalk wash water, water used to control dust, and
35 routine external building wash down that does not use
36 detergents. The Ports of Seattle and Tacoma shall reduce these
37 discharges through, at a minimum, public education activities
38 and/or water conservation efforts conducted by the Port and/or
39 the local jurisdiction. To avoid washing pollutants into the

1 MS4, the amount of street wash and dust control water used
2 shall be minimized. ~~At active construction sites, street~~
3 ~~sweeping shall be performed prior to washing the street.~~

- 4 (5) Other non-stormwater discharges shall be in compliance with
5 the requirements of a ~~stormwater~~ pollution prevention plan
6 reviewed by the Permittee which addresses control of such
7 discharges.

8 ~~iii. The SWMP shall, at a minimum, address each category in iii above~~
9 ~~in accordance with the conditions stated therein.~~

10 ~~iv.iii. The SWMP Permittee shall further~~ address any category of
11 discharges in ~~ii~~ or ~~iii~~ above if the discharges ~~are~~ identified as a
12 significant source of pollutants to waters of the State.

- 13 c. The SWMP shall include an ongoing program for gathering, maintaining,
14 and using adequate information to conduct planning, priority setting, and
15 program evaluation activities for ~~Port~~Permittee-owned properties. The
16 following information will be gathered and ~~retained~~maintained on an
17 ongoing basis:

18 i. Mapping of known ~~municipal separate storm sewer~~MS4 outfalls, and
19 maps depicting land use for property owned by the ~~Port~~Permittee,
20 and all other properties served by ~~municipal separate storm~~
21 ~~sewers~~MS4s known to and owned or operated by the ~~Permittee~~Port.
22 ~~The mapping shall be completed within 2 years of receiving~~
23 ~~coverage under this permit.~~

24 ii. Mapping of tributary conveyances (including size, material, and type
25 attributes where known), and the associated drainage areas of
26 ~~municipal separate storm sewer~~ MS4 outfalls ~~owned or operated by~~
27 ~~the Port~~, with a 24 inch nominal diameter or larger, or an equivalent
28 cross-sectional area for non-pipe systems. ~~The mapping shall be~~
29 ~~completed within 2 years of receiving coverage under this permit.~~ By
30 August 1, 2017, each Permittee shall complete this requirement for
31 all MS4 outfalls with a 12 inch nominal diameter or larger, or an
32 equivalent cross-sectional area for non-pipe systems.

33 ~~iii. Mapping of known connections greater than or equal to 8 inches to~~
34 ~~tributary conveyances mapped in accordance with S6.E.3.c.ii. The~~
35 ~~mapping shall be completed by August 1, 2017.~~

36 ~~iii.iv. To the extent consistent with national security laws and directives,~~
37 ~~each Port-Permittee shall make available to Ecology upon request,~~
38 ~~available maps depicting the information required in S6.E.3.c.i.~~
39 ~~through iii., above. GIS data layers generated by the Port depicting~~
40 ~~outfall locations, land use, tributary conveyances and associated~~
41 ~~drainage areas of outfalls owned or operated by the Port. The~~

1 ~~preferred required~~ format of submission will be an for mapping is
2 electronic ~~format~~ with fully described mapping standards. An
3 example description is ~~provided at~~ available on Ecology's website.

4 ~~iv.v.~~ No later than 24 months after receiving coverage under this permit,
5 ~~develop and i~~Implement a program to document operation and
6 maintenance records for stormwater treatment and flow control
7 BMPs/facilities and catch basins covered under this permit. The
8 ~~information shall be available for inspection by Ecology.~~

9 ~~v.vi.~~ Upon request, and to the extent consistent with national security laws
10 and directives, mapping information and operation and maintenance
11 records shall be provided to the City or County in which the ~~Port~~
12 Permittee is located.

13 d. Conduct field screening of at least 20% of the MS4 each year for the
14 purpose of detecting illicit discharges and illicit connections. Field
15 screening methodology shall be appropriate to the characteristics of the
16 MS4 and water quality concerns. inspections and visually inspect for illicit
17 discharges at all known outfalls that discharge to surface waters. Visually
18 inspect at least one third (on average) of all known outfalls each year
19 beginning no later than 3 years from the date of permit coverage. Develop
20 ~~and i~~Implement procedures to identify and remove any illicit discharges
21 and illicit connections. Keep records of inspections and follow-up
22 activities.

23 e. ~~180 days before the expiration date of this Permit, develop and i~~Implement
24 a spill response plan that includes coordination with a qualified spill
25 responder.

26 f. Provide ongoing staff training or coordinate with existing training efforts
27 to educate ~~relevant~~ staff and as appropriate provide the opportunity for
28 such training to tenants on proper best management practices for
29 preventing ~~spills and~~ illicit discharges, including spills, and for
30 identifying, reporting, and responding as appropriate. Train all Permittee
31 staff who, as part of their normal job responsibilities, have a role in
32 preventing such discharges. Keep records of training provided and staff
33 trained.

34 4. Construction Site Stormwater Runoff Control

35 The SWMP shall include a program to reduce pollutants in stormwater runoff
36 from construction activities under the functional control of the Permittee.

37 Minimum performance measures:

38 a. Comply with all relevant, rules, and regulations of the local jurisdiction(s)
39 in which the ~~Port~~ Permittee is located that govern construction phase
40 stormwater pollution prevention measures. ~~Within one year of the~~
41 effective date of coverage, and to the extent allowed by local ordinances,

1 rules, and regulations, comply with the applicable minimum technical
2 requirements for new development and redevelopment contained in
3 Appendix 1.

- 4 b. Ensure all construction projects under the functional control of the
5 Permittee which require a construction stormwater permit obtain coverage
6 under the NPDES General Permit for Stormwater Discharges Associated
7 with Construction Activities or an individual NPDES permit prior to
8 discharging construction related stormwater. When applicable, seek and
9 obtain coverage under the General NPDES Permit for Stormwater
10 Discharges Associated with Construction Activities.
- 11 c. Coordinate with the local jurisdiction regarding projects owned and-or
12 operated by other entities which discharge into interconnected MS~~3~~4s, to
13 assist the local jurisdiction with achieving compliance with all relevant
14 ordinances, rules, and regulations of the local jurisdiction(s).
- 15 d. Provide training or coordinate with existing training efforts to educate ~~port~~
16 Permittee staff responsible for implementing construction stormwater
17 erosion and sediment control BMPs and requirements, or hire trained
18 contractors to perform the work.
- 19 e. Coordinate as requested with Ecology or the local jurisdiction to provide
20 access for inspection of construction sites or other land disturbances that
21 are under the control of the ~~Port-Permittee~~ during the active grading-land
22 disturbing activity and/or construction period.

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

25 The SWMP shall include a program to address post-construction stormwater
26 runoff from new development and redevelopment projects. The program shall
27 establish controls to prevent or minimize water quality impacts.

28 Minimum performance measures:

- 29 a. Comply with all relevant ordinances, rules and regulations of the local
30 jurisdiction(s) in which the ~~Port-Permittee~~ is located that govern post-
31 construction stormwater pollution prevention measures, including proper
32 operation and maintenance of the MS~~4~~3. Within one year of the effective
33 date of permit coverage, and to the extent allowed by local ordinances,
34 rules, and regulations, comply with the applicable the minimum technical
35 requirements for new development and redevelopment contained in
36 Appendix 1.
- 37 b. Coordinate with the local jurisdiction regarding projects owned and
38 operated by other entities which discharge into interconnected
39 MS3sMS4s, to assist the local jurisdiction in achieving compliance with
40 all relevant ordinances, rules, and regulations of the local jurisdiction(s).

1 6. Operation and Maintenance Program

2 The SWMP shall include an operation and maintenance program for all
3 stormwater treatment and flow control BMPs/facilities, and catch basins to
4 ensure that BMPs continue to function properly.

5 Minimum Performance Measures:

- 6 a. Each Port-Permittee shall ~~prepare~~ implement an operation and
7 maintenance (O&M) manual for all stormwater treatment and flow control
8 BMPs/facilities and catch basins that are under the functional control of
9 the Permittee and which discharge stormwater to its MS3MS4, or to an
10 interconnected MS3MS4.
- 11 i. ~~The O&M manual shall be completed no later than 2 years after~~
12 ~~receiving coverage under this permit.~~ Retain Aa copy of the O&M
13 manual ~~shall be retained~~ in the appropriate Port-Permittee
14 department and routinely update following discovery or construction
15 of new stormwater facilities.
- 16 ii. The operation and maintenance manual shall establish facility-
17 specific maintenance standards that are as protective, or more
18 protective than those specified in Chapter 4 of Volume V of the 2005
19 2012 Stormwater Management Manual for Western Washington. For
20 existing stormwater facilities which do not have maintenance
21 standards, the Permittee shall develop a maintenance standard. By
22 December 31, 2014 each permittee shall update maintenance
23 standards, as necessary, to meet the requirements of this section.
- 24 iii. The purpose of the maintenance standard is to determine if
25 maintenance is required. The maintenance standard is not a measure
26 of the facility's required condition at all times between inspections.
27 Exceeding the maintenance standards between inspections and/or
28 maintenance is not a permit violation. Maintenance actions shall be
29 performed within the time frames specified in S6.E.6.b.ii.
- 30 b. The Port-Permittee will manage maintenance activities to inspect all
31 stormwater BMPs-facilities listed in the O&M manual annually, and take
32 appropriate maintenance action in accordance with the O&M manual.
- 33 i. The Permittee may change the inspection frequency to less than
34 annually, provided the maintenance standards are still met. Reducing
35 the annual inspection frequency shall be based on maintenance
36 records of double the length of time of the proposed inspection
37 frequency. In the absence of maintenance records, the Permittee may
38 substitute written statements to document a specific less frequent
39 inspection schedule. Written statements shall be based on actual
40 inspection and maintenance experience and shall be certified in
41 accordance with G19 Certification and Signature.

1 ii. Unless there are circumstances beyond the Permittees control, when
2 an inspection identifies an exceedence of the maintenance standard,
3 maintenance shall be performed:

4 (1) Within 1 year for wet pool facilities and retention/detention
5 ponds.

6 (2) Within 1 year for typical maintenance of facilities, except catch
7 basins.

8 (3) Within 6 months for catch basins, ~~and~~

9 (4) Within 2 years for maintenance that requires capital
10 construction of less than \$25,000.

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

17 c. The ~~Port~~ Permittee shall provide appropriate training for ~~Port~~ Permittee
18 maintenance staff.

19 d. The ~~Port~~ Permittee will maintain records of inspections and maintenance
20 activities.

21 7. Source Control in existing Developed Areas

22 The SWMP shall include the development and implementation of one or more
23 Stormwater Pollution Prevention Plans (SWPPPs). A SWPPP is a documented
24 plan to identify and implement measures to prevent and control the
25 contamination of discharges of stormwater to surface or ground water.
26 SWPPP(s) shall be prepared and implemented for all ~~Port~~ Permittee-owned
27 lands, except environmental mitigation sites owned by the ~~Port~~ Permittee, that
28 are not covered by a NPDES permit issued by Ecology that ~~covers~~ authorizes
29 stormwater discharges.

30 Minimum Performance Measures

31 a. SWPPP(s) shall be ~~developed within 24 months of receiving coverage~~
32 updated as necessary to reflect changes at the facility.

33 b. The SWPPP(s) shall include a facility assessment including a site plan,
34 identification of pollutant sources, and description of the drainage system.

35 c. The SWPPP(s) shall include a description of the source control BMPs
36 used or proposed for use by the Permittee. Stormwater Source control
37 BMPs shall be selected from the 2005-2012 Stormwater Management
38 Manual for Western Washington (or an equivalent Manual approved by

1 Ecology). Implementation of non-structural BMPs shall begin
2 immediately after the pollution prevention plan is developed. Where
3 necessary, a schedule for implementation of structural BMPs shall be
4 included in the SWPPP(s).

- 5 d. The ~~Port~~ Permittee shall maintain a list of sites covered by the SWPPP(s)
6 required under this permit. At least ~~15~~ 20% of the listed sites shall be
7 inspected annually, ~~and 80% of the total number of listed properties shall~~
8 ~~be inspected by 180 days before the expiration date of the permit.~~
- 9 e. The SWPPP(s) shall include policies and procedures to reduce pollutants
10 associated with the application of pesticides, herbicides and fertilizer.
- 11 f. The SWPPP(s) shall include measures to prevent, identify and respond to
12 illicit discharges, including illicit connections, spills and improper
13 disposal. ~~Immediately upon becoming aware of a spill into the drainage~~
14 ~~system owned or operated by the Port, the Port~~ When the Permittee
15 submits a notification pursuant to G3, the Permittee shall also notify the
16 City or County it is located in, ~~and notify Ecology.~~
- 17 g. The SWPPP(s) shall include a component related to inspection and
18 maintenance of stormwater facilities and catch basins that is consistent
19 with the Port's Permittee's Operation and Maintenance Program, as
20 specified in S6.E.6. above.

- 21 8. Monitoring Program. Monitoring requirements for the Port of Seattle and Port
22 of Tacoma are included in Special Condition S8.

23 ~~**E.—Stormwater Management Program for King County as a Co-Permittee**~~

24 ~~King County, as a Co-Permittee with the City of Seattle for the discharges from~~
25 ~~outfalls King County owns or operates in the City, shall participate in the City of~~
26 ~~Seattle's Stormwater Management Program in accordance with the Joint Stormwater~~
27 ~~Management Program element of the Memorandum of Agreement between the City~~
28 ~~and County dated September 25, 1995. The apportionment of responsibilities for~~
29 ~~stormwater management within the City shall be governed solely by the MOA or its~~
30 ~~amendment, provided the City's stormwater management program, including King~~
31 ~~County participation, shall fully comply with Section S5 of this permit. Any~~
32 ~~amendments to the MOA shall be approved by Ecology before becoming effective.~~

33 **S7. COMPLIANCE WITH TOTAL MAXIMUM DAILY LOAD REQUIREMENTS**

34 The following requirements apply if an applicable Total Maximum Daily Load (TMDL) is
35 approved for stormwater discharges from MS3s MS4s owned or operated by the Permittee.
36 Applicable TMDLs are TMDLs which have been approved by EPA on or before the
37 issuance date of this permit, or prior to the date that Ecology issues -coverage under this
38 permit, whichever is later is granted.

- 39 A. For applicable TMDLs listed in Appendix 2, affected Permittees shall comply with
40 the specific requirements identified in Appendix 2. Each Permittee shall keep records

1 of all actions required by this permit that are relevant to applicable TMDLs within
2 their jurisdiction. The status of the TMDL implementation shall be included as part of
3 the annual report submitted to Ecology. Each annual report shall include a summary
4 of relevant SWMP and Appendix 2 activities conducted in the TMDL area to address
5 the applicable TMDL parameter(s).

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

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

11 C. For TMDLs that are approved by EPA after this permit is issued, Ecology may
12 establish TMDL-related permit requirements through future permit modification if
13 Ecology determines implementation of actions, monitoring or reporting necessary to
14 demonstrate reasonable further progress toward achieving TMDL waste load
15 allocations, and other targets, are not occurring and shall be implemented during the
16 term of this permit or when this permit is reissued. Permittees are encouraged to
17 participate in development of TMDLs within their jurisdiction and to begin
18 implementation.

19 S8. MONITORING

Explanation of changes:

The draft monitoring language Ecology proposes in this section is intended to replace the
previous S8 permit requirements entirely. Because this section is not presented in a
format that shows changes from the previous permit, please note the proposed deletion of
special condition S8.B.2 of the current permit.

S8.B.2 previously required Permittees to provide in each annual report:

“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.”

20
21 A. All Permittees including Secondary Permittees are only required to conduct water
22 sampling or other testing during the effective term of this permit under the following
23 conditions:

24 1. Any water quality monitoring required for compliance with Total Maximum
25 Daily Loads (TMDLs), pursuant to section S7 Compliance with Total
26 Maximum Daily Load Requirements and Appendix 2 of this permit; and

27 2. Any sampling or testing required for characterizing illicit discharges pursuant to
28 sections S5.C.8, S6.D.3, or S6.E.3 of this permit; and

1 3. If a Permittee chooses not to participate in any component of the regional
2 stormwater monitoring program (RSMP), monitoring requirements specified in
3 S8.C.1.b, S8.D.2, or S8.D.3 of this permit.

4 4. Clark County shall conduct monitoring pursuant to S8.C.2 below.

5 B. All Permittees including Secondary Permittees shall provide, in each annual report a
6 description of any stormwater monitoring or stormwater-related studies conducted by
7 the Permittee during the reporting period. If other stormwater monitoring or
8 stormwater related studies were conducted on behalf of the Permittee, or if
9 stormwater-related investigations conducted by other entities were reported to the
10 Permittee, a brief description of the type of information gathered or received shall be
11 included in the annual report(s) covering the time period(s) during which the
12 information was received.

13 Permittees are not required to provide descriptions of any monitoring, studies, or
14 analyses conducted as part of the RSMP in annual reports. If a Permittee opts for
15 independent monitoring in accordance with requirements in S8.C, S8.D or S8.E,
16 below, annual reporting of such monitoring must follow the requirements specified in
17 those sections.

18
19
20 C. Status and trends monitoring.

21 1. By December 1, 2013, King, Pierce, and Snohomish Counties, the Cities of
22 Seattle and Tacoma, and the Ports of Seattle and Tacoma shall notify Ecology in
23 writing which of the following two options for Status and Trends Monitoring
24 the Permittee chooses to conduct during this permit cycle. Either option will
25 fully satisfy the Permittee's obligations under this section (S8.C). Each
26 Permittee shall select a single option for the duration of this permit term. Each
27 Permittee shall either:

28 a. Status and Trends Monitoring Option #1: Pay to Ecology, on or before the
29 dates specified in this Section (S8.C) the amount specified below, which
30 Ecology shall use into a collective fund and enter into an agreement with
31 Ecology to implement the Puget Sound marine nearshore and small
32 streams status and trends components of a RSMP. Each agreement shall be
33 substantially in the form of Appendix 12. Ecology will administer the
34 collective fund and implement the monitoring program in accordance with
35 the arrangements between Ecology and each Permittee. The agreement
36 will specify the tasks and deliverables of the RSMP. By timely making
37 such payments to Ecology, the Permittee shall have satisfied the
38 requirements of this Section (S8.C) for the calendar year at issue.

39 i. Each Permittee shall pay to Ecology the amounts prescribed in this
40 section, according to the following schedule:

1 (1) The first payment is due October 15, 2013, and subsequent
2 payments are due annually beginning August 15, 2014.

3 (2) The payment amounts are:

<u>Permittee</u>	<u>First payment</u>	<u>Second and Subsequent Payments</u>
<u>King County</u>	<u>\$ 15,000</u>	<u>\$ 74,540</u>
<u>Pierce County</u>	<u>\$ 15,000</u>	<u>\$ 92,800</u>
<u>Port of Seattle</u>	<u>\$ 5,000</u>	<u>\$ 4,151</u>
<u>Port of Tacoma</u>	<u>\$ 5,000</u>	<u>\$ 4,151</u>
<u>City of Seattle</u>	<u>\$ 15,000</u>	<u>\$149,436</u>
<u>Snohomish County</u>	<u>\$ 15,000</u>	<u>\$ 73,452</u>
<u>City of Tacoma</u>	<u>\$ 15,000</u>	<u>\$ 49,861</u>

4 Or

5 b. Status and Trends Monitoring Option #2: Conduct status and trends
6 monitoring beginning no later than July 1, 2014, as follows:

7 i. City and County Permittees shall conduct wadeable stream water
8 quality, benthos, habitat, and sediment chemistry monitoring
9 according to the Ecology-approved QAPP for the Small Streams
10 Status and Trends component of the RSMP. This monitoring shall be
11 conducted at the first twelve qualified (as defined in the QAPP) sites
12 that are located within the jurisdiction's boundaries, as listed
13 sequentially among the potential RSMP sampling sites in the QAPP.
14 Counties shall monitor the first four qualified sites located inside
15 UGA boundaries and the first eight sites outside UGA boundaries.

16 ii. City and County Permittees and the Ports of Seattle and Tacoma
17 shall conduct sediment chemistry, bacteria, and mussel monitoring
18 according to the Ecology-approved QAPP for the Marine Nearshore
19 Status and Trends Component of the RSMP. This monitoring shall
20 be conducted at the first eight sites (as listed sequentially among the
21 potential RSMP sampling sites included in the QAPP) that are
22 located adjacent to the Puget Sound shoreline boundary of the
23 jurisdiction.

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

26 2. Clark County shall:

27 a. Continue stormwater discharge monitoring at the sites selected pursuant to
28 S8.D in the Phase I Municipal Stormwater Permit February 16, 2007 –
29 February 15, 2012 for the duration of this permit term. This monitoring

1 and reporting of findings shall be conducted in accordance with the
2 previously-approved QAPP until July 1, 2014 or until a revised QAPP is
3 approved by Ecology, whichever is later.

4 b. After July 1, 2014, this monitoring shall be conducted in accordance with
5 a revised QAPP that follows the specifications and deadlines in Appendix
6 9. The revised QAPP shall be submitted to Ecology by February 2, 2014.
7 If Ecology does not request changes within 90 days, the QAPP is
8 considered approved. The final QAPP shall be submitted to Ecology as
9 soon as possible following finalization.

10 c. If the County changes a discharge monitoring location, the County shall
11 document in the revised QAPP why the pre-existing stormwater
12 monitoring location is not a good location for additional monitoring and
13 why the newly selected site is of interest for long term stormwater
14 discharge monitoring.

15 D. Effectiveness Studies. By December 1, 2013, Clark, King, Pierce, and Snohomish
16 Counties, the Cities of Seattle and Tacoma, and the Ports of Seattle and Tacoma shall
17 notify Ecology in writing which of the following three options for Effectiveness
18 Studies the Permittee chooses to conduct during this permit cycle. Any one of the
19 three options will fully satisfy the Permittee's obligations under this section (S8.D).
20 Each Permittee shall select a single option for the duration of this permit term. Each
21 Permittee shall either:

22 1. Effectiveness Studies Option #1: Pay to Ecology, on or before the dates
23 specified in this Section (S8.D.1), the amount specified below, which Ecology
24 will use into a collective fund and enter into an agreement with Ecology to
25 implement the effectiveness studies component of the RSMP. Each agreement
26 shall be substantially in the form of Appendix 12. The agreement will specify
27 Ecology will administer the collective fund and implement the monitoring
28 program in accordance with the tasks and deliverables of the RSMP. By timely
29 making such payment to Ecology, the Permittee shall have satisfied the
30 requirements of this Section (S8.D.1) for the calendar year at issue.

31 a. Each Permittee shall pay to Ecology the amount prescribed in this section,
32 according to the following schedule:

33 i. Payments are due annually beginning August 15, 2014.

34 ii. The payment amounts are:

<u>Permittee</u>	<u>Payment amount</u>
<u>Clark County</u>	<u>\$ 86,617</u>
<u>King County</u>	<u>\$124,196</u>
<u>Pierce County</u>	<u>\$154,619</u>

<u>Port of Seattle</u>	<u>\$ 6,916</u>
<u>Port of Tacoma</u>	<u>\$ 6,916</u>
<u>City of Seattle</u>	<u>\$248,986</u>
<u>Snohomish County</u>	<u>\$122,383</u>
<u>City of Tacoma</u>	<u>\$ 83,077</u>

1 Or

2 2. Effectiveness Studies Option #2: Conduct stormwater discharge monitoring in
3 accordance with Appendix 9 and the following:

4 a. Each city and county Permittee shall conduct stormwater discharge
5 monitoring at five sites. Permittees are encouraged to continue stormwater
6 monitoring at locations monitored under S8.D of the *Phase I Municipal*
7 *Stormwater Permit* February 16, 2007 – February 15, 2012.

8 Any Permittee who would like to change a discharge monitoring location
9 shall document in the revised QAPP (see S8.D.2.c below) why the pre-
10 existing stormwater monitoring location is not a good location for
11 additional monitoring and why the newly selected site is of interest for
12 long term stormwater discharge monitoring and associated stormwater
13 management program effectiveness evaluations.

14 Clark County shall select and monitor five sites in addition to the three
15 sites monitored pursuant to S8.C.2 above.

16 b. Each port Permittee shall conduct stormwater discharge monitoring at two
17 sites representing different pollution-generating activities or land uses.
18 Permittees are encouraged to continue stormwater monitoring at locations
19 monitored under S8.D of the *Phase I Municipal Stormwater Permit*
20 February 16, 2007 – February 15, 2012. Any Permittee who would like to
21 change a discharge monitoring location shall describe why the pre-existing
22 stormwater monitoring location is not a good location for additional
23 monitoring. The Permittee shall document why the newly selected site(s)
24 are of interest for long term stormwater discharge monitoring and
25 associated stormwater management program effectiveness evaluations.

26 c. By February 2, 2014, each Permittee shall submit to Ecology a draft
27 updated stormwater discharge monitoring QAPP for review and approval.
28 If Ecology does not request changes within 90 days, the draft QAPP is
29 considered approved. Final QAPPs shall be submitted to Ecology as soon
30 as possible following finalization.

31 d. Stormwater discharge monitoring shall be fully implemented no later than
32 October 1, 2014 in accordance with an Ecology-approved QAPP.

33 Or

34 3. Effectiveness Studies Option #3: Each Permittee will both:

1 a. Pay to Ecology, on or before the dates specified in this Section (S8.D.3),
2 the amount specified below, which Ecology will use to implement the
3 effectiveness studies component of the RSMP. Ecology will administer
4 the collective fund and implement the monitoring program in accordance
5 with the tasks and deliverables of the RSMP. By timely making such
6 payment to Ecology, the Permittee shall have satisfied the requirements of
7 this Section (S8.D.3.a) for the calendar year at issue. ~~prescribed in this~~
8 section, according to the following schedule:

9 i. Payments are due annually beginning August 15, 2014.

10 ii. The payment amounts are:

<u>Permittee</u>	<u>Payment amount</u>
<u>Clark County</u>	<u>\$ 43,308</u>
<u>King County</u>	<u>\$ 62,098</u>
<u>Pierce County</u>	<u>\$ 77,310</u>
<u>Port of Seattle</u>	<u>\$ 3,458</u>
<u>Port of Tacoma</u>	<u>\$ 3,458</u>
<u>City of Seattle</u>	<u>\$124,493</u>
<u>Snohomish County</u>	<u>\$ 61,192</u>
<u>City of Tacoma</u>	<u>\$ 41,538</u>

11 And

12 b. In accordance with the requirements below, independently conduct an
13 effectiveness study that is not expected to be undertaken as part of the
14 RSMP.

15 i. No later than February 2, 2014 each Permittee shall submit to
16 Ecology for review and approval a detailed proposal describing the
17 purpose, objectives, design, and methods of the independent
18 effectiveness study; anticipated outcomes; expected modifications to
19 the Permittee's stormwater management program; and relevance to
20 other Permittees.

21 ii. Each Permittee shall submit a draft QAPP to Ecology within 120
22 days of Ecology's approval of the detailed proposal. The QAPP shall
23 be prepared in accordance with *Guidelines for Preparing Quality*
24 *Assurance Project Plans for Environmental Studies*, July 2004
25 (Ecology Publication No. 04-03-030). The QAPP shall include
26 reporting details including timely uploading of all relevant data to
27 Ecology's EIM database and/or the *International Stormwater BMP*
28 *Database* as appropriate. If Ecology does not request changes within
29 90 days of submittal, the QAPP is considered approved.

- iii. Begin full implementation of the study no later than six months following Ecology’s approval of the QAPP.
- iv. Describe interim results and status of the study implementation in annual reports throughout the duration of the study.
- v. Report final results, including recommended future actions, to Ecology and on the Permittee’s webpage no later than six months after completion of the study.

E. Source Identification and Diagnostic Monitoring Information Repository. By December 1, 2013, Clark, King, Pierce, and Snohomish Counties, the Cities of Seattle and Tacoma, and the Ports of Seattle and Tacoma shall notify Ecology in writing which of the following options for the Source Identification and Diagnostic Monitoring Information Repository the Permittee chooses to conduct during this permit cycle. Either option will fully satisfy the Permittee’s obligations under this section (S8.E). Each Permittee shall select a single option for the duration of this permit term. Each Permittee shall either:

1. Source Identification and Diagnostic Monitoring Information Repository Option #1: Pay to Ecology, on or before the dates specified in this Section (S8.E) the amount specified below, which Ecology will use ~~into a collective fund and enter into an agreement with Ecology~~ to implement the source identification and diagnostic monitoring information repository component of the RSMP. ~~Each agreement shall be substantially in the form of Appendix 12.~~ Ecology will administer the collective fund and implement the monitoring program in accordance with the tasks and deliverables of the RSMP. By timely making such payment to Ecology, the Permittee shall have satisfied the requirements of this Section (S8.E) for the calendar year at issue.

- a. Each Permittee shall pay to Ecology the amount prescribed in this section, according to the following schedule:
 - i. Payments are due annually beginning August 15, 2014.
 - ii. The payment amounts are:

<u>Permittee</u>	<u>Payment amount</u>
<u>Clark County</u>	<u>\$ 8,033</u>
<u>King County</u>	<u>\$11,518</u>
<u>Pierce County</u>	<u>\$14,339</u>
<u>Port of Seattle</u>	<u>\$ 641</u>
<u>Port of Tacoma</u>	<u>\$ 641</u>
<u>City of Seattle</u>	<u>\$23,091</u>
<u>Snohomish County</u>	<u>\$11,350</u>
<u>City of Tacoma</u>	<u>\$ 7,704</u>

1 Or

2 2. Source Identification and Diagnostic Monitoring Information Repository Option
3 #2: Submit detailed Quarterly Source Identification Reports as follows:

4 a. The reports shall be submitted in a format provided by Ecology.

5 b. The reports shall describe and summarize:

6 i. All illicit discharges identified by the jurisdiction; the approaches
7 used to address each discharge; the status of resolving each
8 discharge during the quarter; any changes to source identification
9 methodology; and

10 ii. All environmental (including sediment, water quality, and biota) and
11 flow data collected over the course of conducting IDDE and/or
12 Source Control stormwater management program activities; and

13 iii. All environmental (including sediment, water quality, and biota) and
14 flow data collected pursuant to section S7 and Appendix 2 of this
15 permit if used for IDDE and/or Source Control stormwater
16 management program activities.

17 c. Quarterly Source Identification Reports are due 30 days following the
18 completion of each calendar quarter ending March 31, June 30, September
19 30, and December 31 throughout the permit term. The first Quarterly
20 Source Identification Report shall reflect both the third quarter activities of
21 2013 and the first quarter activities of 2014. The first report is due on May
22 1, 2014.

23 **S9. REPORTING REQUIREMENTS**

24 A. No later than March 31, of each year beginning in 20~~1408~~, each Permittee shall
25 submit an annual report. The reporting period for the first annual report will be from
26 the effective date of this permit through December 31, 20~~1307~~. The reporting period
27 for all subsequent annual reports shall be the previous calendar year unless otherwise
28 specified.

29 B. Permittees shall submit annual reports electronically using Ecology's WAWebDMR
30 program available on Ecology's website at [Draft Permit Placeholder for link to
31 appropriate Ecology webpage unless otherwise directed by Ecology] unless otherwise
32 directed by Ecology.¹⁶

¹⁶ Ecology will develop the online annual reporting webpage prior to issuing the final permit. The online annual report is proposed to include the questions and information requested as shown in draft Appendices 3 and 4. Ecology also expects to release draft questions and information for Phase I cities and counties during the October 19, 2011 to February 3, 2012 public comment period.

1 Permittees unable to submit electronically through Ecology's WWebDMR must
2 contact Ecology to request a waiver, which shall not be unreasonably withheld, and
3 obtain instructions on how to submit an annual report in an alternative format.

4 ~~Two printed copies and an electronic (PDF) copy of the annual report shall be~~
5 ~~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~~

6 A.C. Each Permittee is required to keep all records related to this permit and the SWMP
7 for at least five years. Except as required as a condition of the annual reports, records
8 need to be submitted to Ecology only upon request.

9 B.D. Each Permittee shall make all records related to this permit and the Permittee's
10 SWMP available to the public at reasonable times during business hours. The
11 Permittee will provide a copy of the most recent annual report to any individual or
12 entity, upon request.

- 13 1. A reasonable charge may be assessed by the Permittee for making photocopies
14 of records.
- 15 2. The Permittee may require reasonable advance notice of intent to review records
16 related to this permit.

17 C.E. The annual report for Permittees listed in S1.B. ~~and S1.C~~ shall include the following:-

18 ~~Each annual report shall include the following:~~

- 19 1. A copy of the Permittee's current Stormwater Management Program Report
20 (SWMPR) as required by S5.A.1.
- 21 2. Submittal of the annual report form as provided by Ecology pursuant to S9.B,
22 describing the status of implementation of the requirements of this permit
23 during the reporting period.
- 24 3. Attachments to the annual report form including summaries, descriptions,
25 reports, and other information as required, or as applicable, to meet the
26 conditions of this permit during the reporting period.
- 27 4. Certification and signature pursuant to G19.D, and notification of any changes
28 to authorization pursuant to G19.C.
- 29 5. Notification of any annexations, incorporations, or jurisdictional boundary
30 changes resulting in an increase or decrease in the Permittee's geographic area
31 of permit coverage during the reporting period, and implications for the SWMP.
- 32 ~~1. For each component of the SWMP the Permittee shall include the following:~~

- 1 a. ~~Describe the current implementation status including whether the~~
2 ~~Permittee has met the required implementation deadlines. If permit~~
3 ~~deadlines are not met, Permittees shall report the reasons why the~~
4 ~~requirement was not met and how the requirements will be met in the~~
5 ~~future.~~
- 6 b. ~~Compare program implementation results to the performance standards~~
7 ~~established in the permit.~~
- 8 c. ~~A summary of the number and nature of inspections performed by the~~
9 ~~Permittee as required by S5.C.5., S5.C.7., and S5.C.9.~~
- 10 d. ~~A summary of the nature and number of official enforcement actions taken~~
11 ~~to enforce provisions of this permit.~~

12 ~~The above information shall be submitted in a format approved by~~
13 ~~Ecology.~~

- 14 2. ~~A summary of any actions taken by the Permittee pursuant to S4.F.~~
- 15 3. ~~A summary of the status of any TMDL implementation requirements and any~~
16 ~~associated monitoring as required by S7.A.~~
- 17 4. ~~The Stormwater Monitoring Report required pursuant to S8.H.~~
- 18 5. ~~Any reporting requirements associated with S8.B. not included elsewhere in the~~
19 ~~annual report.~~
- 20 6. ~~If the Permittee is relying on another governmental entity to satisfy any of the~~
21 ~~obligations under this permit provide the name of the other entity and a~~
22 ~~description of the permit requirements performed by the other entity.~~
- 23 7. ~~Notification of any annexations, incorporations or jurisdictional boundary~~
24 ~~changes resulting in an increase or decrease in the Permittee's geographic area~~
25 ~~of permit coverage during the reporting period, and implications for the SWMP.~~
- 26 8. ~~The annual report shall include certification and signature pursuant to G19.D,~~
27 ~~and notification of any changes to authorization pursuant to G19.C.~~
- 28 9. ~~A summary of barriers to implementation of LID and actions taken to remove~~
29 ~~the barriers.~~
- 30 10. ~~A summary of the extent to which basin or watershed planning is being~~
31 ~~conducted in the Permittee's jurisdiction, either voluntarily, or pursuant to the~~
32 ~~Growth Management Act (Chapter 36.70A RCW) or any other requirement.~~
- 33 11. ~~In the annual report for calendar year 2010, the Permittee shall identify areas for~~
34 ~~potential basin or watershed planning that can incorporate development~~
35 ~~strategies as a water quality management tool to protect aquatic resources.~~
- 36 F. Annual Report for Secondary Permittees, including~~except for~~ the Port of Seattle and
37 the Port of Tacoma

1 Each annual report shall include the following:

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

5 2. Attachments to the annual report form including summaries, descriptions,
6 reports, and other information as required, or as applicable, to meet the
7 requirements of this permit during the reporting period.

8 3. Certification and signature pursuant to G19.D, and notification of any changes
9 to authorization pursuant to G19.C.

10 ~~1. All Secondary Permittees (except the Port of Seattle and the Port of Tacoma)~~
11 ~~shall complete the *Annual Report Form for Secondary Permittees* (Appendix 4)~~
12 ~~and submit it along with any supporting documentation to Ecology.~~

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

15 ~~a. Status of implementation of each component of the SWMP in section S6~~
16 ~~*Stormwater Management Program for Co-Permittees, and Secondary*~~
17 ~~*Permittees, as applicable to the Permittee.*~~

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

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

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

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

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

30 ~~2.4. Secondary Permittees shall include with the annual report a n~~
31 ~~Notification of any jurisdictional boundary changes resulting in an increase or decrease in the~~
32 ~~Permittee's geographic area of permit coverage during the reporting period, and~~
33 ~~implications for the SWMP.~~

34 ~~D. Annual Report for the Port of Tacoma and the Port of Seattle~~

35 ~~The annual report shall include the following:~~

36 ~~1. A current copy of the Permittees Stormwater Management Plan as required by~~
37 ~~S6.A.5.~~

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- ~~2. Appendix 3—Annual Report Form for the Port of Seattle and the Port of Tacoma, which is intended to summarize the Permittees compliance with the conditions of this permit including the status of implementation of each component of the SWMP required by S6 Stormwater Management Program for Co-Permittees, and Secondary Permittees, as applicable to the Permittee.~~
- ~~3. The Permittee’s SWMP implementation schedule and plans for meeting permit deadlines, and a discussion of 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.~~
- ~~4. The stormwater monitoring report required pursuant to S8.H.~~
- ~~5. 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.~~
- ~~6. If applicable, notice that the MS4 is relying on another governmental entity to satisfy any of the obligations under this permit.~~
- ~~7. Updated information from the prior annual report plus any new information received during the reporting period, according to S8.B.~~
- ~~8. Certification and signature pursuant to G19.D. and notification of any changes to authorization pursuant to G19.C.~~

1 **GENERAL CONDITIONS**

2 **G1. DISCHARGE VIOLATIONS**

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

5 **G2. PROPER OPERATION AND MAINTENANCE**

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

10 **G3. NOTIFICATION OF DISCHARGE INCLUDING SPILLS**

11 If a Permittee has knowledge of a discharge, including spill(s), into or from a **municipal**
12 **separate storm sewer system owned or operated by the Permittee** ~~municipal storm~~
13 ~~sewer~~MS4, which could constitute a threat to human health, welfare, or the environment,
14 the Permittee, shall:

- 15 A. Take appropriate action to correct or minimize the threat to human health, welfare
16 and/or the environment. ~~, and~~
- 17 B. Notify the Ecology regional office and other appropriate spill response authorities
18 immediately but in no case later than within 24 hours of obtaining that knowledge.
19 The Department of Ecology's Regional Office 24-hr. number is 425-649-7000 for the
20 Northwest Regional Office and 360-407-6300 for the Southwest Regional Office.
- 21 C. Immediately report spills or discharges which might cause bacterial contamination of
22 shellfish marine waters, such as broken sewer lines and failing onsite septic systems,
23 to the Ecology regional office and to the Department of Health, Shellfish Program.
24 The Department of Health's Shellfish 24-hr. number is 360-236-3330.
- 25 D. Immediately report spills or discharges of oils or hazardous materials-substances to the
26 Ecology regional office and to the Washington Emergency Management Division, 1-800-
27 258-5990.

28 **G4. BYPASS PROHIBITED**

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

- 32 A. Bypass is: (1) unavoidable to prevent loss of life, personal injury, or severe property
33 damage; or (2) necessary to perform construction or maintenance-related activities
34 essential to meet the requirements of the Clean Water Act (*CWA*); and
- 35 B. There are no feasible alternatives to bypass, such as the use of auxiliary treatment
36 facilities, retention of untreated stormwater, or maintenance during normal dry
37 periods.

1 "Severe property damage" means substantial physical damage to property, damage to the
2 treatment facilities which would cause them to become inoperable, or substantial and
3 permanent loss of natural resources which can reasonably be expected to occur in the
4 absence of a bypass. Severe property damage does not mean economic loss.

5 **G5. RIGHT OF ENTRY**

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

- 8 A. To enter upon the Permittee's premises where a discharge is located or where any
9 records must be kept under the terms and conditions of this permit;
- 10 B. To have access to, and copy at reasonable cost and at reasonable times, any records
11 that must be kept under the terms of the permit;
- 12 C. To inspect at reasonable times any monitoring equipment or method of monitoring
13 required in the permit;
- 14 D. To inspect at reasonable times any collection, treatment, pollution management, or
15 discharge facilities; and
- 16 E. To sample at reasonable times any discharge of pollutants.

17 **G6. DUTY TO MITIGATE**

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

21 **G7. PROPERTY RIGHTS**

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

23 **G8. COMPLIANCE WITH OTHER LAWS AND STATUTES**

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

26 **G9. MONITORING**

- 27 A. Representative Sampling: Samples and measurements taken to meet the requirements
28 of this permit shall be representative of the volume and nature of the monitored
29 discharge, including representative sampling of any unusual discharge or discharge
30 condition, including bypasses, upsets, and maintenance-related conditions affecting
31 effluent quality.
- 32 B. Records Retention: The Permittee shall retain records of all monitoring information,
33 including all calibration and maintenance records and all original recordings for
34 continuous monitoring instrumentation, copies of all reports required by this permit,
35 and records of all data used to complete the application for this permit, for a period of

1 at least five years. This period of retention shall be extended during the course of any
2 unresolved litigation regarding the discharge of pollutants by the Permittee or when
3 requested by Ecology. On request, monitoring data and analysis must be provided to
4 Ecology.

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

10 D. Test Procedures: All sampling and analytical methods used to meet the monitoring
11 requirements ~~in this permit specified in the approved stormwater management~~
12 ~~program~~ shall conform to the Guidelines Establishing Test Procedures for the
13 Analysis of Pollutants contained in 40 CFR Part 136, unless otherwise specified in
14 this permit or approved in writing by Ecology.

15 E. Flow Measurement: Where flow measurements are required by other conditions of
16 this Permit, appropriate flow measurement devices and methods consistent with
17 accepted scientific practices shall be selected and used to ensure the accuracy and
18 reliability of measurements of the volume of monitored discharges. The devices must
19 be installed, calibrated, and maintained to ensure that the accuracy of the
20 measurements are consistent with the accepted industry standard for that type of
21 device. Frequency of calibration shall be in conformance with manufacturer's
22 recommendations or at a minimum frequency of at least one calibration per year.
23 Calibration records should be maintained for a minimum of three years.

24 F. Lab Accreditation: ~~Where data collection is required by other conditions of this~~
25 ~~Permit, a~~All monitoring data, except for flow, temperature, conductivity, pH, total
26 residual chlorine, and other exceptions approved by Ecology, shall be prepared by a
27 laboratory registered or accredited under the provisions of, Accreditation of
28 Environmental Laboratories, ~~c~~Chapter 173-50 WAC. Soils and hazardous waste data
29 are exempted from this requirement pending accreditation of laboratories for analysis
30 of these media by Ecology.

31 G. Additional Monitoring: Ecology may establish specific monitoring requirements in
32 addition to those contained in this permit by administrative order or permit
33 modification.

34 **G10. REMOVED SUBSTANCES**

35 With the exception of decant from street waste vehicles, the Permittee must not allow
36 collected screenings, grit, solids, sludges, filter backwash, or other pollutants removed in
37 the course of treatment or control of stormwater to be resuspended or reintroduced to the
38 storm sewer system or to waters of the state. Decant from street waste vehicles resulting
39 from cleaning stormwater facilities may be reintroduced only when other practical means
40 are not available and only in accordance with the Street Waste Disposal Guidelines in
41 Appendix 6. Solids resulting from cleaning stormwater facilities may be reused or
42 delivered to a solid waste disposal site qualified to receive the material (see Appendix 6).

1 **G11. SEVERABILITY**

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

6 **G12. REVOCATION OF COVERAGE**

7 The director may terminate coverage under this *General Permit* in accordance with Chapter
8 43.21B RCW and Chapter 173-226 WAC. Cases where coverage may be terminated
9 include, but are not limited to the following:

- 10 A. Violation of any term or condition of this general permit;
 - 11 B. Obtaining coverage under this general permit by misrepresentation or failure to
12 disclose fully all relevant facts;
 - 13 C. A change in any condition that requires either a temporary or permanent reduction or
14 elimination of the permitted discharge;
 - 15 D. A determination that the permitted activity endangers human health or the
16 environment, or contributes significantly to water quality standards violations;
 - 17 E. Failure or refusal of the Permittee to allow entry as required in RCW 90.48.090;
 - 18 F. Nonpayment of permit fees assessed pursuant to RCW 90.48.465;
- 19 Revocation of coverage under this general permit may be initiated by Ecology or
20 requested by any interested person.

21 **G13. TRANSFER OF COVERAGE**

22 The director may require any discharger authorized by this general permit to apply for and
23 obtain an individual permit in accordance with Chapter 43.21B RCW and Chapter 173-
24 226 WAC.

25 **G14. GENERAL PERMIT MODIFICATION AND REVOCATION**

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

- 29 A. A change occurs in the technology or practices for control or abatement of pollutants
30 applicable to the category of dischargers covered under this general permit;
- 31 B. Effluent limitation guidelines or standards are promulgated pursuant to the CWA or
32 chapter 90.48RCW, for the category of dischargers covered under this general permit;
- 33 C. A water quality management plan containing requirements applicable to the category
34 of dischargers covered under this general permit is approved;

- 1 D. Information is obtained which indicates that cumulative effects on the environment
- 2 from dischargers covered under this general permit are unacceptable; or
- 3 E. Changes made to State law reference this permit.

4 **G15. REPORTING A CAUSE FOR MODIFICATION OR REVOCATION**

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

12 **G16. APPEALS**

- 13 A. The terms and conditions of this general permit, as they apply to the appropriate class
- 14 of dischargers, are subject to appeal within thirty days of issuance of this general
- 15 permit, in accordance with Chapter 43.21B RCW, and ~~C~~chapter 173-226 WAC.
- 16 B. The terms and conditions of this general permit, as they apply to an individual
- 17 discharger, can be appealed, in accordance with Chapter 43.21B RCW, within thirty
- 18 days of the effective date of coverage of that discharger. Consideration of an appeal
- 19 of general permit coverage of an individual discharger is limited to the general
- 20 permit's applicability or nonapplicability to that individual discharger.
- 21 C. The appeal of general permit coverage of an individual discharger does not affect any
- 22 other dischargers covered under this general permit. If the terms and conditions of
- 23 this general permit are found to be inapplicable to any individual discharger(s), the
- 24 matter shall be remanded to Ecology for consideration of issuance of an individual
- 25 permit or permits.
- 26 D. Modifications of this permit can be appealed in accordance with Chapter 43.21B
- 27 RCW and ~~c~~Chapter 173-226 WAC.

28 **G17. PENALTIES**

29 40 CFR 122.41(a)(2) and (3), 40 CFR 122.41(j)(5), and 40 CFR 122.41(k)(2) are hereby
30 incorporated into this permit by reference.

31 **G18. DUTY TO REAPPLY**

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

34 **G19. CERTIFICATION AND SIGNATURE**

35 All ~~applications, reports, or formal submittals~~ information submitted to Ecology shall be
36 signed and certified.

- 1 A. All permit applications shall be signed by either a principal executive officer or
2 ranking elected official.
- 3 B. All ~~formal submittals~~ reports required by this pPermit ~~and other information requested~~
4 ~~by Ecology~~ shall be signed by a person described above or by a duly authorized
5 representative of that person. A person is a duly authorized representative only if:
- 6 1. The authorization is made in writing by a person described above and submitted
7 to Ecology, and
- 8 2. The authorization specifies either an individual or a position having
9 responsibility for the overall development and implementation of the
10 stormwater management program. (A duly authorized representative may thus
11 be either a named individual or any individual occupying a named position.)
- 12 C. Changes to authorization. If an authorization under General Condition G19.B.2 is no
13 longer accurate because a different individual or position has responsibility for the
14 overall development and implementation of the stormwater management program, a
15 new authorization satisfying the requirements of General Condition G19.B.2 must be
16 submitted to Ecology prior to or together with any reports, information, or
17 applications to be signed by an authorized representative.
- 18 D. Certification. Any person signing a ~~document~~ formal submittal under this permit must
19 make the following certification:
- 20 "I certify under penalty of law, that this document and all attachments were prepared
21 under my direction or supervision in accordance with a system designed to assure that
22 qualified personnel properly gathered and evaluated the information submitted. Based
23 on my inquiry of the person or persons who manage the system or those persons
24 directly responsible for gathering information, the information submitted is, to the
25 best of my knowledge and belief, true, accurate, and complete. I am aware that there
26 are significant penalties for submitting false information, including the possibility of
27 fine and imprisonment for willful violations."

28 **G20. NON-COMPLIANCE NOTIFICATION**

- 29 In the event a Permittee is unable to comply with any of the terms and conditions of this
30 permit, the Permittee must:
- 31 A. Notify Ecology of the failure to comply with the permit terms and conditions in
32 writing within 30 days of becoming aware that the non-compliance has occurred. The
33 written notification to Ecology must include all of the following:
- 34 1. A description of the non-compliance, including the reference(s).
- 35 2. Beginning and ending dates of the non-compliance, or if the Permittee has not
36 corrected the non-compliance, the anticipated date of correction.
- 37 3. Steps taken or planned to reduce, eliminate, or prevent reoccurrence of the non-
38 compliance.

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

2 **G21. UPSETS**

3 Permittees shall meet the conditions of 40 CFR 122.41(n) regarding “Upsets.” The
4 conditions are as follows:

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

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

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

- 20 1. An upset occurred and that the Permittee can identify the cause(s) of the upset;
- 21 2. The permitted facility was at the time being properly operated; and
- 22 3. The Permittee submitted notice of the upset as required in 40 CFR
23 122.41(l)(6)(ii)(B) (24-hour notice of noncompliance).
- 24 4. The Permittee complied with any remedial measures required under 40 CFR
25 122.41(d) (Duty to Mitigate).

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

28
29

1 **DEFINITIONS AND ACRONYMS**

2 “40 CFR” means Title 40 of the Code of Federal Regulations, which is the codification of the
3 general and permanent rules published in the Federal Register by the executive departments
4 and agencies of the federal government.

5 “AKART” means All Known, Available and Reasonable methods of prevention, control and
6 Treatment. See also State Water Pollution Control Act, Chapter 90.48.010 and 90.48.520
7 RCW.

8 “All Known, Available and Reasonable methods of prevention, control and Treatment” refers to
9 the State Water Pollution Control Act, Chapter 90.48.010 and 90.48.520 RCW.

10 “Applicable TMDL” means a TMDL which has been approved by EPA on or before the issuance
11 date of this permit, or prior to the date that Ecology issues coverage under the permit,
12 whichever is later. ~~is granted.~~

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

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

22 “BMP” means Best Management Practice.

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

24 ~~“Certified Erosion and Sediment Control Lead” (CESCL) means an individual who is~~
25 ~~knowledgeable in the principles and practices of erosion and sediment control. The CESCL~~
26 ~~must have the skills to assess: the site conditions and construction activities that could impact~~
27 ~~the quality of stormwater; and the effectiveness of erosion and sediment control measures~~
28 ~~used to control the quality of stormwater discharges. The CESCL must have current~~
29 ~~certification through an approved erosion and sediment control training program that meets~~
30 ~~the minimum training standards established by Ecology.~~

31 ~~“CESCL” means Certified Erosion and Sediment Control Lead.~~

32 ~~“Common Plan of Development or Sale” means a site where multiple separate and distinct~~
33 ~~construction activities may be taking place at different times on different schedules and/or by~~
34 ~~different contractors, but still under a single plan. Examples include: 1) phase projects and~~
35 ~~projects with multiple filings or lots, even if the separate phases or filings/lots will be~~
36 ~~constructed under separate contract or by separate owners (e.g., a development where lots are~~
37 ~~sold to separate builders); 2) a development plan that may be phased over multiple years, but~~
38 ~~is still under a consistent plan for long term development; 3) projects in a contiguous area~~
39 ~~that may be unrelated but still under the same contract, such as construction of a building~~
40 ~~extension and a new parking lot at the same facility; and 4) linear projects such as roads,~~
41 ~~pipelines, or utilities. If the project is part of a common plan of development or sale, the~~

1 ~~disturbed area of the entire plan must be used in determine permit requirements.~~ “Common
2 Plan of Development or Sale” means project proposals or parts of proposals that are related
3 to each other closely enough to be, in effect, a single course of action. Project proposals or
4 parts of proposals meet this standard if they: cannot or will not proceed unless the other
5 proposals (or parts of proposals) are implemented simultaneously with them; or are
6 interdependent parts of a larger proposal and depend on the larger proposal as their
7 justification or for their implementation. The intent of this definition is to apply the anti-
8 piecemealing or anti-segmentation rule imposed by SEPA. See WAC 197-11-060(3)(b).”

9 “Component” or “Program Component” means ~~the an~~ elements of the sStormwater
10 mManagement pProgram listed in Special Condition S5 *Stormwater Management Program*
11 *for Permittees* or S6 *Stormwater Management Program for Co-Permittees and Secondary*
12 *Permittees, or S7 Compliance with Total Maximum Daily Load Requirements, or S8*
13 *Monitoring.*

14 “Co-Permittee” means an owner or operator of a municipal separate storm sewer (MS3)
15 ~~municipal separate storm sewer which is in a cooperative agreement with at least one other~~
16 ~~applicant for that has co-applied for permit coverage under this permit. A co-permittee is an~~
17 ~~owner or operator of a regulated located within or in proximity to another regulated MS4. A~~
18 ~~co-permittee with another permittee, and that is only responsible for permit conditions~~
19 relating to the discharges from the MS4 ~~the co-permittee owns or operates for which it is~~
20 ~~operator.~~ See also 40 CFR 122.26(b)(1).

21 “Circuit” means a portion of a municipal separate storm sewer system (MS34) discharging to a
22 single point and serving a discrete area determined by both topography and the configuration
23 of the MS34. The discharge point may be: an outfall, physical interconnection with another
24 MS34 or a private storm system, or a junction within the MS4.

25 “CWA” means the federal Clean Water Act (formerly referred to as the Federal Water Pollution
26 Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as
27 amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. (6-483 and Pub. L. 97-117, 33 U.S.C. 1251
28 et.seq.).

29 ~~“Detailed Implementation Plan” means the formal TMDL implementation plan, also known as a~~
30 ~~Water Quality Improvement Plan.~~

31 ~~“DIP” means detailed implementation plan.~~

32 “Director” means the Director of the Washington State Department of Ecology, or an authorized
33 representative.

34 ~~“Discharge” for the purpose of this permit, unless indicated otherwise, refers to discharges from~~
35 ~~municipal separate storm sewers of the Permittees. See also 40 CFR 122.2.~~

36 “Entity” means a governmental body, or a public or private organization.

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

40 “Ground water” means water in a saturated zone or stratum beneath the surface of the land or
41 below a surface water body.

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

4
5 “Heavy equipment maintenance or storage yard” means an uncovered area where any heavy
6 equipment, such as mowing equipment, excavators, dump trucks, backhoes, or bulldozers are
7 washed or maintained, or where at least five pieces of heavy equipment are stored-on a long
8 term basis ~~on a long term basis.~~

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

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

14 “Illicit connection” means any infrastructure connection to the MS4 man-made conveyance that
15 is not designed, permitted or used for collection and conveying stormwater or other allowed
16 discharges as specified in this permit. connected to a municipal separate storm sewer without
17 a permit, excluding roof drains and other similar type connections. Examples include sanitary
18 sewer connections, floor drains, ~~channels,~~ pipelines, conduits, inlets, or outlets that are
19 connected directly to the municipal separate storm sewer system.

20 “Illicit discharge” means any discharge-into or from a municipal separate storm sewer that is not
21 composed entirely of storm-water or which is not an allowed discharge as specified in this
22 Permit. Illicit discharges include, but are not limited to, spills, and discharges associated with
23 illicit connections, and infiltration/exfiltration of non-stormwater that takes place in pipe
24 bedding, except discharges pursuant to a NPDES permit (other than the NPDES permit for
25 discharges from the municipal separate storm sewer) and discharges resulting from fire
26 fighting activities.

27 “Industrial or Construction Activity” means manufacturing, processing or raw materials storage
28 areas at an industrial plant; or clearing, grading and/or excavation. These activities are
29 required to NPDES permit coverage in accordance with 40 CFR 122.26.

30 “Integrated Pest Management (IPM)” means a coordinated decision-making and action process
31 that uses the most appropriate pest control methods and strategy in an environmentally and
32 economically sound manner to meet agency programmatic pest management objectives. The
33 elements of integrated pest management include:

- 34 (a) Preventing pest problems;
35 (b) Monitoring for the presence of pests and pest damage;
36 (c) Establishing the density of the pest population, that may be set at zero, that can be
37 tolerated or correlated with a damage level sufficient to warrant treatment of the problem
38 based on health, public safety, economic, or aesthetic thresholds;
39 (d) Treating pest problems to reduce populations below those levels established by damage
40 thresholds using strategies that may include biological, cultural, mechanical, and
41 chemical control methods and that must consider human health, ecological impact,
42 feasibility, and cost-effectiveness; and
43 (e) Evaluating the effects and efficacy of pest treatments.

1 "Pest" means, but is not limited to, any insect, rodent, nematode, snail, slug, weed, and any form
2 of plant or animal life or virus, except virus, bacteria, or other microorganisms on or in a
3 living person or other animal or in or on processed food or beverages or pharmaceuticals,
4 which is normally considered to be a pest, or which the director of the department of
5 agriculture may declare to be a pest.

6 "Large Municipal Separate Storm Sewer System (Large MS4)" means all municipal Separate
7 Storm Sewers located in an incorporated place with a population of 250,000 or more, a
8 County with unincorporated urbanized areas with a population of 250,000 or more according
9 to the 1990 decennial census by the Bureau of Census. See also 40 CFR 122.26(b)(4).

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

12 "Low Impact Development" (LID) means a stormwater and land use management strategy that
13 strives to -and land development strategy applied at the parcel and subdivision scale that
14 emphasizes conservation and use of on-site natural features integrated with engineered,
15 small-scale hydrologic controls to more closely mimic pre-development disturbance
16 hydrologic processes functions of infiltration, filtration, storage, evaporation and transpiration
17 by emphasizing conservation, use of on-site natural features, site planning, and distributed
18 stormwater management practices that are integrated into a project design..

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

22 "LID BMP" means low impact development best management practices.

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

29 "Major Municipal Separate Storm Sewer Outfall" means a municipal separate storm sewer
30 outfall from a single pipe with an inside diameter of 36 inches or more, or its equivalent
31 (discharge from a single conveyance other than circular pipe which is associated with a
32 drainage area of more than 50 acres); or for municipal separate storm sewers that receive
33 stormwater from lands zoned for industrial activity (based on comprehensive zoning plans or
34 the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12
35 inches or more or from its equivalent (discharge from other than a circular pipe associated
36 with a drainage area of 12 acres or more). See also 40 CFR 122.26(b)(5).

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

39 "MBAS" means Methylene Blue Activated Substances.

40 "Methylene Blue Activated Substances" are anionic surfactants, including linear alkylate
41 sulfonate and alkyl sulfate, which react with a chemical called methylene blue to form a blue-
42 chloroform-soluble complex; the intensity of color is proportional to concentration

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

7 “Medium Municipal Separate Storm Sewer System (Medium MS4)” means all Municipal
8 Separate Storm Sewer ~~s (MS3s) s Systems (MS3s)~~ located in an incorporated place with a
9 population of more than 100,000 but less than 250,000, or a county with unincorporated
10 urbanized areas of more than 100,000 but less than 250,000 according to the 1990 decennial
11 census by the Bureau of Census. See also 40 CFR 122.26(b)(7).

12 ~~“Municipal Separate Storm Sewer (MS3)” means a conveyance, or system of conveyances~~
13 ~~(including roads with drainage systems, municipal streets, catch basins, curbs, gutters,~~
14 ~~ditches, manmade channels, or storm drains):~~

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

22 ~~(b) designed or used for collecting or conveying stormwater;~~

23 ~~(c) which is not a combined sewer; and~~

24 ~~(d) which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2~~
25 ~~means a conveyance, or system of conveyances (including roads with drainage systems,~~
26 ~~municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):~~

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

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

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

37
38 “Municipal separate storm sewer system (MS4)” means ~~all separate storm sewers that are~~
39 ~~defined as “large” or “medium” or “small” municipal separate storm sewer systems. See also~~
40 ~~40 CFR 122.26(b)(18) all separate storm sewers that are defined as “large” or “medium” or~~
41 ~~“small” municipal separate storm sewer systems. See also 40 CFR 122.26(b)(18) a~~
42 ~~conveyance, or system of conveyances (including roads with drainage systems, municipal~~
43 ~~streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):~~

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

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

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

11 “National Pollutant Discharge Elimination System (NPDES)” means the national program for
12 issuing, modifying, revoking, and reissuing, terminating, monitoring and enforcing permits,
13 and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and
14 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the
15 state from point sources. These permits are referred to as NPDES permits and, in Washington
16 State, are administered by the Washington Department of Ecology.

17 ~~“New Secondary Permittee” means a Secondary Permittee that is covered under a Municipal~~
18 ~~Stormwater General Permit and was not covered by the permit prior to August 1, 2013.~~

19 ~~“Notice of Intent (NOI)” means the application for, or a request for coverage under a General~~
20 ~~NPDES Permit pursuant to WAC 173-226-200.~~

21 ~~“Notice of Intent for Construction Activity” means the application form for coverage under the~~
22 ~~Construction Stormwater General Permit.~~

23 ~~“Notice of Intent for Industrial Activity” means the application form for coverage under the~~
24 ~~General Permit for Stormwater Discharges Associated with Industrial Activities.~~

25 “NPDES” means National Pollutant Discharge Elimination System.

26 “Outfall” means point source as defined by 40 CFR 122.2 at the point where a municipal
27 separate storm sewer discharges to ~~surface or ground~~ waters of the State. ~~Outfall and and~~
28 does not include ~~open conveyances connecting two municipal separate storm sewers, or~~
29 ~~open conveyances connecting two municipal separate storm sewers, or~~ pipes, tunnels, or
30 other conveyances which connect segments of the same stream or other ~~surface~~ waters ~~of the~~
31 ~~State of the State~~ and are used to convey ~~primarily surface~~ waters ~~of the State of the State.~~

32 ~~“Permittee” means unless otherwise noted, any Primary Permittee includes Permittee, Co-~~
33 ~~Permittee, or Secondary Permittee, and New Secondary Permittee unless specifically stated~~
34 ~~otherwise for a particular section of this permit.~~

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

1 | “Qualified Personnel or Consultant” means ~~someone~~ staff members or contractors who have
2 | had professional training in the aspects of stormwater management for which they are
3 | responsible and are under the functional control of the Permittee. Qualified Personnel may be
4 | staff members, contractors, or volunteers.

5 | “RCW” means the Revised Code of Washington State.

6 | “Runoff” ~~means is~~ water that travels across the land surface, ~~or laterally through the soil near the~~
7 | ~~land surface,~~ and discharges to water bodies either directly or through a collection and
8 | conveyance system. ~~Runoff includes stormwater and water from other sources that travels~~
9 | ~~across the land surface.~~ See also “Stormwater.”

10 | “Secondary Permittee” is an owner or operator of a municipal separate storm sewer which is not
11 | a city, town or county. Secondary Permittees include special purpose districts and other
12 | public entities ~~that meet the criteria identified in S1.D.E.1 which operate municipal separate~~
13 | ~~storm sewers.~~

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

16 | “Significant contributor” ~~means a discharge that contributes a loading of pollutants considered to~~
17 | ~~be sufficient to cause or exacerbate the deterioration of receiving water quality or instream~~
18 | ~~habitat conditions.~~

19 | “Sediment/Erosion-Sensitive Feature” ~~means an area subject to significant degradation due to the~~
20 | ~~effect of construction runoff or areas requiring special protection to prevent erosion. See~~
21 | ~~Appendix 6 Determining Construction Site Sediment Transport Potential for a more detailed~~
22 | ~~definition.~~

23 | “Stormwater” means runoff during and following precipitation and snowmelt events, including
24 | surface runoff, drainage, and interflow.

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

30 | “Stormwater facilities regulated by the Permittee” means permanent stormwater treatment and
31 | flow control BMPs/facilities and catch basins located in the geographic area covered by the
32 | permit and which are not owned by the Permittee, and are known by the permittee to
33 | discharge into municipal separate storm sewers owned or operated by the Permittee.

34 | “Stormwater Management Manual for Western Washington” ~~means the 5-volume technical~~
35 | ~~manual (Publication Nos. 05-10-029 through 05-10-033 for the 2005 version) published by~~
36 | ~~Ecology in February 2005. A proposed 2012 version is currently under public review and~~
37 | ~~comment.~~ means the 5-volume technical manual (2012 version, Publication Nos.
38 | through) published by Ecology.”

39 | “Stormwater Management Program (SWMP)” means a set of actions and activities designed to
40 | reduce the discharge of pollutants from the ~~regulated small MS4s~~ owned and operated by
41 | the permittee and covered by this permit to the maximum extent practicable and to protect
42 | water quality, and comprising the components listed in S5 or S6 of this Permit and any

1 applicable actions required by S7 (TMDL) and Appendix 2, activities required by S8
2 (monitoring), and activities required to meet S4.F obligations. ~~additional actions necessary~~
3 ~~to meet the requirements of this Permit~~ applicable TMDLs.

4 “Stormwater Treatment and Flow Control BMPs/Facilities” means detention facilities, treatment
5 BMPs/facilities, bioretention, vegetated roofs, and permeable pavements that help meet
6 minimum requirement 6 (treatment), 7 (flow control), or both.

7 “SWMPR” means Stormwater Management Program Report.

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

19 “Urban/higher density rural sub-basins” means all areas within or proposed to be within the
20 urban growth area (UGA), or any sub-basin outside the UGA with 50% or more area
21 comprised of lots less than 5 acres.

22 “Vehicle Maintenance or Storage Facility” means an uncovered area where any vehicles are
23 regularly washed or maintained, or where at least 10 vehicles are stored.

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

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

30 “Water Quality Standards” means Surface Water Quality Standards, ~~C~~chapter 173-201A WAC,
31 Ground Water Quality Standards, Chapter 173-200 WAC, and Sediment Management
32 Standards, ~~c~~Chapter 173-204 WAC.

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

City of Seattle Comments – Attachment 3

Note: Seattle recommends the changes shown via tracked changes and highlighted.

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 new or redevelopment projects are met.
- Resurfacing by upgrading from dirt to gravel, asphalt, or concrete; upgrading from gravel to asphalt, or concrete; or upgrading from a bituminous surface treatment (“chip seal”) to asphalt or concrete: These are considered new impervious surfaces and are subject to the minimum requirements that are triggered when the thresholds identified for new or redevelopment projects are met.

Underground utility projects:

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

~~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. ~~The term generally includes roads or streets considered collectors. 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. It does not include A local access roads which are generally limited to providing access to abutting property. connects individual homes to a collector.~~ See also RCW 35.78.010 and RCW 47.05.021.

Bioretention BMPs – Engineered facilities that ~~store-retain and~~ treat stormwater ~~to attenuate or reduce pollutant loading~~ by passing it through a specified soil profile. Refer to the [Stormwater Management Manual for Western Washington \(2012\), Chapter 7 of Volume V](#) for Bioretention BMP types and design specifications.

Certified Erosion and Sediment Control Lead (CESCL) - means an individual who has current certification through an approved erosion and sediment control training program that meets the minimum training standards established by the [Washington Department of Ecology Department\(Ecology\)](#) (see BMP C160 in the *Stormwater Management Manual for Western Washington (20052012)*). A CESCL is knowledgeable in the principles and practices of erosion and sediment control. The CESCL must have the skills to assess site conditions and construction activities that could impact the quality of stormwater and, the effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges. Certification is obtained through an Ecology approved erosion and sediment control course. Course listings are provided online at Ecology’s web site.

Converted Pervious Surface – The surfaces on a project site where native forest or pasture vegetation is converted to lawn or landscaped areas, or where native forest vegetation is converted to pasture.

Effective Impervious surface – Those impervious surfaces that are connected via sheet flow or discrete conveyance to a drainage system. Impervious surfaces on residential development are considered ineffective if: 1) the runoff is dispersed through at least one hundred feet of native vegetation in accordance with BMP T5.30 – “Full Dispersion” as described in Chapter 5 of Volume V of the Stormwater Management Manual for Western Washington (2005/12); 2) residential roof runoff is infiltrated in accordance with Downspout Infiltration Systems in Volume III; or 3) approved continuous runoff modeling methods indicate that the entire runoff file is infiltrated.

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

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

Highway – A main public road connecting towns and cities

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

Land disturbing activity – Any activity that results in 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. Stormwater facility maintenance is not considered land disturbing activity if conducted according to established standards and procedures.

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

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

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

Maintenance – Repair and maintenance includes activities conducted on currently serviceable structures, facilities, and equipment that involves no expansion or use beyond that previously existing and results in no significant adverse hydrologic impact. It includes those usual activities taken to prevent a decline, lapse, or cessation in the use of structures and systems. Those usual activities may include replacement of dysfunctional facilities, including cases where environmental permits require replacing an existing structure with a different type structure, as long as the functioning characteristics of the original structure are not changed. One example is the replacement of a collapsed, fish blocking, round culvert with a new box culvert under the same span, or width, of roadway. 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.

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

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

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

Pollution-generating impervious surface (PGIS) – Those impervious surfaces considered to be a significant source of pollutants in stormwater runoff. Such surfaces include those which are

subject to: vehicular use; industrial activities (as further defined in the glossary [of the Stormwater Management Manual for Western Washington \(2012\)](#)); 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).

Pollution-generating pervious surfaces (PGPS) – Any non-impervious surface subject to [vehicular use, industrial activities \(as further defined in the glossary of the Stormwater Management Manual for Western Washington \(2012\)\)](#); or storage of erodible or leachable materials, wastes, or chemicals, and that receive direct rainfall or run-on or blow-in of rainfall, use of pesticides and fertilizers, or loss of soil. Typical PGPS include [permeable paved roads, driveways and parking lots](#), 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.

Rain Garden – [A non-engineered shallow landscaped depression, with compost-amended native soils and adapted plants. The depression ponds and temporarily stores stormwater runoff from adjacent areas. Designed to allow stormwater to pass through the amended soil profile. Stormwater that exceeds the storage capacity is designed to overflow to an adjacent drainage system. Refer to the Rain Garden Handbook for Western Washington Homeowners \(WSU 2007 or as revised\) for rain garden specifications and construction guidance.](#)

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. [Ground water to which surface runoff is directed by infiltration.](#)

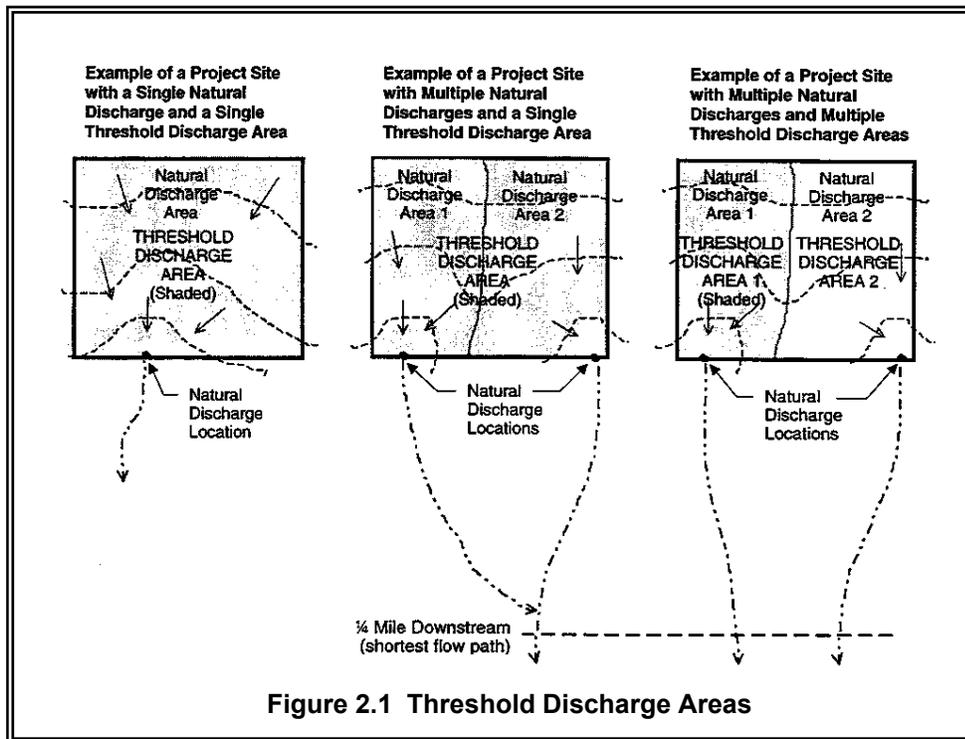
Redevelopment – On a site that is already substantially developed (i.e., has 35% or more of existing impervious surface coverage), the creation or addition of impervious surfaces; the expansion of a building footprint or addition or replacement of a structure; structural development including construction, 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~~ [down to the](#) foundation. For other impervious surfaces, the removal down to bare soil or base course and replacement.

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

Source control BMP – A structure or operation that is intended to prevent pollutants from coming into contact with stormwater through physical separation of areas or careful management of activities that are sources of pollutants. 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 (2005/2012)* 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.



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

The following are not considered subject to regular vehicular use: paved bicycle pathways separated from and not subject to drainage from roads for motor vehicles, bike lanes adjacent to the traveled lane of a roadway, fenced fire lanes, and infrequently used maintenance access roads.

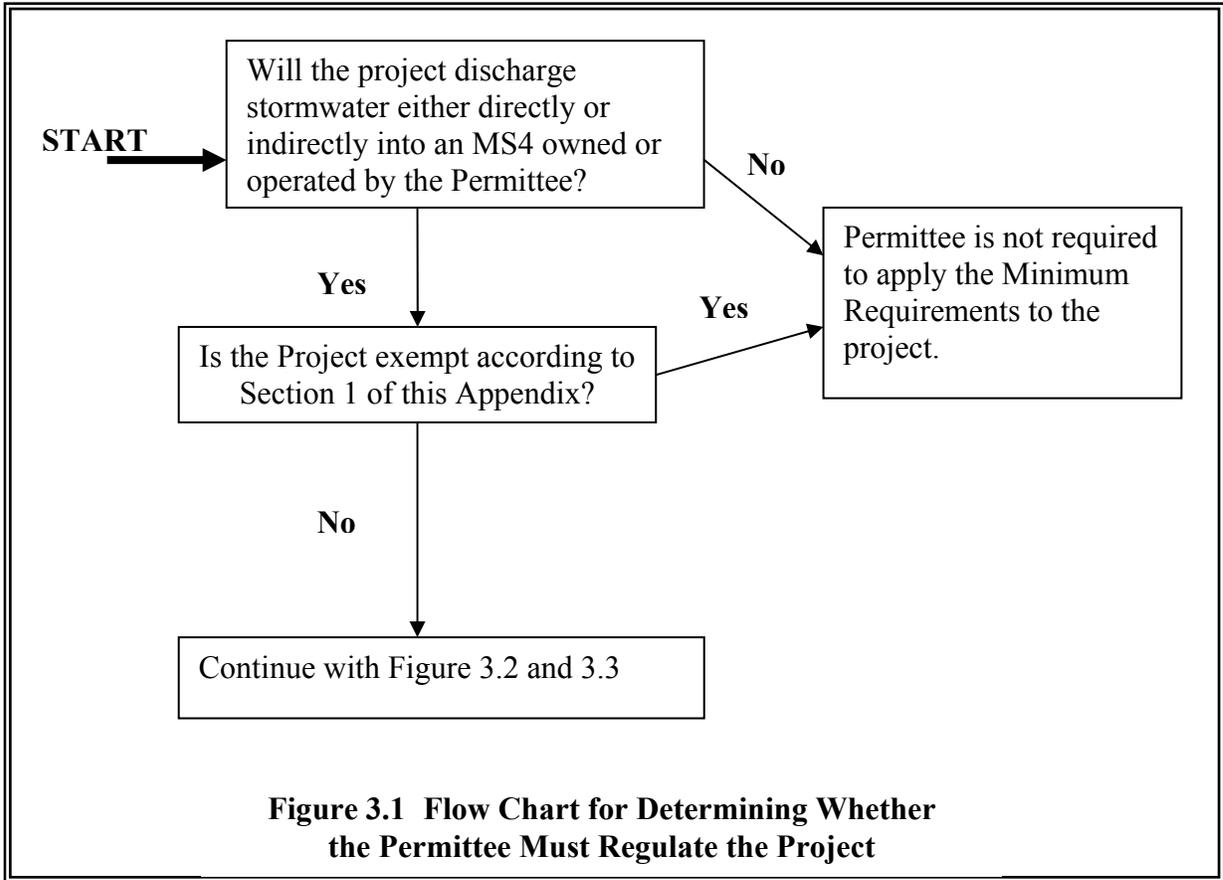
Wetland – Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes,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

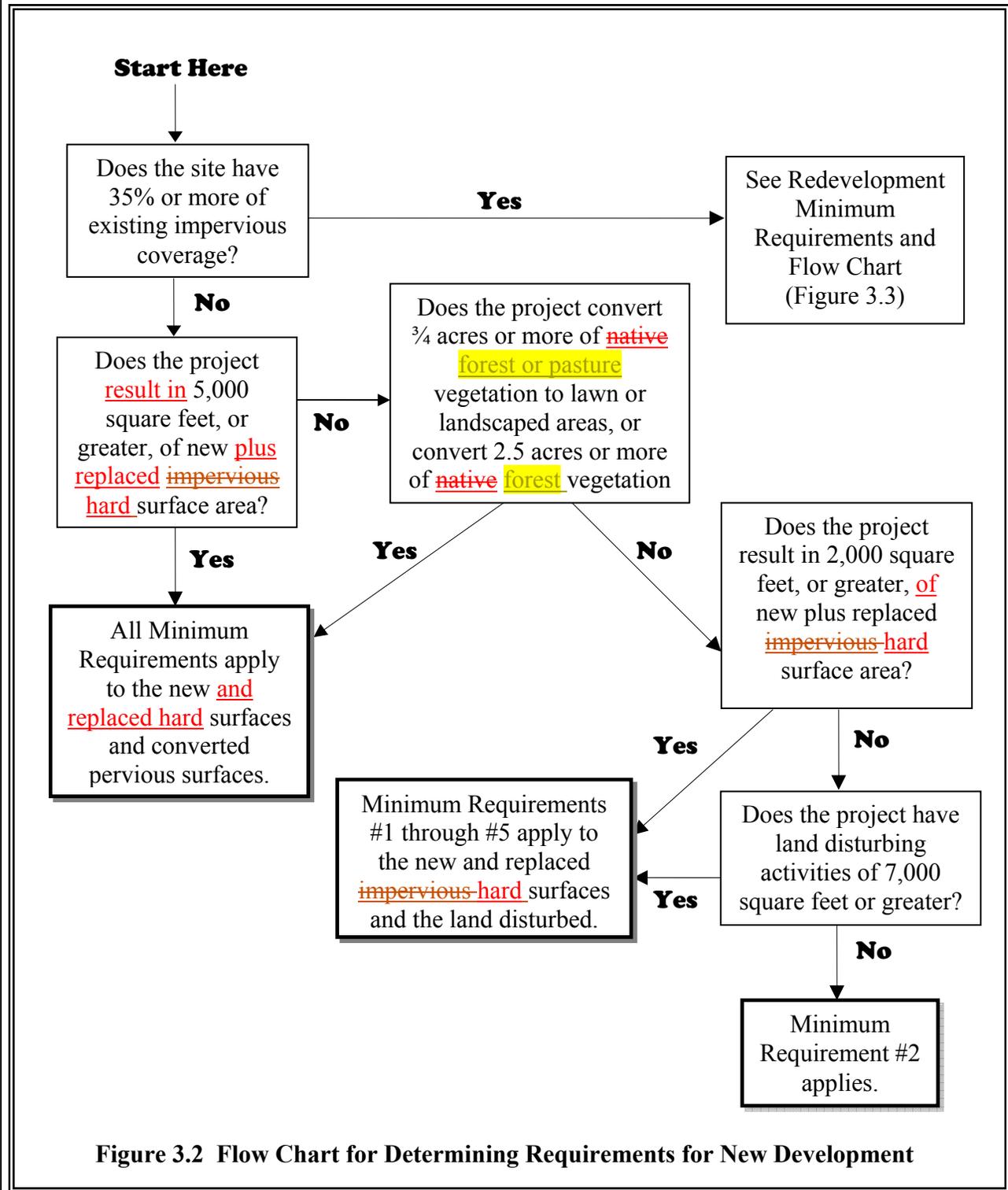
Section 3. Applicability of the Minimum Requirements

3.1 Thresholds

Not all of the Minimum Requirements apply to every development or redevelopment project. The applicability varies depending on the 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.

Use the thresholds in sections 3.2 and 3.3 at the time of application for a subdivision, plat or a short plat. The thresholds apply to a common plan of development or sale as defined in the definitions and acronyms section of this permit. If the project is part of a common plan of development or sale, the thresholds apply to the disturbed area of the entire plan. For projects involving only land disturbing activities, (e.g., clearing or grading), the thresholds apply at the time of application for the permit allowing or authorizing that activity. Note the exemption in Section 1 for forest practices.





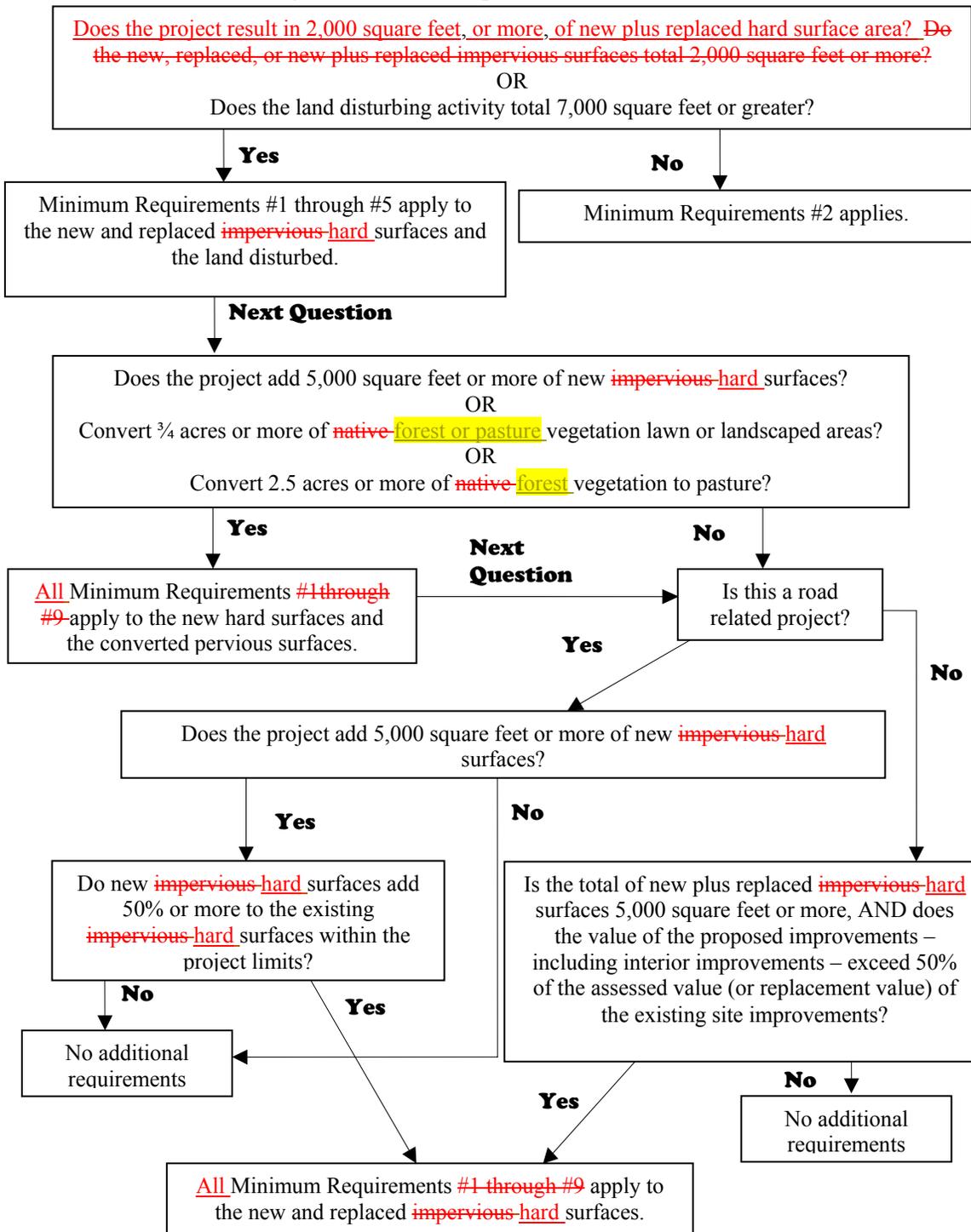


Figure 3.3 Flow Chart for Determining Requirements for Redevelopment

3.2 New Development

All new development, regardless of size, 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-hard surfaces and the land disturbed:

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

The following new development shall comply with Minimum Requirements #1 through #109 for the new and replaced impervioushard surfaces and the converted pervious surfaces:

- ~~Creates or adds~~ Results in 5,000 square feet, or ~~more~~ greater, of new plus replaced impervious-hard surface area, or
- Converts $\frac{3}{4}$ acres, or more, of ~~native~~ forest or pasture vegetation to lawn or landscaped areas, or
- Converts 2.5 acres, or more, of ~~native~~ forest vegetation to pasture.

3.3 Redevelopment

All redevelopment, regardless of size, 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-hard surfaces and the land disturbed:

- ~~Results in 2,000 square feet, or more, of new plus replaced hard surface area~~ The new, replaced, or total of new plus replaced impervious surfaces is 2,000 square feet or more, or
- ~~Has land disturbing activity of 7,000 square feet or greater.~~ 7,000 square feet or more of land disturbing activities.

The following redevelopment shall comply with Minimum Requirements #1 through #109 for the new impervious-hard surfaces and converted pervious areas:

- Adds 5,000 square feet or more of new impervious-hard surfaces or,
- Converts $\frac{3}{4}$ acres, or more, of ~~native~~ forest or pasture vegetation to lawn or landscaped areas, or
- Converts 2.5 acres, or more, of ~~native~~ forest vegetation to pasture.

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

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

The Permittee may exempt or institute a stop-loss provision for redevelopment projects from compliance with Minimum Requirements for treatment, flow control, and wetlands protection as applied to the replaced ~~impervious-hard~~ 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 #5 On-site Stormwater Management,~~ Minimum Requirement #6 Runoff Treatment, Minimum Requirement #7 Flow Control, and/or Minimum Requirement #8 Wetlands Protection. Basin planning may 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 ~~Permittees may use~~ basin planning ~~may be used~~ to modify the Minimum Requirements ~~isn~~ Section 4.

Section 4. Minimum Requirements

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

4.1 Minimum Requirement #1: Preparation of Stormwater Site Plans

The permittee shall require a Stormwater Site Plan from all projects meeting the thresholds in Section 3.1 of this Appendix. Stormwater Site Plans shall use site-appropriate development principles to retain native vegetation and minimize impervious surfaces to the extent feasible without limiting the specific uses or reducing floor area otherwise allowed by zoning and development standards. Stormwater Site Plans shall be prepared in accordance with Chapter 3 of Volume 1 of the *Stormwater Management Manual for Western Washington* (~~2005~~[2012](#)).

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.

~~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 result in 2,000 sq. ft. or more of new plus replaced hard surface area, or which disturb 7,000 sq. ft. or more. ~~meet the thresholds in Section 3 of this Appendix. Projects below those thresholds are not required to prepare a Construction SWPPP, but must consider all of the Elements listed below for Construction SWPPP's and develop controls for all elements that pertain to the project site. The Permittee may develop an abbreviated SWPPP format to meet the SWPPP requirement under this permit for sites that are less than 1 acre.~~

The SWPPP shall be implemented beginning with initial [soil-land](#) 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 (20052012), and/or other equivalent BMPs contained in technical stormwater manuals approved by Ecologythe 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~~thirteen 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~~Before beginning land disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area.
- b. Retain ~~The~~ duff layer, native top soil, and natural vegetation ~~shall be retained~~ in an undisturbed state to the maximum degree practicable.

2. Establish Construction Access:

- a. Limit ~~C~~ construction vehicle access and exit ~~shall be limited~~ to one route, if possible.
- b. Stabilize ~~A~~ access points ~~shall be stabilized~~ with a pad of quarry spalls, crushed rock, or other equivalent BMPs, to minimize ~~the~~ tracking of sediment onto public roads.
- c. Locate ~~W~~ wheel wash or tire baths ~~shall be located on~~ site, if the stabilized constructions entrance is not effective in preventing tracking sediment ~~from being tracked~~ onto ~~public~~ roads.
- d. If sediment is tracked off site, clean the affected roadways ~~shall be cleaned~~ thoroughly at the end of each day, or more frequently as necessary (for example, during wet weather). Remove ~~S~~ sediment ~~shall be removed~~ from roads by shoveling, sweeping, or pick up ~~sweeping~~ and ~~shall be transported~~ the sediment to a controlled sediment disposal area.
- e. Conduct ~~S~~ street washing ~~is allowed~~ only after sediment is removed in accordance with 2.d, above.
- f. Control ~~S~~ street wash wastewater ~~shall be controlled~~ by pumping back on site, or otherwise ~~be prevented it~~ from discharging into systems tributary to waters of the ~~s~~State.

3. Control Flow Rates:

- a. Protect ~~P~~ properties and waterways downstream ~~from of~~ development sites ~~shall be protected~~ from erosion and the associated discharge of turbid waters due to increases in the velocity and peak volumetric flow rate of stormwater runoff from the project site.
- b. Where necessary to comply with 3.a, above, construct stormwater retention or detention facilities ~~shall be constructed~~ as one of the first steps in grading. Assure that ~~D~~ detention facilities ~~shall be functional properly prior to before~~ constructing ~~on of~~ site improvements (e.g., impervious surfaces).

- c. If permanent infiltration ponds are used for flow control during construction, protect 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.~~
 - ~~ab. Design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants.~~
 - ~~b. Construct Ssediment 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. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site.~~
 - ~~d. Direct stormwater runoff from disturbed areas through a sediment pond or other appropriate sediment removal BMP, before the runoff leaves a construction site or before discharge to an infiltration facility. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must meet the flow control performance standard in 3.a, above.~~
 - ~~ee. Locate BMPs intended to trap sediment on-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.~~
 - ~~f. Where feasible, design outlet structures that withdraw impounded stormwater from the surface to avoid discharging sediment that is still suspended lower in the water column.~~
 5. Stabilize Soils:
 - a. ~~Stabilize E~~exposed and unworked soils ~~shall be stabilized~~ by application of effective BMPs that prevent erosion. Applicable BMPs include, but are not limited to: temporary and permanent seeding, sodding, mulching, plastic covering, erosion control fabrics and matting, soil application of polyacrylamide (PAM), the early application of gravel base early on areas to be paved, and dust control.
 - b. Control stormwater volume and velocity within the site to minimize soil erosion.

- c. Control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion.
 - bd. Depending on the geographic location of the project, No soils must not 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
 - e. ~~The time period may be adjusted by the Permittee, if the Permittee can show that local precipitation data justify a different standard.~~
 - de. Stabilize Ssoils shall be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.
 - ef. Stabilize Ssoil 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.
 - g. Minimize the amount of soil exposed during construction activity.
 - h. Minimize the disturbance of steep slopes.
 - i. Minimize soil compaction and, unless infeasible, preserve topsoil.
6. Protect Slopes:
- a. Design and construct cut-and-fill slopes in a manner ~~to that will~~ minimize erosion. Applicable practices include, but are not limited to, reducing continuous length of slope with terracing and diversions, reducing slope steepness, and roughening slope surfaces (for example, track walking).
 - b. Divert Ooff-site stormwater (run-on) or ground water ~~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~~ must handle the ~~expected~~ peak 10-minute ~~flow~~ velocity of flow 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~~ must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. -For tributary areas on the project site, the analysis ~~shall~~ must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. -If using the Western Washington Hydrology Model to predict flows, bare soil areas should be modeled as “landscaped area.”

- d. ~~Place~~ Excavated material ~~shall be placed~~ on the uphill side of trenches, consistent with safety and space considerations.
 - e. ~~Place~~ Check dams ~~shall be placed~~ at regular intervals within constructed channels that are cut down a slope.
7. Protect Drain Inlets:
- a. ~~Protect~~ Storm drain inlets made operable during construction ~~shall be protected~~ so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.
 - b. ~~Clean or remove and replace~~ Inlet protection devices ~~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. ~~Design, construct, and stabilize~~ All temporary on-site conveyance channels ~~shall be designed, constructed, and stabilized~~ to prevent erosion from the following expected peak flows:
 - Channels ~~shall~~ must handle the ~~expected~~ peak 10-minute ~~flow-velocity~~ of flow from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. ~~Alternatively, the 10-year, 1-hour flow rate predicted indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used. The hydrologic analysis shall must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits. For tributary areas on the project site, the analysis shall use the temporary or permanent project land cover condition, whichever will produce the highest flow rates. If using the Western Washington Hydrology Model to predict flows, bare soil areas should be modeled as "landscaped area."~~
 - b. ~~Provide~~ Stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches ~~shall be provided~~ at the outlets of all conveyance systems.
9. Control Pollutants:
- a. ~~Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants.~~
 - b. ~~Handle and dispose~~ All pollutants, including waste materials and demolition debris, that occur on-site ~~shall be handled and disposed of~~ in a manner that does not cause contamination of stormwater.
 - bc. ~~Provide~~ 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~~ must include secondary containment. Secondary containment means placing tanks or containers within an impervious structure capable of containing 110% of the volume contained in the largest tank within the containment structure. Double-walled tanks do not require additional secondary containment.

- ed. ~~Conduct M~~aintenance, fueling and repair of heavy equipment and vehicles ~~shall be conducted~~ using spill prevention and control measures. ~~Clean C~~ontaminated surfaces ~~shall be cleaned~~ immediately following any spill incident.
- de. ~~Discharge W~~heel wash or tire bath wastewater ~~shall be discharged~~ to a separate on-site treatment system ~~that prevents discharge to surface water, such as closed-loop recirculation or upland application,~~ or to the sanitary sewer, with local sewer district approval.
- ef. ~~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. ~~Follow M~~anufacturers' label requirements for application rates and procedures ~~shall be followed~~.
- fg. ~~Use~~ BMPs ~~shall be used~~ to prevent ~~or treat~~ contamination of stormwater runoff by pH modifying sources. ~~These~~ sources ~~for this contamination~~ include, but are not limited to: bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, dewatering concrete vaults, concrete pumping and mixer washout waters.
- h. ~~Adjust the pH of stormwater if necessary to prevent~~ ~~Permittees shall require construction site operators to adjust the pH of stormwater if necessary to prevent~~ violations of water quality standards.
- i. ~~Assure that washout of concrete trucks is performed offsite or in designated concrete washout areas only. Do not wash out concrete trucks onto the ground, or into storm drains, open ditches, streets, or streams. Do not dump excess concrete on-site, except in designated concrete washout areas. Concrete spillage or concrete discharge to surface waters of the State is prohibited.~~
- j. ~~Permittees shall require construction site operators o~~btain written approval from ~~Ecology -the Department prior to~~before using chemical treatment other than CO₂ or dry ice to adjust pH.

10. Control De-Watering:

- a. ~~Discharge F~~oundation, 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~~before discharge to a sediment trap or sediment pond.
- b. ~~Discharge C~~lean, non-turbid de-watering water, such as well-point ground water, ~~can be discharged~~ to systems (with owner/operator approval) tributary to, or directly into surface waters of the sState, as specified in 8, above, provided the de-watering flow does not cause erosion or flooding of receiving waters or interfere with the operation of the system. ~~Do not route C~~lean de-watering water ~~should not be routed~~ through stormwater sediment ponds. Note that "surface waters of the State" may exist on a construction site as well as off site; for example, a creek running through a site.
- c. Handle highly turbid or otherwise contaminated dewatering water separately from stormwater.

~~ed.~~ Other ~~treatment or de-watering~~ disposal options may include:

~~(i)~~ ~~(i)~~ ~~Infiltration~~;

~~(ii)~~ ~~(ii)~~ ~~Transport~~ offsite in vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters;

~~(iii)~~ ~~(iii)~~ ~~Ecology-approved~~ on-site chemical treatment or other suitable treatment technologies ~~approved by the Permittee~~;

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

~~(v)~~ ~~(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. ~~Maintain and repair~~ 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. ~~Remove~~ All temporary erosion and sediment control BMPs ~~shall be removed~~ within 30 days after achieving final site stabilization ~~is achieved~~ or after the temporary BMPs are no longer needed.

12. Manage the Project:

a. ~~Phase~~ 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~~ Inspection and monitoring – Inspect, to maintain, and repair ~~as needed~~, all ~~sediment and erosion control~~ BMPs as needed to assure continued performance of their intended function. Projects regulated under the Construction Stormwater General Permit must conduct site inspections and monitoring in accordance with Special Condition S4 of the Construction Stormwater General Permit.

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

~~ed.~~ ~~The Permittee must require construction site operators to periodically inspect their sites.~~ For projects that disturb one or more acres must have, site inspections ~~shall be~~ conducted by a Certified Erosion and Sediment Control Lead (CESCL). Sites less than one acre may have a person without CESCL certification conduct inspections. For sites that disturb one or more acres, the SWPPP must who shall be identified in the SWPPP the CESCL or inspector. The CESCL or inspector and who shall must be present on-site or on-call at all times. The CESCL or inspector (sites less than on acre) must have the skills to assess the:

- Site conditions and construction activities that could impact the quality of stormwater.

- Effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.

~~–ee.~~ The CESCL or inspector must examine stormwater visually for the presence of suspended sediment, turbidity, discoloration, and oil sheen. They must evaluate the effectiveness of BMPs and determine if it is necessary to install, maintain, or repair BMPs to improve the quality of stormwater discharges.

Based on the results of the inspection, construction site operators must correct the problems identified by:

- Reviewing the SWPPP for compliance with the 13 construction SWPPP elements and making appropriate revisions within 7 days of the inspection.
- Immediately beginning the process of fully implementing and maintaining appropriate source control and/or treatment BMPs as soon as possible, addressing the problems not later than within 10 days of the inspection. If installation of necessary treatment BMPs is not feasible within 10 days, the construction site operator may request an extension within the initial 10-day response period.
- Documenting BMP implementation and maintenance in the site log book (sites larger than 1 acre).

~~–ef.~~ The CESCL or inspector must inspect all areas disturbed by construction activities, all BMPs, and all stormwater discharge points at least once every calendar week and within 24 hours of any discharge from the site. (For purposes of this condition, individual discharge events that last more than one day do not require daily inspections. For example, if a stormwater pond discharges continuously over the course of a week, only one inspection is required that week.) The CESCL or inspector may reduce the inspection frequency for temporary stabilized, inactive sites to once every calendar month.

~~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.

13. Protect Low Impact Development BMPs

- Protect all Bioretention and Rain Garden BMPs from sedimentation through installation and maintenance of erosion and sediment control BMPs on portions of the site that drain into the Bioretention and/or Rain Garden BMPs. Restore the BMPs to their fully functioning condition if they accumulate sediment during construction. Restoring the BMP must include removal of sediment and any sediment-laden Bioretention/rain garden soils, and replacing the removed soils with soils meeting the design specification.
- Prevent compacting Bioretention and Rain Garden BMPs by excluding construction equipment and foot traffic. Protect completed lawn and landscaped areas from compaction due to construction equipment.

- c. Control erosion and avoid introducing sediment from surrounding land uses onto permeable pavements. Do not allow muddy construction equipment on the base material or pavement. Do not allow sediment-laden runoff onto permeable pavements or base materials.
- d. Keep all heavy equipment off existing soils under LID facilities that have been excavated to final grade to retain the infiltration rate of the soils.

4.3 Minimum Requirement #3: Source Control of Pollution

All known, available and reasonable source control BMPs must be required for to 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~~2012) or an approved equivalent manual approved by ~~the~~ Department Ecology.

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

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

4.5 Minimum Requirement #5: On-site Stormwater Management

The Permittee must require On-site Stormwater Management BMPs in accordance with the following project thresholds, standards, and lists to infiltrate, disperse, and retain stormwater runoff onsite to the ~~maximum~~ extent feasible without causing flooding or erosion impacts unless that portion of the project is a sidewalk, trail, or bike lane in the right-of-way or in a public place that discharges directly to, or indirectly through an MS4 to a water listed in Appendix I-E of the SMMWW and is not subject to the restrictions outlined in Section 4.7 – Applicability.

~~Roof Downspout Control BMPs, functionally equivalent to those described in Chapter 3 of Volume III of the *Stormwater Management Manual for Western Washington* (2005),~~

Project Thresholds

Projects triggering only Minimum Requirements #1 through #5 shall use -On-site Stormwater Management BMP's from Mandatory List #1 for all surfaces within each type of surface listed below.

Projects triggering only Minimum Requirements #1 through #5 may choose to demonstrate compliance with the LID Performance Standard in lieu of using Mandatory List #1. Projects selecting that option cannot use Rain Gardens. They can choose to use

Bioretention options as described in the Stormwater Management Manual for Western Washington (2012) to achieve the LID Performance Standard.

Projects triggering Minimum Requirements #1 through #9, must apply On-site Stormwater Management in accordance with the table below.

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

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

Low Impact Development Performance Standard

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

Mandatory List #1

For each surface, consider the BMP’s in the order listed for that type of surface. Use the first BMP that is considered feasible. No other On-site Stormwater Management BMP is necessary for that surface. Feasibility shall be determined by evaluation against design requirements for the BMP and the feasibility criteria in Section 8 of this Appendix:

Lawn and landscaped areas:

- Soil Quality BMPs, functionally equivalent to those **Post-Construction Soil Quality and Depth in accordance with BMP T5.13** in Chapter 5 of Volume V, of

the *Stormwater Management Manual for Western Washington* (SMWW¹)(2005) at all projects: ~~shall be required to reduce the hydrologic disruption of developed sites.~~

- Plant one tree for every 1,000 sf of lawn and landscape area. Trees shall be planted in accordance with Section 7.7.3 of Appendix III-C of Volume III.

Roofs:

1. Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V of the SMMWW
2. Downspout Infiltration Systems in accordance with Section 3.1.1 in Chapter 3 of Volume III of the SMMWW
3. Rain Gardens in accordance with design procedures in the “Rain Garden Handbook for Western Washington”
4. Downspout Dispersion Systems in accordance with BMP T5.10 in Chapter 5 of Volume V of the SMMWW

Other Hard Surfaces:

1. Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V, of the SMMWW
2. Applicant must choose one that is considered feasible:
 - a. Permeable pavement² in accordance with design criteria in Appendix III-C of the SMMWW, or
 - b. Rain Gardens in accordance with design procedures in the “Rain Garden Handbook for Western Washington”
3. Sheet Flow Dispersion in accordance with BMP T5.12 , or Concentrated Flow Dispersion in accordance with BMP T5.11 in Chapter 5 of Volume V of the SMMWW

Mandatory List #2

For each surface, consider the BMP’s in the order listed for that type of surface. Use the first BMP that is considered feasible. No other On-site Stormwater Management BMP is necessary for that surface. Feasibility shall be determined by evaluation against design requirements for the BMP and the feasibility criteria in Section 8 of this Appendix:

Lawn and landscaped areas:

- BMP T5.13 in Chapter 5 of Volume V of the SMMWW at all projects.
- Plant one tree for every 1,000 sf of lawn and landscape area. Trees shall be planted in accordance with Section 7.7.3 of Appendix III-C of Volume III.

Roofs:

1. Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V of the SMMWW

¹ All references to the *Stormwater Management Manual for Western Washington* assume the 2012 version.

² This is not a requirement to pave these surfaces. Where pavement is proposed, it must be permeable to the extent feasible.

2. Downspout Infiltration Systems in accordance with Section 3.1.1 in Chapter 3 of Volume III of the SMMWW
3. Bioretention BMP's (See Chapter 7 of Volume V of the SMMWW) that have a minimum horizontally projected surface area below the overflow which is at least 5% of the ~~of the~~ total surface area draining to it. If the short-term native soil infiltration rate does not meet the feasibility criteria in Section 8 is less than 0.3 in/hr, do not use this option unless the roof is classified as pollution-generating impervious surface, in which case this BMP shall be used with an underdrain.
4. Downspout Dispersion Systems in accordance with Section 3.1.2 in Chapter 5 of Volume V of the SMMWW
- 4-5. For a commercial building, a vegetated roof or an impervious roof with runoff routed below permeable pavement. If the latter option is not used, a cost analysis is necessary to claim infeasibility of a vegetated roof.

Other Hard Surfaces:

1. Full Dispersion in accordance with BMP T5.30 in Chapter 5 of Volume V of the SMMWW
2. Applicant must choose one that is considered feasible:
 - a. Permeable pavement² in accordance with design criteria in Appendix III-C of the SMMWW, or
 - b. Bioretention BMP's (See Chapter 7, Volume V of the SMMWW) that have a minimum horizontally projected surface area below the overflow which is at least 5% ~~of the~~ of the total surface area draining to it. If the short-term native soil infiltration rate is less than 0.3 in/hr, do not use this option unless the hard surface is classified as pollution-generating.
3. Sheet Flow Dispersion in accordance with BMP T5.12, or Concentrated Flow Dispersion in accordance with BMP T5.11 of Chapter 5 of Volume V of the SMMWW

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, new plus replaced pollution-generating impervious hard 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~~ with the exception of permeable pavements - 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				
	< ¼ acres of PGPS	≥ ¼ 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. Enhanced Treatment:

~~Except where specified below under “4. Basic Treatment,”~~ Enhanced treatment for reduction in dissolved metals is required for the following project sites that 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 (20052012)), and Any~~ areas of the above-listed project sites that are identified as subject to Basic Treatment requirements (below), are ~~also~~ not also subject to Enhanced Treatment requirements. For developments with a mix of land use types, the Enhanced Treatment requirement shall apply when the runoff from the areas subject to the Enhanced Treatment requirement comprise 50% or more of the total runoff within a threshold discharge area.

4. Basic Treatment:

Basic Treatment ~~is required in the following circumstances~~ 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 (20052012)* for soil suitability criteria) and pretreatment is provided; 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 (or indirectly through a municipal separate storm sewer system) to Basic Treatment Receiving Waters (Appendix I-C of the Stormwater Management Manual for Western Washington (2012)), ~~salt waters, river segments, and lakes listed in Appendix I-C of the Stormwater Management Manual for Western Washington (2005/2012); 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 (2005/2012)*, 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). At a minimum, 91% of the total runoff volume, as estimated by an approved continuous runoff model, must

pass through the treatment facility(ies) at or below the approved hydraulic loading rate for the facility(ies).

2. Downstream of Detention Facilities:

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

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~~2012),
- Designed in accordance with the design criteria in Volume V of the *Stormwater Management Manual for Western Washington* (~~2005~~2012), and
- Maintained in accordance with the maintenance schedule in Volume V of the *Stormwater Management Manual for Western Washington* (~~2005~~2012).

Additional Requirements

The discharge of untreated stormwater from pollution-generating ~~impervioushard~~ 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 in accordance with Chapter 5, Volume V and Chapter 7, Volume V.

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~~2012) subject to the following restrictions:

- Direct discharge to the exempt receiving water does not result in the diversion of drainage from any perennial stream classified as Types 1, 2, 3, or 4 in the State of

Washington Interim Water Typing System, or Types “S”, “F”, or “Np” in the Permanent Water Typing System, or from any category I, II, or III wetland; and

- Flow splitting devices or drainage BMP’s are applied to route natural runoff volumes from the project site to any downstream Type 5 stream or category IV wetland:
 - Design of flow splitting devices or drainage BMP’s will be based on continuous hydrologic modeling analysis. The design will assure that flows delivered to Type 5 stream reaches will approximate, but in no case exceed, durations ranging from 50% of the 2-year to the 50-year peak flow.
 - Flow splitting devices or drainage BMP’s that deliver flow to category IV wetlands will also be designed using continuous hydrologic modeling to preserve pre-project wetland hydrologic conditions unless specifically waived or exempted by regulatory agencies with permitting jurisdiction; and
- The project site must be drained by a conveyance system that is comprised entirely of manmade conveyance elements (e.g., pipes, ditches, outfall protection, etc.) and extends to the ordinary high water line of the exempt receiving water; and
- The conveyance system between the project site and the exempt receiving water shall have sufficient hydraulic capacity to convey discharges from future build-out conditions (under current zoning) of the site, and the existing condition from non-project areas from which runoff is or will be collected; and
- Any erodible elements of the manmade conveyance system must be adequately stabilized to prevent erosion under the conditions noted above.

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

Permittees may petition Ecology to exempt projects in additional areas. A petition must justify the proposed exemption based upon a hydrologic analysis that demonstrates that the potential stormwater runoff from the exempted area will not significantly increase the erosion forces on the stream channel nor have near-field impacts (~~see Section 7 of this Appendix~~).

Thresholds

The following circumstances require ~~construction of flow control facilities and/or land use management BMPs that will~~ achievement of 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 $\frac{3}{4}$ 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-hard surfaces and converted-effective 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 and one-hour time steps (or a 0.15 cfs increase using 15-minute time steps).

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.

	Flow Control Facilities	On-site Stormwater Management BMPs
<u>< 3/4 acres conversion to lawn/landscape, or < 2.5 acres to pasture</u>	_____	_____ ✓
<u>≥ 3/4 acres conversion to lawn/landscape, or ≥ 2.5 acres to pasture</u>	_____ ✓	_____ ✓
<u>< 10,000 square feet of effective impervious area</u>	_____	_____ ✓
<u>≥ 10,000 square feet of effective impervious area</u>	_____ ✓	_____ ✓
<u>≥ 0.1 cubic feet per second increase in the 100-year flood frequency</u>	_____ ✓	_____ ✓

Standard Flow Control Requirement

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

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

This standard requirement is waived for sites that will reliably infiltrate all the runoff from impervioushard 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* (20052012) 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 ~~to determine the applicability of this requirement to~~ discharges to wetlands.

Standard Requirement

~~Projects within the drainage area of a wetland Discharges to wetlands shall comply with Guide Sheets #1 through #3 in Appendix I-D of the *Stormwater Management Manual for Western Washington* (2012). 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* (20052012).~~

Additional Requirements

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

- ~~N~~necessary conveyance systems as approved by the Permittee; or
- ~~A~~as allowed in wetlands approved for hydrologic modification and/or treatment in accordance with Guide ~~S~~sheet ~~1B2~~ in Appendix I-D of the *Stormwater Management Manual for Western Washington* (~~2005~~2012).

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~~2012) for ~~a~~l proposed stormwater facilities and BMPs. The party (or parties) responsible for maintenance and operation shall be identified in the operation and maintenance manual. For private facilities approved by the Permittee, a copy of the operation and maintenance manual shall be retained 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 operation and maintenance manual shall be retained in the appropriate department. A log of maintenance activity that indicates what actions were taken shall be kept and be available for inspection by the local government.

Section 5. Adjustments

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

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

Section 6. Exceptions/Variations

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 Permittee's 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 Ecology~~. The Permittee must seek prior approval by ~~the Department Ecology~~ for any jurisdiction-wide exception.

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

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

In addition any exception must meet the following criteria:

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

Section 7. Basin/Watershed Planning

Basin/Watershed planning may be used by the Permittee to tailor Minimum Requirement #5 On-site Stormwater Management, Minimum Requirement #6 Runoff Treatment, Minimum Requirement #7 Flow Control, and/or Minimum Requirement #8 Wetlands Protection. Basin planning may be used to support alternative on-site stormwater management, 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. ~~USEPA has developed the SUSTAIN model (System for Urban Stormwater Treatment and Analysis Integration) The USGS has developed software called "GenSen" (Generation and Analysis of Model Simulation Scenarios) that can be used with continuous runoff models to 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~~2012~~).

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.

Section 8. Feasibility Criteria for Selected Low Impact Development Best Management Practices

I. ~~Site/Engineering-based Conditions (any listed condition triggers an infeasibility decision)~~

A. Bioretention BMP's and Rain Gardens are considered infeasible:

(Note: Criteria with setback distances are as measured from the bottom edge of the bioretention soil mix.)

Where land for bioretention is within area designated as a Landslide Hazard Area.

Where the site cannot be reasonably designed to locate bioretention facilities on slopes less than 15%, or if bioretention is within the road right of way and the right of way cannot be feasibly designed to locate bioretention facilities on slopes less than 8%

Within 50 feet from the top of slopes that are **>greater than** 20%.

Where geotechnical evaluation recommends infiltration not be used anywhere within the project area due to reasonable concerns about erosion, slope failure, or downgradient flooding.

Within 100 feet of a known hazardous waste site; or an abandoned or active landfill.

Within 100 feet of a drinking water well, or a spring used for drinking water supply.

Within 10 feet of small on-site sewage systems and greywater reuse systems. For setbacks from a “large onsite sewage disposal system”, see Ch 246-272B WAC.

Within 10 feet of an underground storage tank.

Within local setbacks from structures.

Where the drainage area is less than 5,000 sq. ft. of pollution-generating impervious surface, or less than 10,000 sq. ft. of impervious surface; or less than $\frac{3}{4}$ acres of pervious surface, and the minimum vertical separation of 1 foot to the seasonal high water table, bedrock, or other impervious layer is not achieved.

Where the drainage area is more than any of the above amounts, and cannot reasonably be broken down into amounts smaller than those designated above, and the minimum vertical separation of 3 feet to seasonal high water table, bedrock, or other impervious layer is not achieved.

Where the field testing indicates potential bioretention/rain garden sites have a short term (a.k.a., initial) native soil saturated hydraulic conductivity less than 0.30 inches per hour. In these instances bioretention/rain gardens serving pollutant-generating surfaces can be built with an underdrain, preferably elevated within the underlying gravel layer, unless other feasibility restrictions apply.

Where they are not compatible with surrounding drainage system as determined by the local government (e.g., project drains to an existing stormwater collection system whose elevation or location precludes connection to a properly functioning bioretention facility).

Where the only area available for siting would threaten the safety or reliability of pre-existing underground utilities, pre-existing underground storage tanks, or pre-existing structures.

Where there is a lack of usable space for rain garden/bioretention facilities at re-development sites.

B. Permeable Pavements are considered infeasible:

Note: These criteria also apply to impervious pavements that would employ storm water collection and redistribution below the pavement

Where the road type is classified as arterial or collector rather than access. See RCW 35.78.010 and RCW 47.05.021.

In the drive aisles of parking lots as long as runoff is directed to pervious pavement parking spaces.

At sites defined as “high use” in Volume V of the SMMWW.

In areas with “industrial activity” as identified in 40 CFR 122.26(b)(14).

Within an area designated as a Landslide Hazard Area.

Where geotechnical engineering evaluation recommends infiltration not be used anywhere in the project area due to reasonable concerns about erosion, slope failure, or flooding.

Within 100 feet of a known contaminated site or abandoned landfill.

Within 100 feet of a drinking water well, or a spring used for drinking water supply.

Within 10 feet of a small on-site sewage disposal drainfield. For setbacks from a “large on-site sewage disposal system”, see Ch 246-272B WAC.

Where the site cannot reasonably be designed to have a porous asphalt surface at less than 5 percent slope, or a pervious concrete surface at less than 6 percent slope, or a pervious paver surface (where appropriate) at less than 10 percent slope. Portions of pavements that must be laid at greater than 5 percent slope must prevent drainage from upgradient base courses into its base course.

Excessively steep slopes where water within the aggregate base layer or at the subgrade surface cannot be controlled by detention structures and may cause erosion and structural failure, or where surface runoff velocities may preclude adequate infiltration at the pavement surface.

Where the native soils below a road or parking lot do not meet the soil suitability criteria for providing treatment. Note: In these instances, the local government has the option of requiring a six-inch layer of media meeting the soil suitability criteria or the sand filter specification as a condition of construction.

Where the site design cannot avoid putting pavement in areas likely to have long-term excessive sediment deposition after construction (e.g., construction and landscaping material yards).

Down slope of steep, erosion prone areas that are likely to deliver sediment.

Where the risk of concentrated pollutant spills is more likely such as gas stations, truck stops, and industrial chemical storage sites.

Where seasonal high groundwater creates saturated conditions within one foot of the bottom of the lowest gravel base course.

Where fill soils are used that can become unstable when saturated.

Where regular, heavy applications of sand occur to maintain traction during winter.

Where infiltrating and ponded water below new permeable pavement area would compromise adjacent impervious pavements.

Where infiltrating water below new permeable pavement area would threaten existing below grade basements.

Where infiltrating water would threaten shoreline structures such as bulkheads.

Where permeable pavements do not provide sufficient strength to support heavy loads at industrial facilities such as ports.

Where installation of permeable pavement would threaten the safety or reliability of pre-existing underground utilities or pre-existing underground storage tanks.

Where underlying soils are unsuitable for supporting traffic loads when saturated. Soils meeting a California Bearing Ratio of 5% are considered suitable for residential roads.

Where appropriate field testing indicates soils have a short-term (a.k.a., initial) native soil saturated hydraulic conductivity less than 0.3 inches per hour. In these instances, roads and parking lots can be built with an underdrain, preferably elevated within the base course, unless other feasibility restrictions apply.

C. Vegetated Roofs are considered infeasible where:

Roof design has a slope greater than 20%.

A Building cannot technically be designed to accommodate structural load of a vegetated roof.

II. Competing Needs

The On-site Stormwater Management requirements can be superseded or reduced where they are in conflict with:

Requirements of the following any federal or state laws, rules, and or mandatory standards: Historic Preservation Laws and Archaeology Laws as listed at <http://www.dahp.wa.gov/learn-and-research/preservation-laws>, federal Superfund or state Model Toxic Control Act, Federal Aviation Administration requirements for airports, Americans with Disabilities Act.

- A. Where an LID requirement has been found to be in conflict with special zoning district design criteria development regulations for design standards [adopted pursuant to a public process] adopted and being implemented pursuant to a community planning process, the existing local codes may supersede or reduce the LID requirement. This does not relieve the permittee of the requirement in S5.C.5 to review local development-related design codes, standards, and rules to remove barriers and require use of LID principles and BMP's.
- B. Public health and safety standards.
- C. Transportation regulations or adopted transportation plans, to maintain, expand, or implement the options for future expansion or multi-modal use or expansion of public rights-of-way.

1 **City of Seattle Comments - Attachment 4**
2 **APPENDIX 9 – Laboratory Methods Stormwater**
3 **Discharge Monitoring**
4

5 **Note: Seattle recommended additions to Ecology text are**
6 **double-underlined. Seattle recommended deletions are**
7 **shown is in double strikethrough. All Seattle**
8 **recommended changes are highlighted.**
9

10
11 Stormwater discharge monitoring is intended to characterize stormwater runoff quantity and
12 quality at a limited number of locations in a manner that allows analysis of loadings and changes
13 in conditions over time and generalization across the Permittees' jurisdiction.

14 **QAPP Preparation**

15 Permittees shall prepare a Quality Assurance Project Plan (QAPP) in accordance with *Quality*
16 *Assurance Project Plan Guidance, Special Condition S8.D, Phase I Municipal Stormwater*
17 *Permit*, December 2010 (Ecology Publication no. 10-10-075
18 <http://www.ecy.wa.gov/pubs/1010075.pdf>). The QAPP shall be developed by qualified staff or
19 contractors with experience in applying Ecology's or EPA's QAPP Guidelines. The QAPP shall
20 describe each stormwater discharge monitoring site and associated drainage basin in detail. The
21 QAPP shall also describe why and how each site was selected.

22
23 Stormwater discharge monitoring QAPPs shall be submitted to Ecology in accordance with the
24 deadlines in S8.

25
26 Permittees are responsible for maintaining an up-to-date approved QAPP for stormwater
27 discharge monitoring. Significant changes should be reviewed by Ecology and reflected in a
28 revised QAPP. Significant changes can include, but are not limited to:

- 29 • Land disturbing activities over 10 acres in size within the sampled drainage area.
- 30 • Relocating a monitoring station.
- 31 • Introducing new sampling equipment.
- 32 • Unanticipated back water conditions, base flow or tidal influences.
- 33 • Changes in laboratories, analytical methods or reporting limits.

34 **Site Selection**

35 Stormwater monitoring sites shall have the tributary conveyance system and drainage area
36 mapped, and be suitable for permanent installation and operation of flow-weighted composite
37 sampling equipment. Additional site selection guidance, and information about how to estimate a
38 rainfall to runoff relationship is available in *Standard Operating Procedure for Automatic*
39 *Sampling for Stormwater Monitoring, ECY002*
40 (<http://www.ecy.wa.gov/programs/wq/stormwater/municipal/SOPAutomatedSampling.pdf>).

1
2 Permittees may identify a sampling site upstream in the conveyance system (i.e., upgradient of
3 the outfall) in order to achieve the desired land use, to accommodate the installation of sampling
4 equipment, and/or to avoid or minimize back water or tidal interference.

5
6 The QAPP must describe how each site was selected, the size of the drainage basin, the
7 percentage of area in the drainage basin representing the following land uses: high density
8 residential, low density residential, commercial, industrial, agriculture, and transportation right-
9 of-way.

10
11 Sites must be evaluated for a rainfall to runoff relationship in order to ensure that the site will
12 receive enough runoff for sufficient sample volume. This rainfall to runoff relationship will also
13 assist in programming the automatic sampling equipment. In order to establish the rainfall to
14 runoff relationship, one year of continuous flow recording (including base flow and all storm
15 events) is necessary.

16 **Monitoring Frequency**

17 Permittees shall sample each stormwater discharge monitoring site according to the frequency
18 described below. Documented good faith efforts with good professional practice by the
19 Permittee which do not result in collecting a successful sample for the full number of required
20 storms may be considered as contributing toward compliance with this requirement.

21
22 The Permittee shall sample and analyze eleven (11) qualifying storm events per water year.
23 Qualifying storm event sampling must be distributed throughout the year, approximately
24 reflecting the distribution of rainfall between the wet and dry seasons (with a goal of 60-80% of
25 the samples collected during the wet season and a goal of 20-40% of the samples collected in the
26 dry season).

27
28 Additionally, the Permittee shall analyze up to a maximum of three (3) samples that are collected
29 as a result of attempts to sample the eleven (11) required storm events and do not meet the
30 rainfall volume storm event criterion but do meet the other storm event and sample criteria. The
31 maximum number of sampled storm events to be analyzed is fourteen (14) per year.

32 **Qualifying Storm Event Criteria**

33 The wet season is from October 1 through April 30. A qualifying wet season storm event is
34 defined as follows:

- 35 • Rainfall volume: 0.20" minimum, no fixed maximum
- 36 • Rainfall duration: No fixed minimum or maximum
- 37 • Antecedent dry period: Less than or equal to 0.02" rain in the previous 24 hours
- 38 • Inter-event dry period: 6 hours

39 The dry season is from May 1 through September 30. A qualifying dry season storm event is
40 defined as follows:

- 41 • Rainfall volume ~~0.20"~~ 0.15" minimum, no fixed maximum
- 42 • Rainfall duration: No fixed minimum or maximum
- 43 • Antecedent dry period: less than or equal to ~~0.02"~~ 0.06" rain in the previous 72 hours

- Inter-event dry period: 6 hours

Types of Sampling

Storm events shall be sampled using flow-weighted composite sampling techniques. Automatic samplers shall be programmed to begin sampling as early in the runoff event as practical and to continue sampling past the longest estimated time of concentration for the tributary area. Refer to *Standard Operating Procedure for Automatic Sampling for Stormwater Monitoring, ECY002* (<http://www.ecy.wa.gov/programs/wq/stormwater/municipal/SOPAutomatedSampling.pdf>) for guidance on how to conduct flow weighted composite sampling.

For storm events lasting less than 24 hours, samples shall be collected for at least seventy-five percent (75%) of the storm event hydrograph. For storm events lasting longer than 24 hours, samples shall be collected for at least seventy-five percent 75% of the hydrograph of the first 24 hours of the storm.

Each composite sample ~~must consist of~~ should be targeted to contain at least 10 aliquots. Composite samples with 7 to 9 aliquots are acceptable if they meet the other sampling criteria and help achieve a representative balance of wet season/dry season events and storm sizes.

~~Continuous flow recording of all storm events (not just sampled storm events) is necessary for at least one year to establish a baseline rainfall/runoff relationship. Ongoing continuous flow monitoring is necessary to properly operate the flow weighted composite sampling is required for the entire water year monitored.~~ Precipitation data shall be collected from the nearest rain gauge reporting at least hourly rainfall amounts.

Grab samples are necessary for some parameters (see below) and shall be collected early in the storm event. Refer to *Standard Operating Procedure for Grab Sampling for Stormwater Monitoring, ECY001* (<http://www.ecy.wa.gov/programs/wq/stormwater/municipal/SOPGrabSampling.pdf>).

Sediment samples shall be collected once per water year at each stormwater discharge monitoring site, or in the vicinity of each stormwater monitoring site. Use of in-line sediment traps or similar collection system is preferred; refer to *Standard Operating Procedure for Collection of Stormwater Sediments using In-Line Sediment Traps, ECY003* (<http://www.ecy.wa.gov/programs/wq/stormwater/municipal/SOPSedimentTrapStormwaterSampleCollection.pdf>). Sampling of receiving water sediment deposits is an alternative where approved by Ecology.

Parameters

Flow-weighted composite samples shall be analyzed for the following parameters utilizing an accredited laboratory and the methods and reporting limits as provided in this appendix.

- Conventional Parameters: TSS, turbidity, Conductivity, Chloride, Biochemical oxygen demand (BOD5), Hardness, and Methylene Blue Activating Substances (MBAS).
- Nutrients: Total phosphorus, Orthophosphate, Total Kjeldahl Nitrogen, and Nitrate plus nitrite.

- 1 • Metals: total and dissolved copper, zinc, cadmium, and lead; mercury shall also be
2 sampled in commercial and industrial land use areas.
- 3 • Organics:
 - 4 ○ PAHs including: Acenaphthene, Acenaphthylene, Anthracene,
5 Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(ghi)perylene,
6 Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h), Fluoranthene, Fluorene,
7 Indeno(1,2,3-cd)pyrene, Naphthalene, Phenanthrene, and Pyrene.
 - 8 ○ Bis(2-Ethylhexyl)phthalate.

9 If the volume of stormwater sample collected from a qualifying storm is insufficient to allow
10 analysis for all parameters listed above, the sample shall be analyzed for as many parameters as
11 possible in the following priority order: 1. Metals and hardness; 2. TSS; 3. Organics; 4.
12 Nutrients; 5. Conductivity; and 6. BOD₅. If insufficient sample exists to run the next highest
13 priority pollutant, that analysis should be bypassed and analyses run on lower priority pollutants
14 in accordance with the remaining priority order to the extent possible.

15
16 Grab samples shall be analyzed for the following parameters utilizing an accredited laboratory
17 and the methods and reporting limits provided in this appendix.

- 18 • Total Petroleum Hydrocarbons (TPH) using NWTPH-Gx and NWTPH-Dx and BTEX
19 (benzene, toluene, ethyl-benzene, and xylenes). The lube oil fraction, not the diesel
20 fraction, is targeted for NWTPH-Dx.

21
22 Sediment samples shall be analyzed for the following parameters utilizing an accredited
23 laboratory and the methods and reporting limits provided in this appendix. If the volume of
24 sediment sample is insufficient to analyze for all of the parameters listed below, the sample shall
25 be analyzed for as many parameters as possible in the following priority order:

- 26 • Grain size (visual, qualitative determination only), total organic carbon, copper, zinc,
27 lead, cadmium, PAHs, percent solids.

28 A minimum of one sediment sample per year shall be collected. Parameters that are below
29 detection limits after two years of data may be dropped from the analysis.

30 **Recordkeeping and Reporting**

31 For each stormwater monitoring site, calculate the following:

- 32 • Event Mean Concentrations (EMCs)
- 33 • Total annual pollutant load by parameter
- 34 • Seasonal pollutant loads by parameter for the wet and dry seasons

35
36 The annual pollutant load calculations must be based on a water year and include wet and dry
37 season loads and total annual load (wet plus dry season load). The loadings shall be expressed as
38 total pounds and as pounds per acre, and must take into account potential pollutant load from
39 base flow. Loadings shall be calculated following *Standard Operating Procedure for*
40 *Calculating Pollutant Loads for Stormwater Discharges, ECY004*
41 ([http://www.ecy.wa.gov/programs/wq/stormwater/municipal/SOPPOLLUTANTLOADINGCALCULATIONS.](http://www.ecy.wa.gov/programs/wq/stormwater/municipal/SOPPOLLUTANTLOADINGCALCULATIONS.pdf)
42 pdf). Pollutant loading information is required for water quality parameters only.
43

1 Annual Monitoring Reports shall be submitted with each Annual Report beginning with the first
2 Annual Report following the first full water year of monitoring. Annual Monitoring Reports shall
3 provide all monitoring data collected during the preceding water year (October 1 – September
4 30). Annual Monitoring Reports shall consist of a narrative report and a submittal to Ecology’s
5 Environmental Information Management (EIM) database. Guidance for EIM data submittals is
6 provided in *Stormwater Monitoring Report Guidance, Phase I Municipal Stormwater Permit,*
7 *Reporting Requirements for Special Condition S8,* November 2010 (Ecology Publication No. 10-
8 10-028). For the Annual Monitoring Report to be considered on time, the EIM data submission
9 process must be initiated before ~~March 1~~ **April 1** of each relevant year, and completed by ~~April~~
10 ~~30~~ **June 15** of each relevant year.

11
12 Annual Monitoring Reports shall include:

- 13 • A brief summary of each monitored drainage basin (full details of the monitoring
14 drainage basin should be in the QAPP), including any changes within the contributing
15 drainage area or changes to the monitoring station that could affect hydrology and/or
16 pollutant loading.
- 17 • A description of each flow-weighted composite and grab sampled storm event,
18 including:
 - 19 ○ General summary about storm event criteria, including:
 - 20 • Precipitation data including antecedent dry period and rainfall
21 distribution throughout the event.
 - 22 • Flow and hydrograph data including sampled and total runoff time
23 periods and volumes.
 - 24 • Total number of qualifying and non-qualifying storm events captured
25 and analyzed at each monitoring location (specify which criteria were
26 not met for each sampled non-qualifying event).
 - 27 • Whether or not 3 storm events were captured which did not reach the
28 0.20” rainfall depth criterion (how many and date of storm events).
 - 29 • Distribution of storms collected between wet and dry seasons (permit
30 goals include 60-80% of storms during the wet season and 20-40% of
31 storms during the dry season).
 - 32 • Logistical problems associated with any storm event criterion.
 - 33 ○ A heteorgraph and a hydrograph for each sampled storm event. Include
34 properly labeled graphs that display the following:
 - 35 • Date of the storm event,
 - 36 • Time of day versus precipitation information,
 - 37 • Time versus flow rate, and,
 - 38 • Time versus aliquot collection
 - 39 • Display the total duration of the storm event, not just the duration
40 when samples were collected (remember your pollutant load
41 calculation must include flow for the entire storm event, not just
42 the water quality sampled portion)
 - 43 ○ A summary of (or in the graph) the total runoff volume in gallons/other
44 appropriate unit of measure.

- A rainfall/runoff relationship table used to estimate the un-sampled storm events (where water quality samples were not collected). This is used for future estimations of annual and seasonal loads.
- Whether or not any chemicals were removed from the list of analysis due to two years of non-detect data.
- A brief summary with storm event dates where insufficient volumes were collected. Include the parameters analyzed.
- A description of the sediment sampling event, including:
 - Whether or not any chemicals were removed from the list of analysis due to two years of non-detect data.
 - A summary of sediment sampling (including dates) where insufficient volumes were collected. Include the parameters analyzed.
- Event Mean Concentrations (EMCs) for each successful storm event.
- The wet and dry season pollutant loads and annual pollutant load based on water year for each site expressed in total pounds, and pounds/acre. Include the following:
 - ~~○ For storm events where water quality samples were collected, the load for each parameter for each sampled storm event, include date of storm events.~~
 - An estimated seasonal pollutant load for each parameter at each site. This is calculated using all storm events (where water quality samples were collected and were not collected).
 - A total annual pollutant load (wet season load + dry season load) for each parameter (include estimated events).
 - The rainfall/runoff relationship including your pollutant load estimates for un-sampled events.
 - Note that if any data is unavailable to effectively estimate your rainfall to runoff relationship due to an incomplete water year, submit this information in the next year's stormwater monitoring report.
- Quality Assurance/Quality Control information for each *sampled storm event* at each site and *sediments* sampled at each site, including:
 - A narrative summary of your field and laboratory verification, validation results and quality control checks performed.
 - A narrative analysis of your field and laboratory quality control sample results and how they compare with your data quality objectives/indicators in your QAPP.
 - Corrective actions reported/taken.
- ~~● An explanation and discussion of results from each *sampled storm event* at each monitoring site and *sediments* collected at each site, including:~~
 - ~~○ A narrative analysis of the event mean concentrations for each parameter.~~
 - ~~○ Any conclusions based on trend data that may result from this study or from previously collected data from these sites.~~

~~A description of Stormwater Management Program activities currently taking place or planned within the monitoring station's drainage area that may have affected or may potentially affect future monitoring results.~~

If the Permittee monitors any pollutant more frequently at the stormwater discharge monitoring sites, then the results of this monitoring shall be included in the annual monitoring report reflecting the water year in which the monitoring occurred.

After 3 water years of data, the Annual Monitoring Report shall include an evaluation of the data as it applies to the SWMP, and shall identify any stormwater management activities that can be adjusted to respond to this data.

Laboratory Methods

The Permittee's stormwater discharge monitoring program shall use the following analytical methods unless alternative methods are approved by Ecology. ~~in the Permittees' QAPP the following analytical methods shall be used by Permittees when analyzing stormwater as required by section S8—Monitoring of this permit.~~ Any alternative method proposed by the Permittee must have a similar reporting limit, or must be justified as adequate for the likely range of concentrations. Permittees are not guaranteed approval of their alternative methods or reporting limits.

In cases where smaller volumes of water are expected to be collected, or to save analytical costs, Permittees may propose that some of the analyses be optimized for specific parameters or groups. The Permittee must, in consultation with a qualified chemist, define the exact volumes and optimization steps and include them in the QAPP.

Table 9-1 Analytical Procedures in Stormwater

Analyte (or Surrogate)	Method in Water	Reporting Limit <u>Target Requirement*</u>
Conventional Parameters		
Total suspended solids	SM 2540B ^b or SM 2540D	1.0 mg/L
Turbidity	EPA Method 180.1 or SM2130B	+ 0.2 NTU
Conductivity	SM 2510 or EPA Method 120.1	+ 1 umhos/cm
Chloride	EPA Method 300.0, EPA Method 325.2, or SM4110B	0.2 mg/L
BOD ₅	SM5210B	2.0 mg/L
(Delete PSD)		
Grain Size	Ecology method sieve and pipette (ASTM 1997), PSEP 1986/2003, or comparable method	NA
pH	EPA Method 150.2 or SM 4500H ⁺	0.2 units
Hardness as CaCO ₃	EPA Method 200.7, SM2340B(ICP), SM2340C (titration) or SM 3120B	1.0 mg/L
Methylene Blue Activated	SM 2340B (ICP) or 2340C	0.025 mg/L

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Substances (MBAS)	(Titration)CHEMetrics Colorimetric or SM5540C	
Bacteria		
Fecal Coliform	SM 9221E	2 min., 2E6 max.
Nutrients		
Total phosphorus	EPA Method 365.3, EPA Method 365.4, SM 4500-P E or SM4500-P F	0.01 mg P/L
Orthophosphate	EPA Method 365.3, EPA Method 365.1, SM 4500-P E or SM4500-P F	0.01 mg P/L
Total kjeldahl nitrogen	EPA Method 351.2, EPA Method 351.1, SM 4500 Norg-B, SM 4500 Norg-C, SM 4500 NH3-D, SM 4500 NH3-G, SM 4500 NH3-E or SM4500 NH3-F	0.5 mg/L
Nitrate-Nitrite	EPA Method 353.2 or SM 4500 -NO3 ⁻ E	0.01 mg/L
Metals		
Total recoverable zinc	EPA Method 200.8 (ICP/MS), EPA Method 200.7 (ICP/MS) or SM 3125 (ICP/MS)	5.0 µg/l
Dissolved zinc	EPA Method 200.8 (ICP/MS), or SM 3125 (ICP/MS)	1.0 µg/l
Analyte (or Surrogate)	Method in Water	Reporting Limit Target*
Total recoverable lead	EPA Method 200.8 (ICP/MS), or SM 3125 (ICP/MS)	0.1 µg/l
Dissolved lead	EPA Method 200.8 (ICP/MS), or SM 3125 (ICP/MS)	0.1 µg/l
Total recoverable copper	EPA Method 200.8 (ICP/MS), or SM 3125 (ICP/MS)	0.1 µg/l
Dissolved copper	EPA Method 200.8 (ICP/MS), or SM 3125 (ICP/MS)	0.1 µg/l
Total recoverable cadmium	EPA Method 200.8 (ICP/MS), or SM 3125 (ICP/MS)	0.2 µg/l
Dissolved cadmium	EPA Method 200.8 (ICP/MS), or SM 3125 (ICP/MS)	0.1 µg/l
Total Mercury	EPA Method 7470 (CVAA), EPA Method 245.7, or EPA Method 1631E	0.1 µg/l
Dissolved Mercury	EPA Method 7470 (CVAA), EPA Method 245.7, or EPA 1631E	0.1 µg/l
Organics		
PAH Compounds	EPA Method 8310 or 8270D SIM	0.1 µg/l
Bis(2-ethylhexyl)Phthalates	EPA Method 8270D	0.250 µg/l
Herbicides (2,4-D, MCPP, Triclopyr, Dichlobenil, Pentachlorophenol)	EPA Method 8270D SIM or 8151	0.01—1.0 µg/l
Pesticides, Nitrogen (Prometon)	EPA Method 8270D SIM	0.01—1.0 µg/l
Pesticides, Organophosphates (Diazinon)	EPA Method 8270D SIM or 8141	0.01—1.0 µg/l

Petroleum Hydrocarbons		
NWTPH-Dx	Ecology, 1997, (Publication No. 97-602) or EPA SW-846 method 8015B; lube oil fraction	0.1 25 -0.50 mg/L
NWTPH-Gx	Ecology, 1997, (Publication No. 97-602)	0.1 25 mg/L
BTEX	EPA Method 602	
Toxicity		
Environment Canada Trout Embryo Viability	E-test in Env. Canada EPS 1/RM/28. See also Ecology publication no. WQ R-95-80.	NA

a. ~~All results below reporting limits should also be reported and identified as such. These results may be used in the statistical evaluations.~~

b. To ensure accurate results, Ecology recommends modifying these methods to analyze (filter) the entire field sample. Research results indicate that errors may be introduced by decanting a subsample, although using a funnel splitter may help. The analyst may also consider analyzing several premixed subsamples from the same sample container to determine if significant variability occurred due to stratification. Reports shall indicate whether the entire field sample or a subsample was used.

NA – Not applicable
SM – Standard Methods

Table 9-2 Analytical Procedures in Sediments

Analyte (or Surrogate)	Method in Sediment	Reporting Limit Target ^a
Conventional Parameters		
Total Percent Solids	SM 2540B	NA
Total Organic Carbon	Puget Sound Estuary Protocols (PSEP 1997), SM 5310B, SM 5310C, SM 5310D or EPA Method 9060	0.1%
Grain-size	Ecology Method Sieve and Pipette (ASTM 1997), ASTM F312-97, ASTM D422 or PSEP 1986/2003	NA
Total Phosphorus	EPA Method 365.3, EPA Method 365.4, SM 4500 P E or SM 4500 P F	0.01 mg/kg
Total Volatile Solids	EPA Method 160.4 or SM 2540E	0.1%
Metals		
Total Recoverable Zinc	EPA Method 200.8 (ICP/MS), EPA Method 6010, EPA Method 6020 or SM 3125 (ICP/MS), or EPA Method 200.7 (ICP)	5.0 mg/kg
Total Recoverable Lead	EPA Method 200.8 (ICP/MS), EPA Method 6010, EPA Method 6020 or SM 3125 (ICP/MS)	0.1 mg/kg
Total Recoverable Copper	EPA Method 200.8 (ICP/MS), EPA Method 6010, EPA Method 6020 or SM 3125 (ICP/MS)	0.1 mg/kg
Total Recoverable Cadmium	EPA Method 200.8 (ICP/MS), EPA Method 6010, EPA Method 6020 or SM 3125 (ICP/MS)	0.1 mg/kg

Total Recoverable Mercury	EPA Method 245.5 or EPA Method 7471B	0.1 mg/kg
Organics		
PAH Compounds	EPA Method 8270D ^b	70 µg/Kg dry
Phthalates	EPA Method 8270D ^b	70 µg/Kg dry
Phenolics	EPA Method 8270D ^b or PSEP 1997	70 µg/Kg dry
PCB's	EPA Method 8082	80 µg/Kg dry
Pentachlorophenol	EPA Method 8270D SIM or EPA Method 8151	1.0 µg/kg
Diazinon	EPA Method 8270D SIM or EPA Method 8141	50 µg/kg
Chlorpyrifos and Malathion	EPA Method 8270D SIM or EPA Method 8141	25 µg/kg
Petroleum Hydrocarbons		
NWTPH-Dx	Ecology, 1997 (Publication No. 97-602) or EPA SW-846 method 8015B	25.0-100.0 mg/Kg
BTEX	EPA Method 8320	

- a. All results below reporting limits shall also be reported and identified as such. These results may be used in the statistical evaluations.
 - b. Sample preparation procedures followed: 3550, 3640, 3660G, and 3620
- NA – Not applicable
SM – Standard Methods

~~**WET SIEVING AND MASS MEASUREMENT
FOR LASER DIFFRACTION ANALYSIS**~~

~~**WET SIEVING**~~

~~**Sample Collection/Handling**~~

~~Samples should be collected in HDPE or Teflon containers and held at 4 degrees C during the collection process. If organic compounds are being collected, the sample containers should be glass or Teflon.~~

~~**Preservation/Holding Time**~~

~~Samples should be stored at 4° C and must be analyzed within 7 days (EPA, 1998). Samples may not be frozen or dried prior to analysis, as either process may change the particle size distribution.~~

~~**Sonication**~~

~~Do not sonicate samples prior to analysis to preserve particle integrity and representativeness. Laboratories using laser diffraction will have to be notified not to sonicate these samples at any time during the analysis. It is recommended that this request also be written on the chain-of-custody form that the analytical laboratory receives in order to assure that sonication is omitted.~~

~~**LABORATORY PROCEDURES**~~

~~**Equipment**~~

- 1
- 2 ~~___ 2 Liters of stormwater sample water (total sample required for analysis (ASTM D 3977))~~
- 3 ~~___ Drying oven (90 degrees C \pm 2 degrees)~~
- 4 ~~___ Analytical balance (0.01 mg accuracy)~~
- 5 ~~___ Desiccator (large enough diameter to accommodate sieve)~~
- 6 ~~___ Standard sieves — larger than 2" diameter may be desirable~~
 - 7 ~~___ 500 um (Tyler 32, US Standard 35)~~
 - 8 ~~___ 250 um (Tyler 60, US Standard 60)~~
- 9 ~~___ Beakers — plastic (HDPE)~~
- 10 ~~___ Funnel (HDPE — Large enough diameter to accommodate sieve)~~
- 11 ~~___ Wash bottle~~
- 12 ~~___ Pre-measured reagent grade water~~
- 13

1 **Sample Processing**

- 2
- 3 ● Dry 250-um and 500-um mesh sieves in a drying oven to a constant weight at $90 \pm 2^\circ \text{C}$.
 - 4 ● Cool the sieves to room temperature in a desiccator.
 - 5 ● Weigh each sieve to the nearest 0.01 mg.
 - 6 ● Record the initial weight of each dry sieve.
 - 7 ● Measure the volume of sample water and record.
 - 8 ● Pour the sample through a nested sieve stack (the 500-um sieve should be on the top and
 - 9 the sieve stack should be stabilized in a funnel and the funnel should be resting
 - 10 above/inside a collection beaker).
 - 11 ● Use some of the pre-measured reagent-grade water in wash bottle to thoroughly rinse all
 - 12 soil particles from sample container so that all soil particles are rinsed through the sieve.
 - 13 ● Thoroughly rinse the soil particles in the sieve using a pre-measured volume of reagent-
 - 14 grade water.
 - 15 ● The particles that pass through the sieve stack will be analyzed by laser diffraction
 - 16 Particle Size Distribution (PSD) analysis using the manufacturers recommended protocols
 - 17 (with the exception of no sonication).
 - 18 ● Particles retained on the sieve ($>250\text{-um}$) will not be analyzed with the laser diffraction
 - 19 PSD.
 - 20 ● Dry each sieve (500 um and 250 um) with the material it retained in a drying oven to a
 - 21 constant weight at $90 \pm 2^\circ \text{C}$. The drying temperature should be less than 100°C to
 - 22 prevent boiling and potential loss of sample (PSEP, 1986).
 - 23 ● Cool the samples to room temperature in a desiccator.
 - 24 ● Weigh the cooled sample with each sieve to the nearest 0.01 mg.
 - 25 ● Subtract initial dry weight of each sieve from final dry weight of the sample and sieve
 - 26 together.
 - 27 ● Record weight of particles/debris separately for each size fraction ($\geq 500\text{-um}$ and 499--
 - 28 250-um).
 - 29 ● Document the dominant types of particles/debris found in this each size fraction.
- 30

31

32 **Laser Diffraction (PSD)**

33

34 PSD results are reported in ml/L for each particle size range. Particle size gradations should

35 match the Wentworth grade scale (Wentworth, 1922).

36

37 **Mass Measurement**

38

39 **Equipment**

- 40
- 41 — Glass filter—0.45-um (pore size) glass fiber filter disk (Standard Method D 3977) (larger
 - 42 diameter sized filter is preferable)
 - 43 — Drying oven (90 degrees C \pm 2 degrees)
 - 44 — Analytical balance (0.01 mg accuracy)

- ~~— Wash bottle~~
- ~~— Reagent grade water~~

Procedure

- ~~• Dry glass filter in drying oven at $90 \pm 2^\circ \text{C}$ to a constant weight.~~
- ~~• Cool the glass filter to room temperature in a desiccator.~~
- ~~• Weigh the 0.45 μm glass filter to the nearest 0.01mg.~~
- ~~• Record the initial weight of the glass filter.~~
- ~~• Slowly pour the laser diffraction sample water (after analysis) through the previously weighed 0.45 μm glass filter and discard the water.~~
- ~~• Use reagent grade water in wash bottle to rinse particles adhering to the analysis container onto glass filter~~
- ~~• Dry glass filter with particles in a drying oven at $90 \pm 2^\circ \text{C}$ to a constant weight.~~
- ~~• Cool the glass filter and dried particles to room temperature in a desiccator.~~
- ~~• Weigh the glass filter and particles to the nearest 0.01mg.~~
- ~~• Subtract the initial glass filter weight from the final glass filter and particle sample weight.~~
- ~~• Record the final sample weight for particles $< 250 \mu\text{m}$ in size.~~

Quality Assurance

~~Dried samples should be cooled in a desiccator and held there until they are weighed. If a desiccator is not used, the particles will accumulate ambient moisture and the sample weight will be overestimated. A color indicating desiccant is recommended so that spent desiccant can be detected easily. Also, the seal on the desiccator should be checked periodically, and, if necessary, the ground glass rims should be greased or the "O" rings should be replaced.~~

~~Handle sieves with clean gloves to avoid adding oils or other products that could increase the weight. The weighing room should not have fluctuating temperatures or changing humidity. Any conditions that could affect results such as doors opening and closing should be minimized as much as possible.~~

~~After the initial weight of the sieve is measured, the sieve should be kept covered and dust free. Duplicate samples should be analyzed on 10% of the samples for both wet sieving and mass measurements.~~

Reporting

~~Visual observations should be made on all wet sieved fractions and recorded. For example if the very coarse sand fraction (2,000–1,000 μm) is composed primarily of beauty bark, or cigarette butts, or other organic debris this should be noted. An option might also be for a professional geologist to record the geological composition of the sediment as well.~~

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REFERENCES

~~ASTM. 1997. Standard test methods for determining sediment concentration in water samples. Method D 3977. American Society for Testing and Materials, Philadelphia, PA.~~

~~PSEP. 1986. Recommended Protocols for measuring conventional sediment variables in Puget Sound. Prepared by Tetra Tech, Inc. for U.S. Environmental Protection Agency and Puget Sound Water Quality Authority. Tetra Tech Inc., Bellevue, WA.~~

~~U. S. EPA. 1998. Analysis of total suspended solids by EPA Method 160.2. Region 9, Revision 1. SOP 462. 12 pp~~

~~Wentworth, C.K. 1922. A scale of grade and class terms for elastic sediments. *Journal of Geology*. 30:377-392~~

City of Seattle Comments – Attachment 5

APPENDIX 11 – Structural Stormwater Controls Project List

Note: Seattle recommends the changes shown via tracked changes and highlighted.

The annual reporting requirement described in S5.C.6.b.ii must follow the format and instructions provided in this appendix. Once placed on the list, projects must remain on the list throughout the permit cycle even if the project is cancelled.

Project Name	Type ¹	Start Year	Status ²	End Year	Cost Estimate	WQ Benefit		Retrofit Incentive ⁵	Other benefit	Monitoring Planned (yes/no)	Lat/Long (X,Y)	Receiving water body name	Comments
						(Est. TSS or TS reduction lbs/yr) ³	Hydro Benefit (Avg. % flow reduction) ⁴						
XYZ Pond	2	2013	4	2015	\$75K	0.1	75%	0.345	Demo project	yes	47/-122	Wet Creek	EXAMPLE ONLY

¹Type

1. New flow control facility
2. New treatment facility (or treatment and flow control facility)
3. Retrofit of existing treatment and/or flow control facility
4. Property acquisition for water quality and/or flow control benefits (not associated with future facility)
5. Property acquisition for riparian habitat
6. Restoration of forest cover
7. Restoration of riparian buffer
8. Maintenance with capital construction costs ≥ \$25,000
9. Other activity addressing stormwater runoff into or from the MS4 not addressed by other S5.C permit conditions

10. New LID BMPs or application of LID Principles

²Status (as of December 31st of the reporting year)

1. Planning
2. Design and permitting
3. Construction
4. Complete/Maintenance
5. Project Cancelled
6. Property acquisition

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11. High-efficiency Street Sweeping

³Estimated total suspended solids (TSS) or Total Solids (TS) (for maintenance activities) reduction – See Water Quality Benefit (Estimated TSS or TS reduction) Calculation below.

⁴Hydro Benefit – See Hydro Benefit (Avg. % flow reduction) Calculation below.

⁵Retrofit Incentive – Select the appropriate project achievement category from the table below based on your project type and the specifics of the project. Calculate the incentive points as shown in the table and example below. Ecology may approve other Project Achievements and Incentive Points if the Permittee justifies their appropriateness.

Project Achievement	Incentive Points
Water Quality: Better than Existing	100 (as % of impervious area served by the project)
Water Quality: Better than Existing in known water quality problem area	150 (as % of impervious area served by the project)
Water Quality (High-efficiency street sweeping): Better than Existing	100 (as % roadway area swept)
Water Quality (High-efficiency street sweeping): Better than Existing in known water quality problem area	150 (as % roadway area swept)
Water Quality: Basic Treatment	150 (as % of impervious area served by the project)
Water Quality: Enhanced Treatment	175 (as % of impervious area served by the project)
Water Quality: Meets WQ standards for target pollutant (assumed to be > level of treatment than enhanced)	200 (as % of impervious area served by the project)
Flow Control: Meets duration standard for Existing Impervious (assumed to be better than currently provided)	100 (as % of impervious area served by the project)
Flow Control: Meets duration standard for Pasture	125 (as % of impervious area served by the project)
Flow Control: Meets duration standard for Forest	150 (as % of impervious area served by the project)
Flow Control: Protects habitat or prevents erosion and scour in a known flow control problem area.	150 (as % of impervious area served by the project)
Maintenance Activity (≥ \$25,000)	25 (as a % of the impervious area served by the maintenance activity)
LID BMPs/LID Principles: Better than Existing	100 (as % of impervious area served by the project)

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LID BMPs/LID Principles: Meets LID Performance Standard	200 (as % of impervious area served by the project)
Riparian Habitat Acquisition	50 (as % of acres acquired)
Restoration of Forest Cover	25 (as % of acres restored)
Restoration of Riparian Buffer	25 (as % of acres restored)

Example of Incentive Computation: WQ retrofit project (XYZ Pond) serves .23 ac (10,000 sf) and is designed to provide better than existing WQ treatment and flow control to meet standard for forest = $.23 \times 1.5$ (150%) = 0.345 (Example provides both treatment and flow control with greater multiplier used).

1 | **Water Quality Benefit (Estimated TSS or TS reduction) Calculation**

2 | **Overview:**

3 | **This method is a rough estimate that is not suitable for purposes beyond a high level summary for Project List reporting.** The general process
4 | involves calculating three items:

- 5 | 1. Impervious area acres of commercial, industrial, low density residential and/or high density residential land uses addressed by the structural
6 | control.
- 7 | 2. Median annual TSS unit area loading rate associated with each land use (derived from data collected under S8.D requirements of the 2007
8 | Phase I permit).
- 9 | 3. The **estimated** percent TSS removal efficiency of the facility as designed.

10 | For maintenance projects involving solids removal, estimated reduction is the **sum of estimated dry weight of the total** solids **(TS)** removed in
11 | pounds. Ecology may approve other methods of calculating an estimated TSS reduction if the Permittee justifies the method is appropriate for the
12 | relevant project type.

13 | **Estimated TSS Reduction Formula:**

14 | Calculate pre-project TSS loading by using the Estimated TSS Reduction Formula below.

15 |

16 | *Land use category* *Median TSS Unit* *Stormwater treatment* *Estimated TSS*

17 | *area contributing to project* *x* *Area Loading Rate* *x* *removal efficiency for TSS* = *Reduction*

18 | *(impervious? acres)* *(lbs/acre/year)* *(%)* *(lbs/year)*

19 | Enter the Estimated TSS Reduction number in the Appendix 11 reporting table under “WQ Benefit (Est. TSS reduction lbs/yr)”.

20 |

21 | **Hydro Benefit (Avg. % flow reduction) Calculation**

22 | **Overview:**

23 | The general process involves calculating two volumes:

- 24 | • **Actual storage volume provided by the project:** The amount of detention/retention storage volume created by the project. The volume used
25 | here is the total volume of a detention/retention storage facility regardless of whether you develop the volume through construction of a new
26 | facility or through expansion on an existing facility.

27 • **Volume required if the project had to meet the Standard Flow Control Requirement:** Choose either (1) The amount of
28 detention/retention storage required to match developed discharge durations to pre-developed durations for the range of pre-developed
29 discharge rates from 50% of the 2-year peak flow up to the full 50-year peak flow, or (2) the amount of retention required to achieve the LID
30 performance target to match developed discharge durations to pre-developed durations for the range of pre-developed discharge rates from 8% of
31 the 2-year peak flow to 50% of the 2-year peak flow¹. This is determined using WWHM (or an approved equivalent modeling program) and
32 assuming a forested pre-developed condition¹.

33 Use the resulting quotient created by dividing the Actual storage volume provided by the project by the volume required if the project had to meet
34 the Standard Flow Control Requirement to determine the volume ratio.

35 Ecology may approve other methods of calculating an estimated Hydro Benefit if the Permittee justifies the method is appropriate for the relevant
36 project type.

37 **Volume Ratio Calculation:**

38 The calculation compares the new or increased storage volume created by the project to the required detention/retention storage volume under the
39 Standard Flow Control Requirement:

40 Choose either (1)

41 *Actual storage volume provided by the project*

$$X \ 100 = \text{Volume Ratio}$$

42 *Volume required if the project had to meet the Standard Flow Control Requirement*

43 Or (2)

44 *Percent stormwater volume infiltrated or reused by the project*

$$X \ 100 = \text{Volume Ratio}$$

45 *Percent volume required to infiltrate or reuse*
46 *to meet the Standard LID performance standard*

47 If the volume ratio of the projects is:

- Equal to or less than 25%, then the project will have a hydro benefit of 25%.

¹ Use forested land cover as the pre-developed condition unless one of the following applies:

- Reasonable, historic information is available that indicates the site was prairie prior to settlement (modeled as “pasture” in the WWHM).
- 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.

- Greater than 25%, then that project will have a hydro benefit equal to the project's volume ratio, up to 100%.

The project will have a hydro benefit of 100%, if the project does one or more of the following:

- **Achieves LID performance standard through volume reduction strategies. Infiltrates all of the 25-year, 24-hour storm-on-site.**
- Uses Full Dispersion functionally equivalent to BMP T 5.30 in Chapter 5 of the *Stormwater Management Manual for Western Washington*.
- ~~Uses a vegetated roof or an impervious roof with runoff routed below permeable pavement.~~
- ~~100% credit for hard surface area within the project... that uses permeable pavement for a minimum of 50% of the project's hard surface area (other than roofs), in accordance with design criteria in Appendix III-C of the *Stormwater Management Manual for Western Washington*.~~

Calculation Process:

1. Determine the volume required if the project had to meet the Standard Flow Control Requirement:

- (1) Calculate the storage volume (ac-ft) below the emergency spillway (top of riser) that is available in the new facility. Use the construction drawings to create this value.
- (2) Using WWHM*, create a predevelopment scenario for the watershed controlled by the detention/retention facility included in the project.
- (3) Use the "Auto Pond" feature in WWHM* to calculate the storage volume necessary to meet the new and redevelopment guidelines. Use riser, outlet, and side slope dimensions similar to the proposed facilities. Do not include infiltration.

***Other approved models or pond sizing methodologies providing comparable data are acceptable.**

2. Calculate the volume ratio by using the formula in the Volume Ratio Calculation section.
3. If the volume ratio of the projects is:
 - o Equal to or less than 25%, then the project will have a hydro benefit of 25%.
 - o Greater than 25%, then that project will have a hydro benefit equal to the project's volume ratio, up to 100%.
4. Enter the hydro benefit number in the Appendix 11 reporting table under "Hydro Benefit (Average % flow reduction)".

City of Seattle Comments – Attachment 6

APPENDIX 12 – Funding Agreement between Ecology and Municipal Stormwater Permittees

Note: Seattle recommends that Appendix 12 be omitted. If Ecology includes Appendix 12, Seattle recommends the changes shown via tracked changes and highlighted.

This Funding Agreement is between the State of Washington, acting by and through its DEPARTMENT OF ECOLOGY, hereafter called "Ecology," and [JURISDICTION], hereafter called "[Jurisdiction]."

Background:

Ecology ~~is re-issuing~~reissued Phase I and western Washington Phase II Municipal Stormwater National Pollutant Discharge Elimination System (NPDES) General Permits (issued DATE, 2012 and effective DATE, 2012) ("Permit"), with new monitoring requirements. The Stormwater Work Group, a formal stakeholder committee, recommended that Ecology require Permittees to equitably contribute funds to implement a regional stormwater monitoring program (RSMP). Furthermore, the Stormwater Work Group recommended that Ecology serve as the administrative entity to manage the pooled funds, that Ecology enter into contractual arrangements with each Permittee, and that this agreement ensure that the funds will be spent on RSMP activities in accordance with Stormwater Work Group recommendations. Ecology agrees with the Stormwater Work Group recommendations and has designed the monitoring requirements in S8 and this Appendix to implement the RSMP.

The project RSMP is being jointly funded in part by all of the Phase I and western Washington Phase II Municipal Stormwater NPDES Permittees (approximately 91 local jurisdictions and two ports) who choose to participate in the RSMP. Participating Permittees' funding payments are limited to the amounts stated for each Permittee in Permit conditions S8.C.1, S8.D.1, S8.D.3, and S8.E.1. Dates that permittees' Permittees' funding shares payments are due to Ecology and the amount of each permittee's share during each year of the five-year permit are stated defined in permit conditions S8.C.1, S8.D.1, S8.D.3, and S8.E.1. All funding partners will be formally acknowledged in reports and other publications resulting from the project RSMP.

All interested parties will have access to all of the data and information generated by the project.

Agreement Purpose:

The purpose of this Agreement is to provide a share of the funding Permit required funding to conduct toward a regional stormwater monitoring program under the NPDES Municipal Stormwater Permit, and to set forth Ecology's responsibilities regarding funds paid by the [Jurisdiction]s.

Effective Date and Duration:

1 This Agreement shall become effective on the date on which both parties have signed this Agreement. This
2 Agreement shall expire on [end of state fiscal year following expiration date of permit]. Work covered by this
3 ~~agreement~~ Agreement will be completed by [end of state fiscal year following expiration date of permit],
4 unless terminated sooner as provided herein.

5
6 **Statement of Work:**

7 Ecology agrees to manage the funds, participate in an oversight committee, solicit requests for proposals,
8 conduct an open and transparent process to rank applications, and enter into contracts with other entities to
9 perform the activities described in **Attachment A – Scope of Work**, attached hereto by reference.

10
11 **Consideration:**

12 The applicable Permit governs [Jurisdiction’s] payment obligations and supersedes this Agreement in the
13 event of any conflict between the two. In summary, [Jurisdiction] ~~agrees is obligated by the Permit~~ to pay
14 Ecology the total sum of _____ dollars as its share payment for accomplishing the work required by this
15 agreement ~~Agreement~~. This sum shall be paid in annual installments of _____ dollars.

16
17 This includes the sum of _____ dollars annually as [Jurisdiction’s] share for status and trends monitoring in
18 Puget Sound receiving waters; _____ dollars annually as [Jurisdiction’s] share for regional effectiveness
19 studies; and _____ dollars annually as [Jurisdiction’s] share for the Western Washington source identification
20 and diagnostic monitoring information repository.

21
22 **Billing Procedure:**

23 An invoice for the consideration will be mailed on [not more than 60 days before the payment due date
24 established in permit conditions S8.C.1.a; S8.D.1, S8D.3, and S8.E.1] to the following address:

25 Jurisdiction contact
26 [Jurisdiction]
27 Jurisdiction address
28 Jurisdiction city, WA zip

29
30 Payments will be due to Ecology on or before [the dates specified in the permit], mailed to the following
31 address:

32 Department of Ecology
33 Cashiering Section
34 P.O. Box 47611
35 Olympia, WA 98504-7611
36

37 **Amendments:**

38 Ecology and [Jurisdiction] may mutually amend this Agreement. The terms of this Agreement shall not be
39 waived, altered, modified, supplemented, or amended, in any manner whatsoever, except by written
40 instrument signed by both parties.

41
42 **Access to Records:**

43 All records supporting every request for payment shall be maintained by Ecology in a manner which will
44 provide an audit trail to the expenditures for which state support is provided. Original source documents

1 shall be maintained by Ecology and made available to [Jurisdiction] or a duly authorized representative upon
2 request.
3

4 **Cost Overruns:**

5 ~~Ecology will not be~~ Neither Ecology nor [Jurisdiction] shall be responsible for cost overruns. The total project
6 cost estimate for which [Jurisdiction]’s ~~share payment~~ has been determined includes a 10% contingency.
7

8 **Excess Funds:**

9 If after the completion date of this project, excess funds remain in Ecology’s project account, Ecology will
10 refund a pro-rated refunded amount to [Jurisdiction] no later than six months following the completion date
11 of the project.
12

13 **Merger Clause:**

14 ~~This Agreement constitutes the entire agreement between the parties.~~ No waiver, consent, modification, or
15 change of terms of this Agreement shall bind either party unless in writing and signed by both parties and
16 fully consistent with the terms of the Municipal Stormwater NPDES Permit applicable to [Jurisdiction]. Such
17 waiver, consent, modification or change, if made, shall be effective only in the specific instance and for the
18 specific purpose given. ~~There are no understandings, agreements, or representations, oral or written, not~~
19 ~~specified hereing regarding this Agreement.~~ Each party, by signature below of its authorized representative,
20 hereby acknowledges that s/he has read this Agreement, understands it, and agrees to be bound by its terms
21 and conditions.
22

23 The Project officer for Ecology is:

The Project officer for [Jurisdiction] is:

24 [Ecology Project Officer Name]
25 Water Quality Program
26 Washington State Department of Ecology
27 P.O. Box 47600
28 Olympia, Washington 98504-7600
29 Phone: (360) 407-[xxxx]
30 email: []

[Jurisdiction Project Officer Name]
Division or section
[Jurisdiction]
[Jurisdiction address]
[Jurisdiction city, WA zip]
Phone: [(xxx) xxx-xxxx]
email: []

33 **Approved by Ecology:**

Approved by [Jurisdiction]:

34 Polly Zehm
35 State of Washington
36 Department of Ecology
37
38
39

[Jurisdiction signature information]

40 _____
41 Signature

Signature

42
43
44 Deputy Director

45 Title Date

Title Date

Draft Phase I Municipal Stormwater Permit

1
2 Approved as to form only by the Attorney General's Office.
3

1 Attachment A – Scope of Work

2 The purpose of this attachment is to define the activities and products of a Regional Stormwater
3 Monitoring Program (RSMP) that will be delivered by Ecology, through Requests for Proposals and
4 subsequent contractual arrangements with other entities for services to be provided (including
5 permittees) during the next cycle of National Pollutant Discharge Elimination System (NPDES) Permits for
6 Municipally-owned Municipal Separate Storm Sewer Systems in Western Washington, subject to the
7 available resources..

8 The Stormwater Work Group has made recommendations to Ecology in the form of Recommendations
9 for Municipal Permit Stormwater Monitoring, October 2010 and subsequent letters to Ecology. The
10 activities below will be funded by permittees’ Permittees’ collective contributions (cost shares funding
11 payments), which shall be limited to the amounts required by and stated in the NPDES permits, and
12 other discrete funding sources that become available. Ecology is not responsible for funding the RSMP,
13 only for administering the funding and contracts to implement the RSMP within resources provided by
14 the Permittees and any external resources that become available. Cost estimates are provided herein.
15 The tasks are separated into Ecology’s administrative and RSMP management tasks and Contractors’
16 preparation, data collection, reporting, and analysis tasks for each RSMP component.

17 Funds may be shifted within or among program components, and costs (including data collection, data
18 management, and reporting) are expected to be no more than the total costs listed below:

RSMP task	Implemented by	Timeline (August 2014 through August 2018 unless otherwise noted)	Total costs (annual costs are for four years)
0. Program administration	Ecology		\$150,000 per year, or about 5% of the total RSMP costs
1. Puget lowland small streams monitoring	Contractors	Conduct monitoring in 2016-2018	\$2,515,000 total
2. Marine nearshore: sediment monitoring	Contractors	Conduct monitoring in summer 2016	\$220,000 total
2. Marine nearshore: bacteria monitoring	Contractors	Conduct monitoring October 2015 through September 2016	\$66,200 total
2. Marine nearshore: mussel monitoring	Contractors	Conduct monitoring in winter 2015-2016	\$618,300 total
3. Regional effectiveness studies	Contractors		\$1,750,000 per year

4. Source Identification and Diagnostic Monitoring Information Repository	Contractors		\$161,250 per year
TOTAL RSMP			\$2.97 million per year

1 More detailed information about the each of the above tasks, timelines, and deliverables is included in
 2 the following. More detailed information about the cost estimates is provided in the permit Fact Sheet.
 3 Note that a Water Year is defined as beginning October 1 of the prior year and ending on September 30
 4 (e.g., Water Year 2016 begins October 1, 2015 and ends October 1, 2016). Ecology and Contractor Tasks
 5 described as part of this Scope of Work are based on the assumption of funding from full participation of
 6 all Permittees (i.e., no Permittees select a non-RSMP option) and from initial RSMP cost estimates.
 7 Ecology shall adjust, reduce, and prioritize the scope of work of the RSMP as necessary to operate within
 8 available funding. Such changes are contemplated in this scope of work and shall not require notice to,
 9 or approval by, any entity other than Ecology.

10 **Ecology Tasks:**

11 0. Program Administration, Requests for Proposals, and Contracting

- 12 1. Enter into and manage funding payment agreements with all permittees Permittees who choose
- 13 to participate in this cost-sharing arrangement.
- 14 2. Track and control costs associated with all RSMP fund-sharing program components.
- 15 3. Participate in a project management oversight process pursuant to SWG recommendations from
- 16 the first date of RSMP.
- 17 4. Open a competitive process to determine who will conduct each of the **Contractor Tasks** listed
- 18 below for:
 - 19 a. Status and trends monitoring in small Puget Sound lowland streams and in marine
 - 20 nearshore areas of Puget Sound;
 - 21 b. Source identification and diagnostic information repository; and
 - 22 c. Effectiveness studies.
- 23 5. Develop detailed scopes of work to ensure contractors are qualified to conduct RSMP tasks
- 24 according to approved Quality Assurance Project Plans (QAPPs).
- 25 6. Contract with successful applicants and provide project management oversight to ensure that
- 26 quality data and other products are produced in a timely fashion within budgeted amounts.
- 27 7. Coordinate an annual review and reporting of results and information generated by the RSMP.
- 28 In addition, to conduct the data interpretation tasks listed below:
 - 29 a. Summarize findings from all RSMP components.
 - 30 b. Cross-walk with information published by other key monitoring programs in western
 - 31 Washington.
 - 32 c. Recommend new standard protocols to be developed.
 - 33 d. Share data/results/conclusions with Permittees and other interested parties.
 - 34 8. Identify or develop suitable data management systems for Contractor Tasks 1, 2, and 3.
 - 35 8-9. Provide a technical program lead to help coordinate the Status & Trends, Regional Effectiveness,
 - 36 and Source ID SWG subgroups.

37 **Permittee Tasks:**

1 1. Permittees agree to make payments as required by S8 of the applicable Municipal Stormwater
2 NPDES Permit.

3 2. Permittees who make the payments required by the NPDES Permit are not responsible for
4 additional costs or actions.

5
6 **Contractor Tasks:**

7 1. Status and Trends Monitoring in Small Streams in Puget Sound Lowlands

8 Note: The [Quality Assurance Project Plan \(QAPP\)](#) for this monitoring is in final draft. The QAPP is
9 expected to be approved, in consultation with the SWG, in advance of the starting date of this cost-
10 sharing agreement. The initial list of sampling sites has been generated. There are 100 randomly
11 selected first, second, and third order stream sites; 50 of these sites are located inside and 50 outside of
12 UGA boundaries in Puget Sound lowlands. A map of alternate sites has also been generated. These two
13 maps are shown in Attachment B.

- 14 1. Prepare to conduct status and trends monitoring. Ecology expects these tasks to begin in
15 summer 2014 and be completed in summer 2016.
- 16 a. Site confirmation and preparation for sampling.
- 17 i. Confirm that all sites are accessible and suitable for sampling according to QAPP
18 protocols. For each site that is not accessible or otherwise unsuitable, the next
19 sequential site on the list of alternates will be chosen and must be confirmed.
- 20 ii. Procure sample collection equipment necessary to produce data according to
21 the QAPP.
- 22 b. Prepare to manage small stream status and trends monitoring data.
- 23 i. Confirm that data management tools are available to handle all RSMP data and
24 that all data will be quality controlled, stored and accessible to the public in a
25 timely fashion.
- 26 ii. Train field and lab personnel to QA/QC and report all data to the required data
27 bases according to the QAPP.
- 28 2. Complete analysis of streamflow gauging data for Puget Sound lowland streams by summer
29 2016.
- 30 i. Recommend what existing gages need to be maintained and whether new gages
31 need to be added to the network to support status and trends monitoring.
- 32 ii. Recommend what data management system will be needed and how best to
33 create a collaborative system.
- 34 3. Conduct status and trends monitoring in water years 2017 and 2018 according to the approved
35 QAPP. This task includes quality assurance and quality control (QA/QC), data reporting, and data
36 analysis and interpretation.
- 37 a. Collect and report monthly water quality index (WQI) and instantaneous flow
38 monitoring:
- 39 i. [Up to](#) 20 reference or “sentinel” sites in water year 2017, and
40 ii. [Up to](#) 100 “RSMP” sites in water year 2018.
- 41 b. Collect and report annual stream benthos and habitat monitoring:
- 42 i. [Up to](#) 20 sentinel sites in water year 2017, and

- ii. Up to 100 RSMP sites in water year 2018.
- c. Collect and report one-time sediment monitoring and toxicity sampling:
 - i. Up to 100 RSMP sites in water year 2018.
- d. Analyze and interpret ~~at~~ data according to the approved QAPP:
 - i. Interpret 20 sentinel site results in water years 2017-2018, and
 - ii. ~~Interpret 100 RSMP sites in a subsequent or extended agreement.~~

2. Status and Trends Monitoring in Marine Nearshore Areas of Puget Sound

1. Prepare to conduct status and trends monitoring. Ecology expects these tasks to begin in summer 2014 and be completed in summer 2016.
 - a. QAPP development and approval.
 - i. Write a complete QAPP or QAPPs and have it/them reviewed and approved by Ecology in consultation with the SWG. The QAPP(s) will include: site selection; sampling protocols for bacteria sampling, sediment sampling, and mussel tissue sampling; quality assurance and control procedures; laboratory analytical methods; data storage; and data analysis.
 - b. Confirm sites and prepare for sampling.
 - i. Confirm that all sites are accessible and suitable for sampling according to QAPP protocols. For each site that is not accessible or otherwise unsuitable, the next sequential site on the list of alternates will be chosen and must be confirmed.
 - ii. Conduct volunteer trainings and procure equipment necessary to collect data according to the QAPP.
 - c. Conduct a Mussel Watch laboratory comparison to ensure that data will be comparable with historic, nationally-collected data.
 - d. Prepare to manage monitoring data.
 - i. Confirm that data management tools are available to handle all RSMP data and that all data will be quality controlled, stored and accessible to the public in a timely fashion.
 - ii. Train field and lab personnel to QA/QC and report all data to the required data bases according to the QAPP.
2. Conduct one round of sediment chemistry sampling at up to 50 randomly selected sites at 0-2m depth during summer 2016 according to the approved QAPP. Interpret and report the results.
 - a. Archive samples for future analysis of benthos and additional chemical parameters if funds become available.
3. Conduct one round of mussel tissue sampling at up to 50 sites during winter 2015-2016 according to the approved QAPP. Interpret the results and make recommendations for future status and trends monitoring.
4. Conduct monthly bacteria sampling at up to 50 sites during the 2016 water year according to the approved QAPP. Interpret and report the results.

3. Regional Effectiveness Studies

1. Conduct studies on topics that have been recommended through the process and using criteria pursuant to SWG recommendations; identify and develop needed SOPs; and make peer-

1 reviewed results and findings available to the public. ~~See Attachment C for the SWG-~~
2 ~~recommended list of study topics and questions.~~

- 3 2. The number of studies to be conducted will be determined through the RFP process. Ecology
4 expects that at least four to six studies and perhaps as many as 15-20 studies will be conducted
5 depending on the complexity of the studies selected. ~~As part of the RFP process, the contractor~~
6 ~~shall provide input to Ecology on the ability to implement or conduct study in the permit~~
7 ~~timeframe and an estimated cost to implement.~~

8 3. These studies will be conducted from August 2014 through August 2018.

9
10 4. Some studies may not be completed by the expiration date of this agreement; appropriate
11 interim deliverables will be defined.

12
13 5. ~~The contractor shall provide bi-annual and final reports to Ecology on the implementation status~~
14 ~~and any results and conclusions of the effectiveness studies for Ecology to summarize and~~
15 ~~provide to the Permittees.~~

16
17
18 4. Source Identification and Diagnostic Monitoring Information Repository

19
20 ~~[Seattle Comment: Recommend replacing with alternative scope of work. Seattle's starting point for~~
21 ~~an alternative scope of work is presented in Seattle's comments in Attachment 1 of Seattle's comment~~
22 ~~letter]~~

23
24 1. ~~Develop an Illicit Discharge Detection and Elimination (IDDE) Manual for Western Washington,~~
25 ~~including:~~

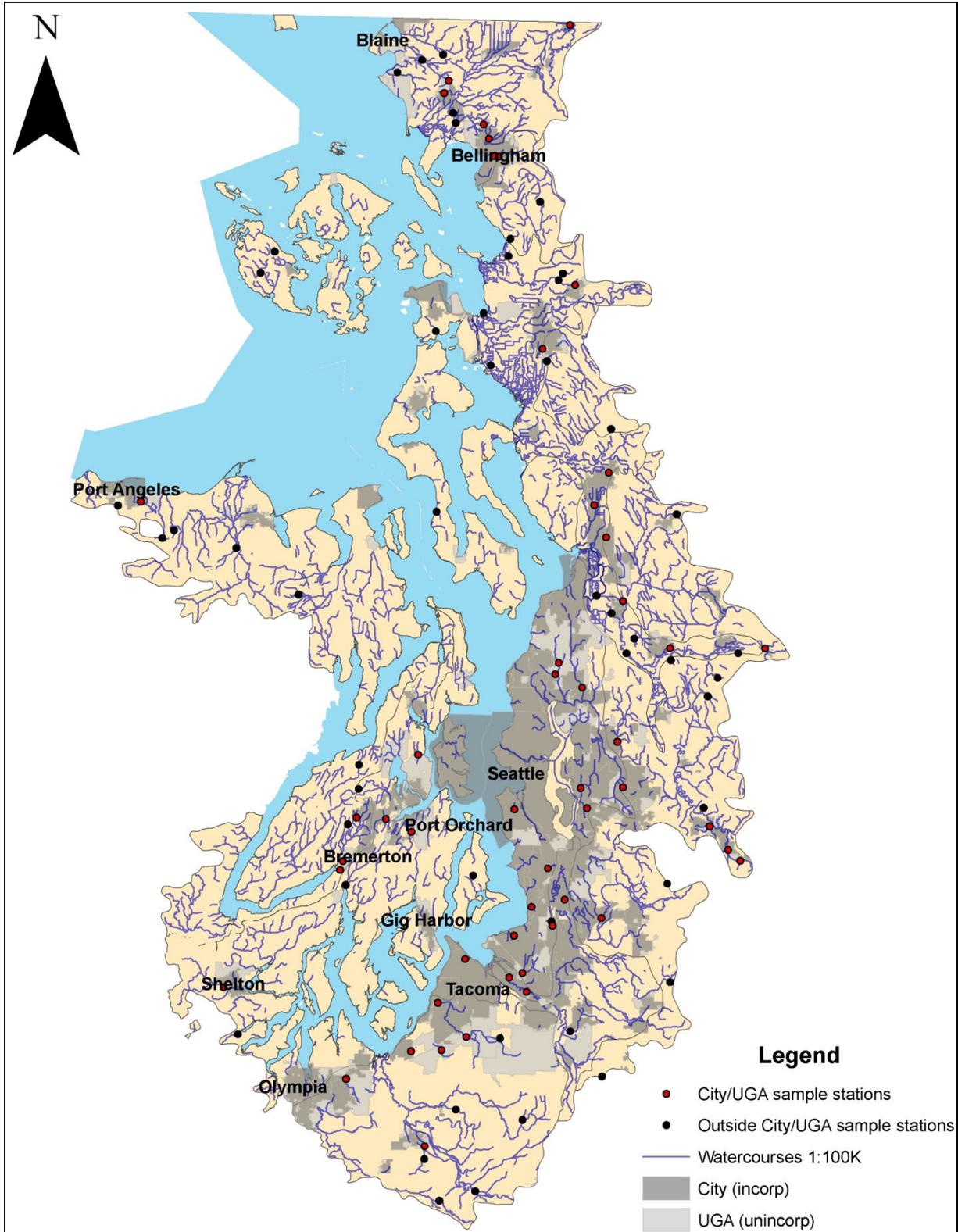
26 a. ~~A QAPP library with data quality objectives and report templates,~~

27 b. ~~An information repository to evaluate current source identification programs and enable~~
28 ~~permittees to share information, and~~

29 c. ~~Standard operating procedures (SOPs) and protocols for source identification and~~
30 ~~diagnostic monitoring.~~

31 2. ~~Design and develop a database and propose reporting requirements to support regional scale~~
32 ~~analyses to identify problems that will be better addressed by broad source control, education,~~
33 ~~or policy initiatives rather than by individual efforts at the local government level.~~

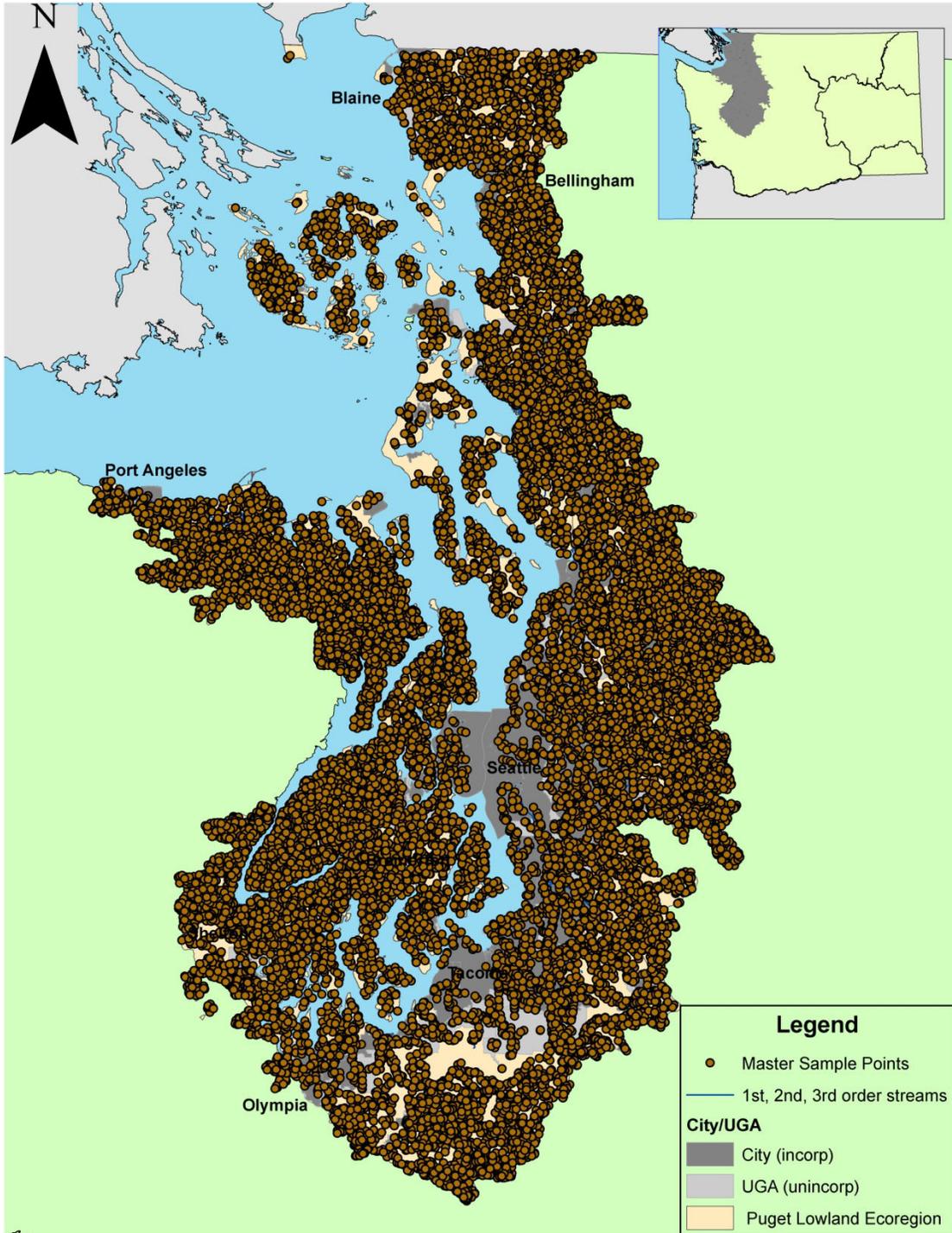
1 | 3.1. Attachment B – Stream sampling site locations



1
2

Figure B1. Initial 100 candidate wadeable stream site locations for the Puget Sound assessment region

1 with 50 sites in each of its component assessment regions: inside and outside Urban Growth Area (UGA)
2 boundaries.



3
4 Figure B2. All one million candidate stream site locations for the Puget Sound assessment region.

5
6

1 **Attachment C – Recommended list of stormwater effectiveness study topics and questions submitted to**
 2 **Ecology by the Stormwater Work Group in September 2011**

R A N K	Stormwater Management Program Element	Effectiveness Study Topic Null Hypothesis (H ₀)	Potential Questions for Request for Proposals
1	Source Control	Construction site inspections are not effective at controlling sediments and turbidity from permitted construction sites.	<ul style="list-style-type: none"> • Are the temporary erosion and sediment control Best Management Practices (BMPs) required during development or redevelopment adequate to control erosion and sediment from construction sites? • Are the temporary erosion and sediment control BMPs used at construction sites effective at reducing turbidity/TSS for compliance with water quality standards? • What frequency of construction erosion and sediment control inspections are most effective for achieving compliance with codes/ordinance requirements at new development and redevelopment project sites?
2	Source Control	Education and inspection of private stormwater facilities does not affect water quality.	<ul style="list-style-type: none"> • Do more frequent site visits and contact with private facility owners improve compliance with operation and maintenance (O&M) requirements? • What is the optimum frequency of inspections to maintain the functionality of private stormwater facilities?
3	Public Education	Permit required public education programs do not result in decreased levels of pollutants in stormwater.	<ul style="list-style-type: none"> • Are fecal coliform levels in stormwater reduced after an extensive pet waste education program? • Are nutrient levels in stormwater reduced following an extensive natural yard care education program? • Are pesticide concentrations and number of hits reduced in an urban stream following general awareness? • Does establishing a spill hotline result in reduced stormwater pollutants? • Does a fundraiser car washing education program result in reduced surfactants in stormwater?
4	Illicit Discharge Detection and Elimination (IDDE)	IDDE program components are not effective at reducing pollutants.	<ul style="list-style-type: none"> • Which combination of methods, smoke testing, dye testing, CCTV, flow monitoring and outfall screening (wet and dry season) work best for detection of illicit connections? • How effective is wet weather screening as a tool to detect illicit connections? • Which parameters should be measured during dry weather screening to improve the ability to detect illicit connections?

5	O&M Pollution Prevention	Frequency of inspecting and cleaning catch basins is not dependent on land use or road size.	<ul style="list-style-type: none"> • Do catch basins on arterial streets require more frequent cleaning vs. non-arterial streets? • Can land use or road size/type be used to set an optimal frequency for inspection and cleaning catch basins? • Does the land use surrounding a catch basins influence the rate of sediment accumulation in catch basins? • Can catch basin maintenance frequency be determined by land use surrounding the catch basin?
6	Low Impact Development (LID)	LID measures are not effective at reducing storm flows in retrofits and new development.	<ul style="list-style-type: none"> • Which LID measures are most effective at reducing flow from developed areas? • Will installing porous pavement in alleys and road rights-of-way with rain gardens substantially reduce runoff? • Does amending landscapes with compost significantly reduce flows during small and medium storms? • Is LID more effective than traditional BMPs for improving hydrology at the basin scale? • Will a developed basin with a high density of LID measures have measurable differences in hydrology and pollutant loads compared to a similar basin with a low density of LID measures? • How well can a calibrated and verified stormwater model (e.g., SUSTAIN and EPA SWMM5) function as a replacement for a control in a paired watershed study design?
7	LID	LID measures are not effective at reducing pollutant loads in retrofits and new development.	<ul style="list-style-type: none"> • Does the installation of bioretention, bioinfiltration, biofiltration, rain gardens, and other LID measures have a measurable effect on water quality? • Which LID measures are most effective at improving water quality from developed areas? • Can compost mixes and plant species be tailored to enhance removal of specific pollutants (i.e., phosphorus, metals, bacteria)? • Is LID more effective than traditional BMPs for improving water quality at the basin scale? • Will a developed basin with a high density of LID measures have measurable differences in pollutant loads compared to a similar basin with a low density of LID measures? • Does bioretention treat runoff sufficiently to allow for infiltration without violating groundwater quality standards? • What type and frequency of maintenance is needed to ensure the long term performance of bioretention facilities?

8	Source Control	Business inspection and outreach are not effective source control techniques.	<ul style="list-style-type: none"> • Are businesses that receive an in-person visit/inspection more likely to implement source control BMPs? • What frequency of business inspections is most effective for implementing and maintaining source control requirements/BMPs at businesses?
9	Public Education	Permit-required public education programs promoting behavior change do not result in increased awareness and behavior change.	<ul style="list-style-type: none"> • What is the increase or decrease over time of various target audiences willing to make a simple change in their daily lives to help Puget Sound? • What is the increase or decrease over time of various target audiences willing to invest over \$1,000 to make a change in their property to help Puget Sound? • What is the increase or decrease over time of car owners to fix leaks? • What is the increase or decrease in stormwater drain awareness of various business sectors involved in commercial property maintenance inspections? • Does a fundraiser car wash education program decrease the number of fundraiser car wash events?
10	Traditional BMPs	Retrofitting using water quality treatment devices does not reduce pollutant loads.	<ul style="list-style-type: none"> • Which combinations of retrofit BMPs in a basin are most effective at reducing pollutants to receiving waters? • To what extent does retrofitting using water quality treatment devices reduce urban stormwater pollution to receiving water bodies? • Once installed, do model predicted quantities of stormwater controls in a basin reduce stormwater impacts enough to support the receiving water's designated beneficial uses?
11	LID	LID measures are not feasible in areas with tight soils or shallow groundwater.	<ul style="list-style-type: none"> • What, if any, LID measures are feasible in areas with tight soils? • What, if any, LID measures feasible in areas with shallow groundwater?
12	Traditional BMPs	Reducing the size of a filter strip does not alter its effectiveness at reducing pollutant concentrations.	<ul style="list-style-type: none"> • Are existing sizing criteria for vegetative filter strips (based on bioswales) overly conservative? • Which combinations of length, width, slope, soil types and vegetation types result in greatest removal of sediment by vegetative filter strips?
13	LID	Permeable pavement will fail on high-speed roads.	<ul style="list-style-type: none"> • Is permeable pavement feasible over the long-term for applications on high-speed roads?
14	LID	Recycled concrete cannot be used to provide storage under permeable pavement.	<ul style="list-style-type: none"> • Can recycled concrete be used as storage under permeable pavement?

15	O&M Pollution Prevention	Catch basins do not contribute sufficient fecal coliform bacteria to exceed water quality standards.	<ul style="list-style-type: none"> • Are catch basins a significant source of fecal coliform or other pollutants? • What frequency of catch basin maintenance is needed to reduce the level of fecal coliform to meet Total Maximum Daily Load (TMDL) requirements?
16	Public Education	Public Education of lake property owners about residential pollutants will not reduce summer algae blooms.	<ul style="list-style-type: none"> • Are summer algae blooms due to excess runoff or recycling of nutrients? • Can education and prevention of phosphorus loads from runoff influence the frequency and duration of lake algae blooms?
17	Public Education	Storm drain stenciling does not raise awareness about where stormwater goes or that it is not treated.	<ul style="list-style-type: none"> • What is the level of awareness of adjacent land owners to storm drain stencils compared to landowners with no storm drain stencils?
18	Traditional BMPs	There are no differences in ecological or intrinsic human benefits derived from maintained versus unmaintained stormwater ponds.	<ul style="list-style-type: none"> • Are water quality benefits increased by letting ponds take a more natural, successional path rather than continual maintenance? • Do humans value the unmaintained pond for the "wildness" it can introduce to their neighborhood (trees, shrubs, wildlife, etc.)
19	Source Control	Nutrient and Integrated Pest Management (IPM) programs do not improve water quality in receiving water bodies.	<ul style="list-style-type: none"> • Does implementation of nutrient management result in the reduction of nutrients in stormwater? • Does implementation of IPM result in the reduction of pesticides in stormwater?
20	Traditional BMPs	Toxics are not transferred to the nearshore from uplands by stormwater infrastructure.	<ul style="list-style-type: none"> • Will installation of devices to restrict tidal influence on stormwater systems reduce the transfer of toxics to Puget Sound?
21	Traditional BMPs	Oil/water separators are not effective in driveway applications.	<ul style="list-style-type: none"> • What is the lowest threshold of paved surface that makes it cost/treatment effective to install an oil/water separator? • Are there other methods (i.e., LID) that would be as effective in improving water quality as oil/water separators?
22	IDDE	Receiving water body sampling does not confirm removal of an illicit connection or successful IDDE program.	<ul style="list-style-type: none"> • How well does receiving water body sampling confirm the elimination of illicit connections? • Are there measurable differences in the concentration of fecal coliform in a receiving water body when illicit connections are removed?

Phase I Municipal Stormwater General Permit –Draft 2013 5-year Permit Annual Report
City of Seattle Comments: Attachment 7
February 3, 2012

This attachment contains the City of Seattle’s comments on the Draft 2013 5-year NPDES Phase I Municipal Stormwater Permit Annual Report Form. Please contact Seattle if Ecology needs additional information or has questions on the comments.

Comment #1: Question 3

The Question as written implies that Ecology is requiring Permittees to include in the annual report the costs or estimated cost of developing and implementing the SWMP. In contrast, the permit, section S5.A.2 states: “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.” Seattle suggests that Ecology remove from Annual Report Question 3 the language “including costs or estimated costs of developing and implementing the SWMP.” If it is Ecology’s intent that Permittees provide cost information in each annual report the permit language in S5.A.2 should be changed to reflect this desire.

Comment #2: Question 5b

Please add “(S5.C.2.a)” to the end to clearly identify the permit section.

Comment #3: Question 11

This question requires reporting in the annual report on coordination mechanisms to clarify roles and responsibilities for control of pollutants between any other municipal stormwater Permittees physically interconnected municipal storm sewers (S5.C.3.b.i). The Permit section addressed by this question contains a statement that “failure to effectively coordinate is not a permit violation provided other entities, whose actions the Permittee has no or limited control over, refuse to cooperate.” Seattle suggests that Question 11 should have a similar disclaimer.

Seattle also suggests that the question be revised to match the permit: “...pollutants between physically interconnected municipal storm sewers of the Permittee and any other municipal stormwater Permittee’s ~~physically interconnected municipal storm sewers?~~”

Comment #4: Question 10

Seattle suggests that Ecology add the following text to the question “within Permittees’ jurisdiction” after “identifying all departments.”

Comment #5: Question 12

Special Condition S5.C.3.b in the Permit section contains a statement that “failure to effectively coordinate is not a permit violation provided other entities, whose actions the Permittee has no or limited control over, refuse to cooperate.” Seattle suggests that Question 12 should have a similar disclaimer. Seattle also suggests that the question be revised to delete “as necessary,”

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consistent with Seattle’s comment on the permit text and to insert comma following “waterbodies” to match the permit.

Comment #6: Question 14

Question 14 asks if a Permittee has posted their updated SWMPR and latest annual report on their website no later than May 31. This question will be difficult to answer for the as the Annual Report form is due to Ecology each year no later than March 31, and May 31 will occur after submittal of the Annual Report. Seattle suggests that Ecology clarify this question to specify that the web posting was on May 31 for the SWMPR and Annual Report from the previous year.

Comment #7: Question 16

Seattle suggests that Ecology substitute “June 30, 2014” for “December 31, 2014,” to be consistent with Seattle comments.

Comment #8: Question 19

For consistency with the permit, insert “submitted to Permittee” after “Reviewed Site Stormwater Plans.”

Comment #9: Question 20

For consistency with the permit, insert “that meet the thresholds in S5.C.5.a and” after “permitted development sites.”

Comment #10: Question 21

For consistency with the permit, insert “that meet the thresholds in S5.C.5.a and” after “permitted development sites.”

Comment #11: Question 24

For consistency with the permit, insert “permanent” before “stormwater facilities.” Substitute “verify” for “ensure,” consistent with Seattle comments.

Comment #12: Question 27

For consistency with Ecology’s proposal to revise the permit, insert “as applicable” after “available.”

Comment #13: Question 29

Substitute “June 30, 2015” for “December 31, 2014,” consistent with Seattle comments.

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Comment #14: Question 30

Substitute “March 31, 2016” for “March 31, 2015,” consistent with Seattle comments.

Comment #15: Question 34

Annual Report Question 34 requires that Permittees attach an updated list of planned, individual projects scheduled during this permit term with the information specified in Appendix 11. It is unclear if this attachment is different from the information that Permittees are required to provide in the Appendix 11- Structural Stormwater Controls Project List. Seattle requests that Ecology clarify the intent of the word “Attach”, that is, is the deliverable a standalone document attached to the Annual Report or should it be included as part of the SWMPR. Alternatively, Seattle requests that Ecology prepare an input sheet on Ecology’s WAWebDMR web site that will facilitate entering the data specified in the Appendix 11- Structural Stormwater Controls Project List and specify that this is the Annual Report submittal requirement. Also, please correct the section reference to read “S5.C.6.c.”

Comment #16: Question 37

Annual Report Question 37 requires that Permittees attach a summary of actions taken to implement the source control program per S5.C.7.b.iii and S5.C.7.b.iv. Does Ecology intend that the Attachment contain a list of the businesses provided BMPs (S5.C.7.b.iii(1)), a list of businesses inspected to meet the 20% requirement (S5.C.7.b.iii(2)), a list of complaint-generated inspections (S5.C.7.b.iii(3)) and a list of all enforcement actions (S5.C.7.b.iv)? If this is the intent, Seattle suggests that this information is not necessary and is better served by maintaining the current Annual Report Questions 41-47, which require Permittees to quantify the actions taken in S5.C.7 rather than list the actions by business or site.

Comment #17: Question 39

Seattle requests that Ecology substitute “designed to accomplish that” for “that ensures,” consistent with Seattle comments.

Comment #18: Question 41

Annual Report Question 41 requests that Permittees cite their IDDE methodology that were used in the Comment Field. Ecology has added a new requirement in S5.A.1 called the SWMP Report (SWMPR) which according to the Fact Sheet is the written documentation of the activities and actions that the permittee plans for SWMP implementation. The current Annual Report form has limited capacity (50 word limit) in the comments field. Because permittees will be documenting their IDDE activities in the SWMPR, Seattle feels that it is reasonable to require Permittees to include their IDDE methodology in the SWMPR and reference to it in the Annual

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Report. Seattle suggests that Ecology clarify the question and change the language to “*list the page(s) of the IDDE methodology in the SWMPR in the comments field.*”

Comment #19: Question 42

Substitute “10%” for “20%,” consistent with Seattle comments.

Comment #20: Question 47

Substitute “the Permittee’s MS3s” for “the MS4,” consistent with Seattle’s comments.

Comment #21: Question 49

Annual Report Question 49 requires that Permittees attach a summary of actions taken to implement S5.C.8.c. (characterize, trace and eliminate illicit discharges found or reported to the Permittee). It is Seattle’s opinion that requiring permittees to attach this information to the Annual Report is not necessary as this information has little utility outside of the jurisdiction that it is generated in. Seattle suggests that this information is not necessary and is better served by maintaining the current Annual Report Questions 55-61 which require Permittees to quantify the actions taken in S5.C.8 rather than list the actions. Also, insert “into the Permittee’s MS3s” after “any illicit discharges,” consistent with Seattle comments.

Comment #22: Questions 59, 59b, 59c, 60, 63

For consistency with the permit, substitute “Permittee-” for “municipally.”

Comment #23: Question 69

Ecology has added a new requirement in S5.A.1 called the SWMP Report (SWMPR) which according to the Fact Sheet is the written documentation of the activities and actions that the permittee plans for SWMP implementation. Seattle requests that Ecology eliminate question 69 or change the question to read “*Documented in the SWMPR public education and outreach programs and stewardship activities conducted per S5.C.10.a, b and c?*”

Comment #24: Question 75

Annual Report Question 75 is unclear as written and could be interpreted to be asking if staff from Permittees participated on the SWG or SWG subcommittees. Seattle requests that the question be revised to read: “*Paid the annual payment amount to Ecology for implementation of the Regional stormwater monitoring program (RSMP) for status and trends monitoring (S8.C.1)? List the payment amount in the comments field.*”

Comment #25: Question 79

Annual Report Question 79 is unclear as written and could be interpreted to be asking if staff from Permittees participated on the SWG or SWG subcommittees. Seattle requests that the

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question be revised to read: *“Paid the annual payment amount to Ecology for implementation of the Regional stormwater monitoring program (RSMP) for effectiveness studies (S8.D.1)? List the payment amount in the comments field.”*

Comment #26: Question 87

Annual Report Question 87 is unclear as written. Seattle requests that the question be revised to read: *“Paid the annual payment amount to Ecology for implementation of the Regional stormwater monitoring program (RSMP) for Source ID and Diagnostic Monitoring Information Repository (S8.E.1)? List the payment amount in the comments field.”*

Comment #27: Question 89

For consistency with the permit and with Seattle’s comments, “substitute “Permittee’s MS3 of which the Permittee has knowledge” for “Permittees MS4.”

Comment #28: Question 92

For consistency with the permit, substitute “MS3” for “MS4.”