

Appendix C

**RESPONSE TO COMMENTS
ON THE
Washington State Department of Transportation
MUNICIPAL STORMWATER GENERAL PERMIT**

National pollutant discharge elimination system (NPDES) and state waste discharge general permit for discharges from Washington State Department of Transportation owned or operated separate stormwater sewers.

February 4, 2009

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

Contents

INTRODUCTION	66
SUMMARY OF CHANGES TO THE DRAFT PERMIT	66
ORGANIZATION OF THE RESPONSE TO COMMENTS	67
LIST OF COMMENTERS	67
PART I.....	68
THE POLLUTION CONTROL HEARINGS BOARD (PCHB) RULINGS.....	68
S4. COMPLIANCE WITH STANDARDS, AS MODIFIED, CONSISTENT WITH THE BOARD’S RULING:.....	68
PART II.....	73
GENERAL COMMENTS ON THE PERMIT.....	73
PART III	76
S1 PERMIT COVERAGE AREA AND PERMITTEES.....	76
S4. COMPLIANCE WITH STANDARDS	77
S5. STORMWATER MANAGEMENT PROGRAM	78
S6. TOTAL MAXIMUM LOAD ALLOCATIONS	80
S7. MONITORING	81
S8. REPORTING REQUIREMENTS.....	89
DEFINITIONS.....	89
APPENDIX 5 – STREET WASTE DISPOSAL	91
APPENDIX 6 – CONSTRUCTION SITE SEDIMENT DAMAGE POTENTIAL.....	91
APPENDIX 7 – LABORATORY METHODS	91
APPENDIX 8 – TOXICITY GUIDANCE	92
APPENDIX 9 – STORMWATER MANAGEMENT PROGRAM PLAN.....	92

INTRODUCTION

On May 21, 2008 Ecology filed a notice with the State Register to reissue the Washington State Department of Transportation (WSDOT's) NPDES and State Waste Discharge General Permit for their Municipal Separate Storm Sewers (MS4s). Ecology invited public comment on the draft permit and fact sheet, WSDOT's revised *Highway Runoff Manual* (HRM), (included in the permit as Appendix 1), WSDOT's Stormwater Management Program Plan (included in the permit as Appendix 9) and the Implementing Agreement between Ecology and WSDOT regarding the statewide application of the HRM. The public comment period ended June 24, 2008.

WSDOT updated its 1997 Stormwater Management Program (SWMP) to meet the new minimum performance measures during permit development. Ecology tentatively approved and incorporated WSDOT's 2008 SWMP plan into its new stormwater permit as an appendix for public review. For more information on the SWMP go to: www.ecy.wa.gov/pubs/0810045.pdf. WSDOT also updated the HRM for consistency with Ecology's stormwater runoff manual with respect to (WSDOT) operations. Ecology approved the HRM August 20, 2008, and WSDOT agreed to continue applying their HRM guidelines statewide, with the revised HRM coming into effect when the final permit is issued. Statewide application of the HRM is formalized through an implementing agreement between Ecology and WSDOT.

SUMMARY OF CHANGES TO THE DRAFT PERMIT

Ecology made numerous changes to improve clarity and readability of the permit.

Changes were also made in response to recent Pollution Control Hearings Board (PCHB) rulings on the Phase I and Phase II Municipal Stormwater General Permits, which were issued January 17, 2007. (PCHB Findings, Conclusions and Orders on the permits are available at: <http://www.ecy.wa.gov/programs/wq/stormwater/municipal/appeals.html>). WSDOT petitioned to intervene in the appeals because its storm drain system is regulated under the same Clean Water Act NPDES permit program as the other municipal permits and its permit contains many provisions substantially similar or even identical to those in the other municipal permits.

The state Pollution Control Hearings Board issued two significant and comprehensive rulings with bearing on this permit. The first ruling clarifies the legal standard for municipal stormwater permits and how that standard is implemented. Overall the Board affirmed the standard and the approach required by Ecology's permits. The Board directed Ecology to make changes to the compliance with standards language to provide more clarity and predictability. Changes have been made to section S4 of the permit to reflect the board's ruling.

The second ruling issued by the Board is a ruling on the consolidated appeals of the Phase I municipal stormwater permit. Again the Board's ruling largely affirmed Ecology's Phase I permit, with some changes. The Board's major change was to require greater use of low-impact

development (LID) techniques where feasible. Accordingly, Ecology made changes to section S5 and Appendix 7 of this permit, requiring the use of LID, where feasible.

Finally, changes were made in response to comments received by the fourteen entities that commented on the draft permit. In particular, changes were made to the monitoring program, to the TMDL requirements and to reporting requirements. Where particular comments led to changes in the permit, those modifications are noted in the response.

ORGANIZATION OF THE RESPONSE TO COMMENTS

Ecology organized this Response to Comments into three parts. Part I addresses changes made as a result of the PCHB rulings on the Phase I and II Municipal Stormwater general Permits, Part II contains general comments, and Part III lists comments pertinent to specific sections of the permit followed by Ecology's responses. The comments received are enumerated for ease of reference. Those who commented are listed below. Their comments can be read in full on our website at:

http://www.ecy.wa.gov/programs/wq/stormwater/municipal/wsdot/public_comments/Final2allCOMMENTS.pdf

LIST OF COMMENTERS

Thomas Holz – Civil Engineer (TH)
Bob Yoder – private citizen (BY)
Michael Fagin – West Coast Weather (WCW)
Lorna Mauren, P.E. -- City of Tacoma (Tacoma)
Bruce Wulkan—Puget Sound Partnership (PSP)
Mark Toy – WA State Department of Health (DOH)
Lionel Klickoff – WA State Department of Natural Resources (DNR)
Mary Ann Rempel-Hester, Ph.D. -- Nautilus Environmental (NE)
Char Naylor -- Puyallup Tribe of Indians (Puyallup Tribe)
Richard A. Smith -- Puget Soundkeeper Alliance (PSA)
Heather Trim – People for Puget Sound PPS)
Luanne Coachman – King County (KC)
Washington State Department of Transportation (WSDOT)
Karen Walter – Muckleshoot Indian Tribe (Muckleshoots)

PART I

THE POLLUTION CONTROL HEARINGS BOARD (PCHB) RULINGS

PCHB Nos. 07-021, 07-026, 07-027, 07-028, 07-029, 07-030, 07-037 and 07-022, 07-023

Findings of Fact, Conclusions of Law, signed August 7, 2008, concluded that S4.F as written is invalid and remanded the Phase I and Phase II permits to Ecology to make modifications. For reasons of consistency, Ecology modified S4 in the WSDOT permit as well.

S4. COMPLIANCE WITH STANDARDS, AS MODIFIED, CONSISTENT WITH THE BOARD'S RULING:

- A. In accordance with RCW 90.48.520, the discharge of toxicants to waters of the state of Washington which would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria is prohibited. The required response to such discharges is defined in Section S4.F., below.
- B. This permit does not authorize a discharge which would be a violation of Washington State surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), or human health-based criteria in the national Toxics Rule (Federal Register, Vol. 57, NO. 246, Dec. 22, 1992, pages 60848-60923). The required response to such discharges is defined in Section S4.F below.
- C. WSDOT shall reduce the discharge of pollutants to the maximum extent practicable (MEP).
- D. WSDOT shall use all known, available, and reasonable methods of prevention, control and treatment (AKART) to prevent and control pollution of waters of the State of Washington.
- E. WSDOT shall comply with all of the applicable requirements of this permit as defined in Section S3, Responsibilities of Permittee in order to meet the goals of the Clean Water Act, and comply with S4.A through S4.D.
 - 1. WSDOT remains in compliance with S4 despite any discharges prohibited by S4A or S4.B when WSDOT undertakes the following response toward long-term water quality improvements. WSDOT shall notify Ecology in writing within 30 days of becoming aware, based on credible site-specific

information that a discharge from the municipal separate storm sewer owned or operated by WSDOT is causing or contributing to a known or likely violation of Water Quality Standards in the receiving water. Written notification provided under this subsection shall, at a minimum, identify the source of the site-specific information, describe the nature and extent of the known or likely violation in the receiving water and explain the reasons why the MS4 discharge is believed to be causing or contributing to the problem. For ongoing or continuing violations, a single written notification to Ecology will fulfill this requirement.

2. In the event that Ecology determines, based on a notification provided under S4.F.1 or through any other means, that a discharge from a municipal separate storm sewer owned or operated by WSDOT Ecology will notify WSDOT in writing that an adaptive management response outlined in S4.F.3 below is required, unless Ecology also determines that (a) the violation of Water Quality Standards is already being addressed by a Total Maximum Daily Load or other enforceable water quality cleanup plan; or (b) Ecology concludes the violation will be eliminated through implementation of other permit requirements.
3. Adaptive Management Response.
 - a. WSDOT shall review its Stormwater Management Program and submit a report to Ecology within 60 days of receiving the notification under S4.F.2, or by an alternative date established by Ecology. The report shall include:
 - i. A description of the operational and/or structural BMPs that are currently being implemented to prevent or reduce any pollutants that are causing or contributing to the violation of Water Quality Standards and a qualitative assessment of the effectiveness of each BMP.
 - ii. A description of potential additional operational and/or structural BMPs that will or may be implemented in order to apply AKART on

- a site-specific bases to prevent or reduce any pollutants that are causing or contributing to the violation of Water Quality Standards.
- iii. A description of the potential monitoring or other assessment and evaluation efforts that will or may be implemented to monitor, assess, or evaluate the effectiveness of the additional BMPs.
 - iv. A schedule for implementing the additional BMPs including, as appropriate: funding, training, purchasing, construction, monitoring, and other assessment and evaluation components of implementation.
- b. Ecology will, in writing, acknowledge receipt of the report within a reasonable time and notify WSDOT when it expects to complete its review of the report. Ecology will either approve the additional BMPs and implementation schedule or require WSDOT to modify the report as needed to meet AKART on a site-specific basis. Ecology will specify a reasonable time frame in which WSDOT shall submit a revised report to Ecology if modifications are required.
 - c. WSDOT shall implement the additional BMPs, pursuant to the schedule approved by Ecology, beginning immediately upon receipt of written notification of approval.
 - d. WSDOT shall include with each subsequent annual report a summary of the status of implementation, and the results of any monitoring, assessment or evaluation efforts conducted during the reporting period. If, based on the information provided under this subsection, Ecology determines that modification of the BMPs or implementation schedule is necessary to meet AKART on a site-specific basis, WSDOT shall make such modifications as Ecology directs. In the event there are on-going violations of water quality standards despite the implementation of the BMP approach of this section, WSDOT may be subject to compliance schedules to eliminate the violation under WAC 173-201A-510(4) and WAC 173-226-180 or other enforcement orders as Ecology deems appropriate during the term of this permit.

- e. Provided WSDOT is implementing the approved adaptive management response under this section, WSDOT remains in compliance with Condition S4, despite any on-going violations of Water Quality Standards identified under S4.F.A or B above.
 - f. Whether the process in Section S4.F provides WSDOT a shield from liability under 42 U.S.C. et seq. or RCW 70.105.D is a matter of state and federal law which Ecology does not intend to alter. The adaptive management process provided under section S4.F is not intended to create a shield for WSDOT from any liability it may face under 42 U.S.C. 9601 et seq. or RCW 70.105D.
- G. Ecology may modify or revoke and reissue this General Permit in accordance with G14 *General Permit Modification and Revocation* if Ecology becomes aware of additional control measures, management practices or other actions beyond that required in this permit, that are necessary to:
1. Reduce the discharge of pollutants to the MEP;
 2. Comply with the state AKART requirements; or
 3. Control the discharge of toxicants to waters of the State of Washington.

PCHB Nos. 07-021, 07-026, 07-027, 07-028, 07-029, 07-030 and 07-037 Final Order, dated August 7, 2008, concluded that the Phase I Permit fails to require that the municipalities control stormwater discharges to the maximum extent possible (MEP) and does not require application of all known, available, and reasonable methods to prevent and control pollution (AKART), because it fails to require more extensive use of low impact development (LID) techniques. To remedy the problem, the Board directed Ecology to make specific changes to some provisions in the permit to require use of LID where feasible, as it is necessary to meet the MEP and AKART standards of federal and state law respectively.

Special conditions S5 and S8 are therefore amended with the following additions:

S5.A.6. is added:

WSDOT's SWMP shall require non-structural preventative actions and source reduction approaches including Low Impact Development Techniques (LID), to minimize the creation of impervious surfaces, and measures to minimize the disturbance of soils and vegetation where feasible.

S8. E.3. is added:

WSDOT shall identify barriers to implementation of LID and, in each annual report, identify actions taken to remove barriers identified and report progress on LID feasibility required in S5.A.6.

PART II

GENERAL COMMENTS ON THE PERMIT

- **A number of comments regarded the lack of Low Impact Development requirements. A few commenters pointed out that LID should be considered AKART.**

Response to the range of comments:

Ecology was waiting for the PCHB ruling before incorporating certain changes to this draft permit. One of the rulings was on LID. (See responses to PCHB rulings of August 7, 2008 above).

AKART is not limited to low impact development practices, but it certainly includes them. The permit, through the required development and implementation of the Stormwater Management Program, is designed to reduce pollutants to the maximum extent practicable and to make progress toward compliance with water quality standards by meeting state AKART requirements. In addition, Special conditions S5 and S8 are amended to require the use of LID where feasible (See responses to PCHB rulings above).

We added the language from the recent PCHB order for the Phase I (see Part I) permit that requires WSDOT to complete a feasibility study for LID and to identify barriers to implementing LID. We placed required language in both S5 of the permit and in WSDOT's Stormwater Management Program, Appendix 7 of the permit. The technical guidance for LID is contained in section 2-5.2 of the Highway Runoff Manual.

- **There were several comments on antidegradation and discharges to 303(d) waters. It was suggested that the permit allows the discharge of polluted runoff into 303(d) listed waters. In addition, comments were made that anti-degradation requirements were not considered in the permit.**

Response to the range of comments:

This permit covers stormwater runoff from WSDOT's various land uses, but doesn't allow "additional pollutants" into listed waters. Where there are TMDLs, WSDOT is required to implement source controls; if a listed water doesn't have a TMDL yet, then WSDOT is bound by 90.48 RCW.

Federal regulations (40 CFR 131.12) and the Water Quality Standards for Surface Waters of the State of Washington (WAC 173-201A-300, 310, 320, 330) establish a water quality antidegradation program. The federally mandated program establishes three tiers of protection for water quality. These three tiers function to protect existing and designated in-stream uses, to limit the conditions under which water of a quality higher than the state standards can be degraded, and to provide a means to set the very best waters of the state aside from future sources of degradation entirely.

WAC 173-201A-320 contains the Tier II antidegradation provisions for the state's surface water quality standards. Consistent with the federal water quality antidegradation regulations,

Washington's Tier II program functions as a pollution prevention program to provide an extra measure of protection for water quality.

A Tier II analysis consists of an evaluation of whether or not the degradation of water quality that would be associated with a proposed action would be both necessary and in the overriding public interest. All three of the following conditions must be met before an activity would be required to go through a Tier II analysis:

- 1) it must be a new or expanded action,*
- 2) it must be an action that is regulated by Ecology, and*
- 3) the action must have the potential to cause measurable degradation to existing water quality at the edge of a chronic mixing zone.*

Only new or expanded actions are potentially eligible for a Tier II analysis. "New" means facilities that are just being built or actions first initiated. "Expanded" means:

- 1) A physical expansion of the facility (production or wastewater system expansions with a potential to allow an increase the volume of wastewater or the amount of pollution) or activity;*
- 2) An increase (either monthly average or annual average) to an existing permitted concentration or permitted effluent mass limit (loading) to a waterbody greater than 10%; or*
- 3) The act of re-rating the capacity of an existing plant greater than 10%.*

Times when production and wastewater systems are being redesigned or expanded are often key points of opportunity for applying new less polluting technology and for re-evaluating long-term plans for wastewater controls.

General permit and water pollution control programs are developed for a category of dischargers that have similar processes and pollutants. New or reissued general permits or other water pollution control programs authorized, implemented, or administered by the department will undergo an analysis under Tier II at the time the department develops and approves the general permit or program.

The department recognizes that stormwater management programs and their associated control technologies are in a continual state of improvement and development. As a result, information regarding the existence, effectiveness, or costs of control practices for reducing pollution and meeting the water quality standards may be incomplete. In these instances, the antidegradation requirements of this section can be considered met for general permits and programs that have a formal process to select, develop, adopt, and refine control practices for protecting water quality and meeting the intent of this section. This adaptive process must:

- (i) Ensure that information is developed and used expeditiously to revise permit or program requirements;*
- (ii) Review and refine management and control programs in cycles not to exceed five years or the period of permit reissuance; and*
- (iii) Include a plan that describes how information will be obtained and used to ensure full compliance with this chapter. The plan must be developed and documented in advance of permit or program approval under this section.*

Ecology believes it has met the intent of the antidegradation section for the WSDOT Stormwater general permit in accordance with WAC 173-201A-320(6). The water quality standards at WAC 173-201A-320(6) describe how Ecology should conduct an antidegradation Tier II analysis when it reissues NPDES general permits. This section of the rule requires Ecology to:

- *Use the information we collect as a result of the permit to revise permit or program requirements.*
- *Review and refine management and control programs in cycles not to exceed five years or the period of permit reissuance.*
- *Include a plan that describes how Ecology will obtain and use information to ensure full compliance with water quality standards. Ecology must develop and document the plan in advance of permit or program approval.*

Ecology has made improvements with each WSDOT stormwater permit reissuance to ensure compliance with AKART and water quality standards. Ecology will assess effectiveness by evaluating program effectiveness described in annual reports, monitoring data and other information obtained as a result of the 2008 permit. Ecology expects to gather data, through its monitoring program, to help correlate effluent quality to site BMP implementation. Ecology will track this information and attempt to correlate it with effluent quality at the next permit issuance. As WSDOT continues to improve their selection and implementation of BMPs stormwater quality will also improve. Ecology believes the adaptive management response outlined in S4.F.3 demonstrates how it met the antidegradation requirements with the issuance of the WSDOT.

The antidegradation regulations for general permits state that individual actions covered under a general permit do not need to go through independent Tier II reviews.

PART III

S1 PERMIT COVERAGE AREA AND PERMITTEES

- **There were a number of comments questioning Ecology’s decision to issue this permit only in Phase I, Phase II, and TMDL areas of the state instead of statewide coverage.**

Response to the range of comments:

Ecology made the decision to permit WSDOT only in existing Phase I, Phase II, and TMDL areas because of the opportunities to both coordinate with other permitted communities and to implement existing water quality plans.

Ecology recognized that implementing this stormwater discharge permit will not be an easy task even with coverage as is, and if we were to require statewide coverage then the task will be even more formidable. Thus we developed the proposal to implement the Highway Runoff Manual statewide in lieu of a statewide permit. The benefit is that the state will get statewide stormwater controls through the HRM. That proposal came with a requirement for WSDOT to amend their HRM to equivalency with relevant sections of Ecology’s stormwater manuals. WSDOT agreed and assured Ecology that they will not have two sets of design standards (an equivalent HRM and one that is not equivalent). We formalized the proposal by developing an implementing agreement that is signed by the Director of Ecology and the Secretary of Transportation.

- **There was also concern about coverage for WSDOT’s maintenance facilities and the potential overlap with the Industrial Stormwater General Permit.**

Response to the range of comments:

Municipally owned/operated road maintenance facilities and heavy equipment maintenance and storage areas will be covered under the municipal stormwater permits and NOT under the industrial stormwater general permit. Coverage of road maintenance facilities and heavy equipment maintenance and storage areas under the municipal stormwater permits is consistent with Ecology’s approach under the previous phase I permit, earlier versions of the ISWGP, and the current draft ISWGP.

After some additional review, it was realized the ISTEAs exemption is not relevant for municipally owned/operated road maintenance facilities and heavy equipment maintenance and storage areas. These areas are not one of the EPA listed SIC codes for facilities generating stormwater associated with industrial activities (see 40 CFR 122.26(b)(14)). The closest SIC codes under which road maintenance facilities/heavy equipment maintenance and storage facilities would fit is “Heavy Construction other than building construction” – SIC 1611, 1622, 1623 and 1629. These SIC codes are not among the listed SIC codes in 40 CFR 122.26 (b)(14) which require permit coverage under the industrial stormwater general permit.

The 2002 ISWGP Appendix 1 lists SIC codes which were required to have permit coverage. Road maintenance facilities/heavy equipment maintenance and storage areas were not included under either the SIC codes or explicitly. The current ISWGP and the current draft proposed ISWGP do include vehicle maintenance areas associated with the following transportation related SIC codes: 40 (railroads), 41 (Local and suburban transit and interurban highway transportation), 42 (Motor Freight transportation and warehousing), 43 (United States Postal Service), 44 (Water transportation), 45 (air transportation), 5171 (Petroleum bulk stations and terminals). This is consistent with EPA rules (see 40 CFR 122.26(b)(14)(viii)). None of these fit road maintenance facilities or heavy equipment maintenance and storage areas.

Changes to S1 included removing the word “segment” from S1B.2 because Ecology is no longer managing water segments, rather manage waterbodies.

S2. AUTHORIZED DISCHARGES

- **There were comments questioning the “allowance” of stormwater discharges to ground water and the “authorizing” of illicit and non-stormwater discharges managed by WSDOT and their compliance with water quality standards.**

Response to the range of comments:

Condition S2.A.2 does not attempt to remove groundwater discharges from potential jurisdiction of the federal courts. Discharges to ground water are covered because the permit must satisfy both federal and state law. Under state law, Chapter 90.48 RCW, Ecology is required to address discharges to “waters of the state” which include ground water.

In Section 3.2 of the SWMP, Notification Procedures, the section states that “In all instances, illicit discharges shall be immediately reported to Ecology...”

Ecology has concluded the following types of non-stormwater discharges are not likely significant sources of pollutants and therefore need not be addressed by WSDOT’s SWMP: diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, foundation drains, footing drains, air conditioning condensation, springs, water from crawl space pumps, footing drains, and flows from riparian habitats and wetlands. Ecology decided to also include in this list of non-stormwater discharges (that do not need to be addressed by the SWMP) irrigation water from agricultural sources that is commingled with urban stormwater, because in some areas of Washington, agricultural irrigation infrastructure has become part of the MS4 and it would be unreasonably burdensome (and not beneficial to water quality) to separate out these discharges.

No changes were made to S2.

S4. COMPLIANCE WITH STANDARDS

- **Ecology received numerous comments on S4, Compliance with Standards.**

Response to the range of comments:

In addition to the responses below, see changes due to PCHB rulings in Part I.

The intent of implementing permit requirements S4.C and D is primarily for WSDOT to demonstrate compliance with S5 and their SWMP. The SWMP was designed to reduce pollutants to the maximum extent practicable and to make progress toward compliance with WQS. The permit also requires the SWMP to be modified to address WQS violations to which stormwater is found to contribute. The municipal stormwater permitting program is based on adaptive management. WSDOT must judge the effectiveness and appropriateness of the BMPs they have selected and implemented and make changes where appropriate. (See response to PCHB rulings in Part I.). See also responses in Part I on S4 modifications and to Comment 5 on antidegradation.

- Ecology made changes to S4 to comply with the PCHB rulings from the Phase I hearings.
 - Ecology made minor clarification to S4.B and deleted the compliance statement in S4.E.
 - Ecology added language clarifying WSDOT liability in S4.F.3.f
- S5. STORMWATER MANAGEMENT PROGRAM
- **Since WSDOT developed their Stormwater Management Program prior to the permit being issued, many commenters thought it was not stringent enough nor did it contain sufficient mandatory language. Since there wasn't the strong mandatory language that commenter's would have liked to see, there was concern that implementation timeframes would be meaningless, especially for items such as mapping and IDDE identification.**
 - **There was concern that the SWMP would not suffice as AKART.**
 - **Additional comments on the SWMP revolved around the role of WSDOT's Highway Runoff Manual and the concern that it wouldn't be effective enough in meeting stormwater runoff standards.**
 - **Also, some commenter's questioned why the permit requires WSDOT to request adequate resources to implement the permit and SWMP. There was concern that this was not an appropriate permit requirement.**

Response to the range of comments:

HRM -- The reason we are giving WSDOT one year after the effective date of the permit to comply with the 2008 HRM has to do with training and design standards. WSDOT will be spending the first six months of that year training consultants and staff on the new design standards. Starting in the seventh month any new projects going out to AD will require designs according to the 2008 HRM. Project being installed one year after the effective date must be built according to the new design standards. Ecology recognizes the time it takes to develop the site designs, project management, and funding scenarios. We cannot expect WSDOT to implement the new design standards immediately. Projects being built now have been on the books for, in some cases, years.

The 2008 HRM is effectively being implemented immediately when you consider training, design, and management of new projects going to AD. We clarified our intent in this section. What we meant is that during the first year of the permit, while WSDOT is ramping up their training and design templates for highway projects, WSDOT is still required to use Ecology manuals on 401 certification projects. There is no grace period on 401 certifications, however, once staff is trained on the HRM and designs that go to AD meet HRM requirements, then WSDOT has the opportunity to design according to the HRM.

Section 1.4.2 of the SWMP describes WSDOT's implementation of section 7 requirements. In that section WSDOT describes the guidance in their Highway Runoff Manual that supports ESA requirements. Thus, consider the HRM as AKART and MEP since NOAA has approved WSDOT's Maintenance application for LIMIT 10 under the 4(d) rule.

Funding -- This permit condition is based on the EPA requirements at 40 CFR 122.26 calling for a fiscal analysis of the necessary capital and operations and maintenance expenditures to implement the SWMP, and at 40 CFR 122.42(c) for reporting of annual expenditures and proposed budgets. The regulations require the implementation of best management practices (BMPs) to meet the MEP standard. BMPs include both source control and treatment measures. Documenting program costs is necessary to evaluate practicability and demonstrate meaningful progress toward MEP compliance. It also helps Ecology estimate the cost of permit compliance statewide. Since WSDOT's budget is dependent on legislative funding Ecology requires that WSDOT apply to the Legislature for adequate resources to maintain compliance with the permit.

Ecology placed in S5.A.6 language that required WSDOT request from the legislature adequate funding to implement this permit. WSDOT must take all appropriate steps and processes to request both biennial and supplemental funding if required. Ecology also requires annual report on funding, cost of implementation, and cost of program development.

Implementation timeframes -- We have listed at the end of each section of the SWMP performance indicators that will inform us whether the SWMP is being implemented as required. If it is, then we will have an opportunity to determine whether the SWMP is achieving the goal of meeting water quality standards, or not. If not, then we will adapt the SWMP for the next permit cycle.

Mandatory language – We increased the use of mandatory language in the SWMP. Unlike Phase I and Phase II permits, Ecology has approved WSDOT's SWMP prior to the permit being issued. In order to do that we reviewed draft versions using federal and state guidance. It is now part of the permit and it's implementation is a permit requirement.

- Ecology made changes to S5.A.2.c by deleting flow management language flow is addressed in the approved Highway Runoff Manual.

- Ecology clarified the meaning of AD (advertisement) in S5.A.4 and also clarified that 401 certification projects must comply with HRM or more stringent requirements that Ecology deems necessary.
- Ecology added language to S5.A.5 allowing the use of Ecology technical standards.
- Ecology added low impact development requirements as directed by PCHB in S5.A.6.

S6. TOTAL MAXIMUM LOAD ALLOCATIONS

- **Ecology received several comments on how this permit will require compliance with applicable TMDLs. It was pointed out that most TMDLs do not identify WSDOT by name, thus there was uncertainty whether WSDOT would be required to implement anything.**
- **In addition, since Ecology does not place the actual loading allocation in the permit, what guarantees are there that WSDOT would comply with applicable TMDLs?**

Response to the range of comments:

Ecology has spent considerable time discussing TMDLs and the requirements to implement under municipal stormwater permits. All TMDLs approved prior to a permit being issued are applicable TMDLs. To require permit coverage for TMDLs that are in development or approved after the permit is issued would require a permit modification.

In order to solve this problem, Ecology and WSDOT have agreed to cooperate with TMDL development in a manner that requires WSDOT's active participation. Section 2.2.2 of WSDOT's SWMP, page 2-2, outlines the process. In addition, part of the annual report requires WSDOT to detail TMDL implementation activities, and activities that they will engage in for the subsequent year. If this process works out as envisioned, permit modifications will not be necessary.

Instead of listing numeric allocations in the permit, with guidance from EPA, Ecology will be using non-numeric water quality based effluent limits. These will be expressed as a best management practice. Compliance with the permit infers that the permittee is in compliance with the permit by being in compliance with the BMP requirement identified in Appendix 3 of this permit. As in the case with WSDOT, they are required to implement BMPs assigned to them in a detailed implementation plan.

In most cases Ecology TMDL leads will require WSDOT to focus implementation of their SWMP in specific locations. WSDOT's SWMP contains requirements to implement their HRM as necessary. However, our TMDL program reserves the right to require implementation of BMPs where needed to meet waste load and load allocations.

We revised the language to require compliance (S6.A) and changed language to describe the requirement to meet timelines in either the TMDL or DIP (S6.A.2).

- Ecology added language in S6.A2 requiring WSDOT to meet **applicable** TMDL and detailed implementation plan timelines.

S7. MONITORING

There were more comments on this section than any other. The range of comments and responses are organized congruent with the permit.

Monitoring Objectives

- **Why spend money on monitoring when funding BMPs is more important;**
- **WSDOT’s monitoring investments can be better spent elsewhere than attempting to further characterize “baseline” of highway edge-of pavement runoff conditions (an already well-documented highly variable phenomenon), or the significant challenges of assessing the long-term effectiveness of individual facility stormwater pollution prevention plans via water quality monitoring;**
- **Ecology needs to increase monitoring stations in this permit in order to better quantify pollutant loadings from WSDOT’s highways. Six monitoring locations are not enough**

Response to the range of comments:

Ecology believes that the required monitoring program will meet the monitoring objectives:

- *Produce scientifically credible data;*
- *Provide information that can be used by WSDOT for designing and implement effective strategies;*
- *Determine the long-term effectiveness of SWPPPs.*

This proposed monitoring program is more extensive than other Phase I permittees. Stormwater sampling is very cost prohibitive and monitoring sites must be prioritized. The idea of sampling various land uses is to use the data to make assumptions for other similar land uses that are not monitored. Characterization is also needed to evaluate the effectiveness of source control actions and other efforts in WSDOT’s Stormwater Management Program. We will use the monitoring information gained from this permit cycle to determine our monitoring needs for the next permit cycle.

This proposed monitoring program is also more comprehensive than WSDOTs current monitoring of BMPs. The other monitoring objectives are needed to improve source control efforts by WSDOT’s Stormwater management Programs.

Similar to the Phase I municipal stormwater permits, Ecology decided not to require receiving water monitoring during this permit term. Monitoring of receiving water impacts requires a broader effort than can be employed through the WSDOT permit. See the Phase I municipal stormwater permit fact sheet and response to comments for more details.

However, for this permit term, Ecology is requiring WSDOT to contribute to accomplishing a more modest goal – to evaluate the capabilities of a few of the handful of engineered stormwater BMP’s that are available to WSDOT engineers when designing new, expanded, or rehabilitated highways. This requirement is similar to the BMP monitoring requirements that the other six Phase I municipal stormwater permittees are undertaking.

In meeting this requirement, WSDOT can propose monitoring any of the approved treatment BMPs in the HRM, including those that involve dispersion and infiltration.

In regard to toxicity evaluations, WSDOT has far more discharges that have not passed through an approved treatment BMP, than discharges that have. Therefore, Ecology thinks it is appropriate to collect toxicity information on untreated discharges.

Monitoring Baseline Conditions

- **How do you analyze observations, draw conclusions, or modify management strategies for substances with no standards, treatment goals, or health criteria.**
- **There are insufficient numbers of stations proposed in the permit to get a representative picture of the problem;**
- **The monitoring should be for the full term of the permit, including any permit extensions. Three years is not adequate;**
- **The required sampling frequency and storm criteria will result in a monitoring effort that produces misleading information (e.g., not representative of the conditions needed to accurately quantify pollutant loads or pollutant concentration ranges).**
- **We heard both sides of the parameter argument: add more parameters—take parameters off the required list. Chlorides, herbicides, phthalates, temperature, fecal coliform, and TPH are the ones in question.**
- **Site selection that is based on AADT (average annual daily trips) will give misleading conclusions;**

Response to the range of comments:

Ecology's regulatory mandate requires a clear indication whether there are water quality improvements, not just on established facilities, but as a characterization of the whole highway system and the impact that system has on water. The baseline monitoring program provides a feedback loop into WSDOT's Stormwater Management Program. This permit requires a robust analysis of several parameters and asks for WSDOT to use their SWMPs to target pollutants in highway runoff. There are many studies that characterize road runoff, but not for Washington State and no analysis has been done to evaluate the effectiveness of WSDOT SWMP.

The CWA requires "no discharge of toxics in toxic amounts" – even if we don't have water quality or human health-based standards for the toxic. An example is anionic surfactants. We don't have an adopted water quality standard for anionic surfactants. However, we do know that they are very toxic to fish. So, we require the locals to have programs to reduce their introduction into surface waters. Washington's Water Pollution Control Act requires all known, available, and reasonable methods to reduce the discharge of pollutants. That statutory requirement isn't restricted only to those pollutants for which the state has adopted water quality standards. The state has authority to require dischargers to verify what pollutants are in their discharges; and to require reasonable methods to reduce the discharge of those pollutants.

Baseline Monitoring -- The purpose of this program is to collect samples for baseline information to analyze which contaminants are transported from various sites in stormwater. Additionally, the monitoring data should be able to demonstrate a reduction of pollutants over time as Stormwater Management Plans or Stormwater Pollution Prevention Plans are implemented and updated. Using the data will help WSDOT determine the source and remove potential sources of pollution or install appropriate BMPs to reduce pollutants.

When we talk about baseline conditions, it doesn't necessarily mean prior to any other monitoring. Rather it means a starting point—which is a standard definition for this term. The purpose of the use of the term is to have a point of reference for water quality monitoring of WSDOT's facilities under this permit. We recognize that WSDOT has done prior monitoring, however, the permit requirements are above and beyond what has been accomplished prior. We changed the concept from characterization monitoring to baseline to alleviate any misunderstandings.

Establishing rainfall/runoff relationships -- The purpose of the language “to establish a rainfall/runoff relationship” is to provide a basis for calculating pollutant loads. Ecology expects WSDOT to develop a rainfall/runoff relationship using a regression equation to estimate runoff volume based on precipitation level for years 2 and 3 of monitoring. This rainfall/runoff relationship should be used for estimating loads for unsampled storm events after the one year continuous flow records are completed.

Edge of pavement sampling refers to measuring runoff directly from the impervious surface of a highway without prior treatment (possible treatment from grassy road shoulders and soils). This baseline data will be comparable to WSDOT highways that are not sampled. For example, some DOT bridges and roads discharge directly into receiving waters. Collection of baseline data will give us a good idea of the pollutants running off highways.

AADT -- Ecology does not presume that pollutant loads are correlated solely by AADT, nor that AADT defines the intensity of the adjacent land use. There is adequate basis in the literature to conclude that, in general, increasing levels of AADT produce increasing stormwater pollutant loads. Certainly, the literature also points to a number of other factors that influence pollutant loading. According to a WSDOT White Paper – Untreated Highway Runoff in Western Washington, May 16, 2007 by Herrera Environmental Consultants - a study by Kayhanian found that annual ADT, in conjunction with factors associated with pollutant buildup and wash off (antecedent dry period) does correlate with most highway runoff pollutants. In Washington, studies have shown that the number of vehicles during a storm may be a more important influence.

Responses to parameter specific comments:

Herbicides--Ecology replaced the term “pesticide” with herbicide throughout the permit. Ecology included the statement “only for those that WSDOT applies on-site, stores on-site or applies by vehicles parked on-site in S7.D2 and did not include this statement for highway monitoring. For highway right of ways, WSDOT is required to sample for the list of herbicides included in the permit regardless of use per location. This prioritized list is

intended to be used for herbicide requirements in S7.D.2 as well. Ecology has evaluated WSDOT's list of used herbicides and prioritized this list based on concerns for adverse impacts on water quality in particular effects on fish and insects. From WSDOT's current list, only those listed below are concerns for water quality/toxicity to fish and insects:

- *Triclopyr - Ester formula only*
- *2,4-D*
- *Clopyralid*
- *Diuron*
- *Dichlobenil*
- *Picloram*
- *Glyphosate (only if the non-aquatic formula is used)*

For sediments:

- *Dichlobenil*
- *Triclopyr*
- *Picloram*
- *Clopyralid*

Phthalates—*Phthalates come from many sources and are often ubiquitous in the environment. However, phthalates interfere with aquatic food chains. According to the Phthalate Source Study Phase I report-May 2003 (City of Tacoma), Ecology has reason to believe that phthalates are a significant source in stormwater runoff from parking lots of high use. Since the permit requires monitoring of high use rest areas, high use ferry terminals, and maintenance facilities which all contain parking lots and vehicle idling, phthalates may result as a prominent source contaminant in stormwater discharges from these areas.*

Chlorides—*Since de-icing salt application varies seasonally from location to location throughout the year, this requirement may be difficult to meet since it is solely based on the intercommunication between the maintenance staff and stormwater sampling staff. In addition, de-icing salts are not the only source for chlorides that could be present in stormwater discharges.*

Temperature-- *Temperature is a very inexpensive parameter that can be evaluated in the field as a grab sample, and does not have to be analyzed by an accredited laboratory. High temperature loading is a concern in discharges because they can increase the temperature in receiving water. Also, Ecology reports recommend inclusion of temperature monitoring in NPDES permits.*

Fecal coliform--*Ecology did not choose parameters for this section based on BMP specific removal data. Other BMPs (non-structural) can be used to address fecal coliform such as improving programs such as maintenance of shoulders, waste pick up programs and sweeping*

TPH (only if oil sheen is present)--*Ecology does not agree that for untreated stormwater discharges, a visible sheen will correlate with TPH results. In a well-mixed stormwater discharge, TPH may be present in the discharge with no apparent sheen observed.*

Ecology added language to include collection of visual sheen observations where TPH samples are collected to help further evaluate this scenario (S7.B.4). The intent of this

addition is to do a visual analysis during field visits, not an oil sheen laboratory analysis. This will hopefully provide a data link in the reporting between untreated stormwater discharges and presence and absence of sheen and TPH results.

Sediment Sampling

The purpose of the sediment sampling program is to evaluate multiple parameters where sediments are deposited from highway runoff. Ecology does not anticipate sediment quality to change much with a year's time; therefore, we do not see a reason to intensify the sampling at a particular location. This program is designed similar to that of the Phase I Municipal Stormwater Permit sediment sampling program; however, adjusted to highways.

The permit allows WSDOT to propose to Ecology alternative methods for collecting sediment samples as stated in S7.B.7. In-line sediment traps have been proven to work well for source control means.

The sediment monitoring portion of the permit is not intended to gather sediment loading information. To accurately reflect sediment loads, the permit would require a different method of sample collection and analysis. In order to get adequate sediment volume to analyze all required parameters in the permit, WSDOT must obtain approximately 60 ounces of sediment. The permit lists the minimum requirement WSDOT must collect and analyze without compromising WSDOT's ability to collect adequate volume

First Flush Toxicity

- **The overall intent of toxicity testing requirements might be better served by conducting a study of biological condition in the receiving environment. With only a single annual toxicity testing period, it is difficult to determine the value of these data.**

Response to the range of comments:

The intent of the "first flush" sample is to collect a seasonal first flush, which describes the event that occurs during the dry season when pollutants have had time to "build up" on land/roadway surfaces. This sample should not be weighted toward the beginning of the event and spread to represent at least 75% of the storm's hydrograph. Ecology recognizes that the earlier portion of the storm event may produce more pollutants, however, Ecology is interested in looking at the correlation between pollutants and the storm event to produce a loading. This portion of the permit is flexible to allow WSDOT to analyze the chemistry sample to count toward a qualifying storm event for baseline monitoring of highways (if a flow-weighted sample is collected instead of a time-weighted sample is collected) if inadequate volume is collected for toxicity.

We chose 24-hour acute toxicity testing for monitoring highway runoff because 24 hours is a common test duration and provides a close match to typical highway runoff duration. A standard test duration is preferred because it allows comparisons to existing chemical toxicity data to aid in toxicant identification. Chemical toxicity data derived from 48 hour

tests is close enough to a 24-hour duration to also be useful in spotting candidate toxicants and will add considerably to the data available for this task. The toxicity test results will only be used to shed light on potential toxicants, their sources, and the effect of BMPs. The test results are not intended to characterize discharges or predict receiving water effects. The test results are solely intended to contribute to improvements in knowledge and management for highway runoff.

*The WSDOT permit requires testing with *Hyaella azteca* to account for the toxicity of metals, pesticides, and other pollutants in highway runoff. A *Hyaella* test uses small volumes of sample, which is important because highways are relatively small drainage areas and often provide little sample. We chose a test duration of 24 hours because it matches well the usual runoff duration for highways, does not demand extra sample for test solution renewal, and allows a toxicity identification evaluation (TIE) to begin quickly using the original sample before it exceeds holding times. Otherwise, WSDOT will need to wait until the next rain event to sample for a TIE and hope that the same toxicity is present then as was found in the original sample from the seasonal first flush. The uncertainty over the identity and concentration of storm water toxicants between runoff events also means that repeat testing to confirm the presence of toxicity before initiating a TIE does not make sense.*

*Because of their ecological importance and because they are very sensitive to metals and pesticides, the American Society for Testing and Materials (ASTM) has published an acute toxicity test using *Hyaella* and the EPA manual for acute toxicity testing of effluents and receiving waters includes them in the list in Appendix B of supplemental test species. *Hyaella* work equally well for either water or sediment toxicity testing. California for several years has included acute toxicity testing with *Hyaella* in storm water permits such as the Riverside County and San Diego County permits.*

**Hyaella azteca* is a 1/8- to 1/4-inch long crustacean commonly found in lakes, ponds, and streams throughout North America. They are an important link in the aquatic food chain and a food source for small fish and other invertebrates. In addition to being an important food source for young salmon and trout, *Hyaella* feed on dead plant and animal matter which helps recycle nutrients and keep aquatic environments clean.*

**Hyaella azteca* is a common freshwater amphipod found all over North America. Amphipods are small crustacean animals similar to shrimps, crabs, and daphnids. Scientists have identified over 7,000 species of amphipods around the world. Because they are so common in most marine and freshwater habitats, amphipods form a key link in the food chain. Because amphipods are generally intolerant of pollution and are common only in healthy freshwater habitats, they are one of the standard organisms used as an environmental indicator in bioassessments like the benthic index of biological integrity (B-IBI). Daphnids are not enumerated in B-IBI assessments so toxicity tests with daphnids will not help as much in B-IBI interpretation. We also prefer an amphipod for storm water monitoring for this reason.*

*Acute toxicity testing with *Hyaella azteca*, the Environment Canada early lifestage toxicity tests for rainbow trout, and B-IBI assessments are a good combination of methods for protecting our waters, especially regarding salmonid reproduction. We do not have the resources to implement all of these methods in all storm water permits at the same time, but by including each of them in those storm water permits where they initially fit best, we will make reasonable progress to the goal of healthy state waters.*

Monitoring Maintenance Facilities, Rest Areas, Park and Ride Lots, and Ferry Terminals

- **Rest areas, maintenance facilities and ferry terminals make up a very small percentage of the land base of the state's transportation system, yet would require an inordinate amount of monitoring resources to comply with the draft permit as written.**

Response to the range of comments:

A small land base may contribute a large amount of potential pollutants. Significant pollution can come from the smallest of facilities. Developing monitoring data and associated SWPPPs will go a long way in adding to the state's knowledge base about these different land use types. This program is also designed as a feedback loop into WSDOT's SWPPPs; this program will help to improve those programs

BMP Effectiveness Monitoring

- **It is unclear how these weakly defined monitoring locations may be used to assess performance of BMPs affecting the discharge of pollutants or to meet water or sediment standards. In addition, the data obtained at the various sites are likely to be of little value for comparative purposes;**
- **Please clarify the rationale behind requiring WSDOT to analyze substances for which there are no state standards or associated BMP performance goals, or identified treatment strategies (e.g., PAHs, Phthalates, ortho phosphate, Phenolics, MBAS)**
- **The language in this section appears to be consolidated and abridged language from Ecology's TAPE guidance. However, as written, the concepts governing *summary statistics* and *statistical tests* are misapplied**
- **TAPE itself only requires influent monitoring for particle size distribution data (which we think is the actual intent here, rather than particle size). The November 2006 Revision of Ecology's TAPE guidance states, "In Western Washington, field data show most TSS particles are smaller than 125 microns". If particle size distribution is already known, then WSDOT is interested in learning what other research question particle size distribution data will be used to answer.**
- **It is necessary to have an assessment of the particle size distribution at the test site to know whether it has a significant distribution of smaller particles. Ecology uses Sil-Co-Sil 106 as a stormwater surrogate in laboratory tests. More than three-quarters of its particles are less than 45 microns. For an acceptable stormwater BMP monitoring site, Ecology wants almost all of the**

distribution to be below 125 microns, with a majority of particle sizes around 50 microns or smaller.

Response to the range of comments:

There are many problem pollutants in the environment for which Ecology does not have BMP performance goals or water quality standards. This does not mean that the pollutant is not a problem for the environment. Ecology is working on a continual effort looking at various pollutants and BMP removal capabilities but more information is needed. Stormwater permits can inform Ecology on various pollutants in the environment that need targeting and prioritizing.

As explained in the response to comments on the Phase I municipal stormwater permit, Ecology is requiring this monitoring because we have very little performance information on the BMP's that are included in the HRM and the Ecology manuals. The decisions concerning which treatment BMP's, and design criteria for those treatment BMP's, to include in the Ecology manual and the HRM were based (for most treatment BMP types) upon best professional judgment using scant quantitative performance information. After 13 years of allowing use of treatment devices, whose performance is unsubstantiated, for meeting the technology and water quality based treatment requirements of state and federal law, we are overdue for such a quantitative assessment. It is reasonable for Ecology, as the regulatory agency, to require that WSDOT – the discharger seeking permission to discharge pollutants to waters of the state and the U.S. – assume some responsibility (as shared with other municipal dischargers) for determining the pollutant removal effectiveness of the BMP's that it will use to meet the requirements of state and federal water quality laws

It is for this reason, and in conjunction with the BMP effectiveness monitoring being conducted by the Phase I permittees, that WSDOT's monitoring will help evaluate the removal of pollutants by many of the commonly-used treatment methods. The monitoring is intended to help advance the design, treatment functions and applications of appropriate treatment technologies. This is a key portion of identifying MEP for this and future.

The condition has been changed to indicate that WSDOT shall determine mean and median effluent concentrations, and shall determine percent removals with a goal of achieving 90-95% confidence and 70 – 75% power. The monitoring shall be initially designed to achieve those goals within the three-year period. But the initial QAPP shall be geared to collecting at least 12 influent and 12 effluent samples per year. These changes are intended to acknowledge that achieving the statistical goals may not be achievable within the permit term; and to establish a minimum level of effort in data collection.

However, as indicated in the TAPE and in response to the comment on S7.E.2, if the statistical goals are achieved with a lesser amount of data for a target pollutant (but a minimum of 12 paired samples), the monitoring requirement shall be considered fulfilled.

- Ecology made substantial changes to S7 to meet monitoring objectives.
- Ecology adjusted timelines for QAPP development and monitoring reports.

S8. REPORTING REQUIREMENTS

- **There are a number of reporting requirements in the permit. Commenter's pointed out the confusions that existed in the draft permits on dates, timeframes, and requirements.**

There are four separate reports required under this permit:

1. *Annual SWMP progress report*
 2. *Annual Stormwater Monitoring Report*
 3. *Final Stormwater Monitoring Report*
 4. *Annual Report for BMP Evaluation Monitoring*
- Ecology clarified both reporting requirements and timeframes in the permit.
 - Ecology made changes to the time required to keep permit records, and we made a more direct interface with the reporting requirements from Appendix 2. Table of Reportable Performance Measures from WSDOT's Stormwater Management Plan.

GENERAL CONDITIONS

- **We received a couple of comments asking to change the content of the General Conditions**

Response to the range of comments:

General Conditions are based directly on state and federal law and regulations and have been standardized for all NPDES permits issued by Ecology. The general conditions in Ecology's waste discharge permits are the minimum conditions that must be met but could be superseded by a more specific condition.

- Unless there were editorial corrections, Ecology did not make any changes to the general conditions.

DEFINITIONS

- **There were several requests to add definitions or clarify existing ones. We made all appropriate changes.**

APPENDIX 1 – HIGHWAY RUNOFF MANUAL

- **Ecology approved the HRM as a manual equivalent to Ecology's stormwater manuals in August 2008.**
- **Commenter's were concerned that the manual should more explicitly address source control, including management of driver behavior and traffic flow and loading.**
- **Continued concern about the flow control requirements;**
- **Continued concern about treatment options**

Response to the range of Comments:

Source control – The combination of the HRM and the SWMP emphasizes source control options. The SWMP includes a public education component that includes the commuter trip reduction program – a significant effort at source control. The proposed SWMP does not include an effort at educating drivers concerning techniques they can use while behind the wheel, and in car maintenance, that can reduce pollutant loading from their vehicle. Education topic areas include: moderate acceleration, deceleration, and braking; purchase of high mileage tires; keeping tires inflated properly; regular maintenance and leak checks; advantages of high mileage vehicles. Since all of the Phase I and II NPDES municipal stormwater permit holders must have public education components; and since a significant portion of the pollutant loading in each permitted municipality comes from vehicles; the municipal stormwater permittees public education programs may include efforts on the topics listed above and more.

WSDOTs SWMP and Highway Runoff Manual are permit requirements; they are not substitutes. The strategy in the Phase I and Phase II permits was the development of a stormwater management program for municipalities which became the major requirements of those permits. We adopted the same strategy for this one. Appendix 2 of this permit, Table of Reportable Performance Measures comes directly from WSDOTs SWMP

Advanced Treatment -- A presumption for advanced treatment in all discharge situations would not always be necessary. In regard to “new facilities” (see section 5 of the SWMP), the thresholds in the HRM will be used to identify treatment levels unless site specific information is available and indicates a different level or type of treatment is advisable. The default treatment assumptions in the HRM will likely be used in retrofit situations for which site-specific receiving water information, that can influence treatment options, is not available. The Stormwater Retrofit Prioritization Scheme (Table 6.1 in the SWMP) tends to favor surface waters with high environmental sensitivity. In those situations, enhanced treatment options are likely to be the default approach.

Ecology set its thresholds for application of Enhanced Treatment based on data collected from highways in California, Oregon, and Washington. A road’s potential to be a source of metals and TSS is correlated (although not linearly) with its average traffic load, and the characteristics of traffic flow (i.e. Is traffic primarily unimpeded, straight ahead flow, or is it stop and go with lots of turning).

Ecology set AADT thresholds for Enhanced Treatment where it had sufficient reason to believe that there was a significant difference in metals concentrations as compared to residential sites.

The data from lower level AADT roads does not indicate such a difference from residential areas that applying Enhanced Treatment would be warranted.

The thresholds for application of Enhanced Treatment in the WSDOT manual are the same as the thresholds in the Ecology stormwater manual for western Washington, and the

thresholds in the municipal stormwater permits. Ecology will not impose more stringent requirements on WSDOT than Ecology's current guidance and other permits specify.

Ecology set its thresholds for application of Enhanced Treatment based on data collected from highways in California, Oregon, and Washington. A road's potential to be a source of metals and TSS is correlated (although not linearly) with its average traffic load, and the characteristics of traffic flow (i.e. Is traffic primarily unimpeded, straight ahead flow, or is it stop and go with lots of turning).

Ecology set AADT thresholds for Enhanced Treatment where it had sufficient reason to believe that there was a significant difference in metals concentrations as compared to residential sites.

Flow Control Requirements -- The flow control requirement is related only to erosion and channel stability. The list of exempt waters is based upon analyses of land cover projections and a relationship of observed stream stability with loss of forest cover and impervious surface creation. The table lists those waters where application of the generic flow control requirement is considered unnecessary for channel stability.

Whether one of the listed waters has other features which would make flow control advisable for all discharges to that water was not considered. Local governments, federal and state agencies, and tribes could have other reasons for requiring flow control for direct discharges to these waters. Ecology's perspective is that the amount of land area along one of these major rivers that could potentially qualify for a flow control exemption will not make a discernible difference in large flood flows.

The lack of adequate margin habitat in some river systems is an issue that needs to be addressed separately from this direct discharge exemption.

AADT -- The data from lower level AADT roads does not indicate such a difference from residential areas that applying Enhanced Treatment would be warranted

APPENDIX 5 – STREET WASTE DISPOSAL

- Ecology deleted Appendix 5 because it was no longer needed.

APPENDIX 6 – CONSTRUCTION SITE SEDIMENT DAMAGE POTENTIAL

- Ecology deleted Appendix 6 because it was no longer needed.

APPENDIX 7 – LABORATORY METHODS

- **There was concern that the methods need to be current and appropriate because once placed in the permit would be the mandatory methods even though outdated or not appropriate.**

Response to the range of comments:

The methods listed in Appendix 7 are the most current as of this permit. We decided not to publish the list of Washington laboratories because it may be construed as an endorsement. A list of certified labs can be found at <http://www.ecy.wa.gov/programs/eap/labs/search.html>

- Appendix 7 is now Appendix 5. No changes were made.

APPENDIX 8 – TOXICITY GUIDANCE

- **There was concern that the methods need to be current and appropriate because once placed in the permit would be the mandatory methods even though outdated or not appropriate.**

Response to the range of comments:

The methods listed in Appendix 8 are the most current as of this permit. We decided not to publish the list of Washington laboratories because it may be construed as an endorsement. A list of certified labs can be found at

<http://www.ecy.wa.gov/programs/eap/labs/search.html>

- Appendix 8 is now Appendix 6. No changes were made.

APPENDIX 9 – STORMWATER MANAGEMENT PROGRAM PLAN

Range of comments include:

- **How does implementation of the SWMP constitute MEP and AKART since it allows WSDOT to do less than is practicable or even reasonable?**
- **Why does the SWMP lack mandatory language in so many instances?**
- **Another concern with the approval of the SWMP and its incorporation by reference into the permit is that the SWMP itself incorporates only by reference numerous WSDOT manuals that are not otherwise part of the permit.**
- **Strengthen Intergovernmental Coordination section by requiring that WSDOT coordinate with counties as well as cities in areas where highway and municipal separate storm system runoff commingle.**

Response to the range of comments:

We consider the permit and SWMP as MEP and AKART. Appendix 2, Table of Reportable Performance Measures list key activities and performance indicators. This table will be reported on every year by WSDOT. If indicators are met but water quality is not improved (via the monitoring results), then we will adjust the permit requirements during the next permit cycle. If the BMPs deficiencies that are corrected show improvement in water quality, then we will continue along this path. Time will tell whether BMP corrections have worked or not. The majority of the preliminary budget developed by WSDOT to implement this permit is for retrofit and maintenance of existing BMPs.

WSDOT identifies its use of the Hydraulics Manual in their SWMP. Once Ecology approved the SWMP as meeting federal and state requirements under this permit, and once the permit is issued, then the use of the manuals become a requirement.

If a manual or other documents is listed and WSDOT says that implementing it is the way they do business, and we place it in the permit, then two things can be assured: one, we agree that the way they run a program meets state and federal requirements; and two, it becomes a permit requirement that they continue to implement.

*We strengthened this section requiring WSDOT coordinate with phase I and II permittees. We changed the language on page 2.9 to require WSDOT to provide outfall mapping information to Phase I, Phase II, and **tribal governments** upon request.*

Section 2

- Ecology added language to strengthen coordination requirements with other Phase I, Phase II, and tribal governments.
- Ecology added language to require LID feasibility studies through the application of the HRM.

Section 5

- Ecology added language requiring LID studies through the application of the HRM

Section 6

- **There were a number of concerns about the stand-alone retrofit program, most of them having to do with making sure WSDOT did not abrogate responsibility in areas where local programs, plans, TMDLs, or tribal interest required retrofits.**
- **There was also concern about methodology and accounting;**
- **We also received comments and requests to make sure no new harm would happen in project sites.**
- **Section 6.2 also incorporates by reference certain sections of the HRM. What is the procedure for modification of these sections of the HRM and the HRM in general and how does this procedure satisfy requirements for permit modifications?**
- **The idea that project-driven stormwater retrofit obligations can be met off-site by retrofitting an equivalent area of state highway in targeted environmental priority locations will serve to channel available funding disproportionately into pristine watersheds at WSDOTs choosing**

Response to the range of comments:

The common question and concern that has arisen in many forums, including the joint meeting with Ecology and the Services and the Stakeholder meetings, was about making sure no new harm happened at the project level. WSDOT is required to address all water quality problems from all of their roadways, no matter where the problem occurs. Ecology recognized though, that there is not enough money in the state budget to do that. Thus we concurred with this project in so far that it addresses the highest environmental priorities first, then over time will address all problems. The list of retrofit projects will not go away until they are treated to standards.

*The alternative retrofit methodology has 3 criteria screens. We added new criteria in Phase 2 Field Reconnaissance. The new criteria requires WSDOT to consult with local governments and to meet local requirements when implementing this program. We added this language to the SWMP; **“Retrofit priorities identified in local basin plans,***

comprehensive plans, and applicable TMDLs areas and will not be considered in making these alternative retrofit site selection decisions.”

Ecology, with review and comment from NMFS and USFWS, approved the methodology and criteria found in Section 6.3 (x 6.2). As part of the annual reporting requirement, WSDOT must report on the offsite acres mitigated, and at the end of the permit must meet all retrofit obligations. Both the annual reports and final report will be certified as correct. If they are not, then WSDOT will not be in compliance with their permit.

We landed on the 1:1 ratio because we had no other data that suggested otherwise. It is easy to make a claim that alternative site mitigation should be 3:1 or 6:1, but unless we had hard data, it would be a call we could not defend. Other than that, the 1:1 ratio will also be used to for accounting.

Since this permit does not cover federal or tribal lands, this priority retrofit proposal would not apply to reservation lands. For projects that affect trust lands, WSDOT shall consult with area, tribal, or local biologists.

Section 7

Ecology received many comments on Section 7. Section 7 of the SWMP outlines operation and maintenance activities throughout the WSDOT system. Some of the particular concerns include:

- **Correcting stormwater BMPs deficiencies**
- **Catch basin maintenance**
- **Street sweepings**
- **Use of de-icing agents**
- **Meeting Local Standards.**
- **SWPPP development**

Response to the range of comments:

We changed the language that requires WSDOT to correct BMP deficiencies as they are discovered. However, we left language in that also requires WSDOT to request funding in the event their budget does not allow for correction of all BMPs that need so.

We have been told by WSDOT Maintenance that it will be two years until the Road Side Inventory team has a catch basin inventory to use. Until that inventory is complete, catch basins that are inspected are the ones that will be current in the system. Two vector trucks are in the budget request. If funding is received for them it will take a year to take receipt. Without these additional vector trucks, WSDOT cannot maintain the catch basins as quickly as they would like. Only 12 of the 24 maintenance areas are currently meeting MAP performance levels, so they are already in a hole.

For WSDOT's street sweeping program, they have identified and marked ESA sensitive area (water) with a 300' buffer. Within these buffer areas Maintenance implements Regional Road Maintenance Endangered Species Act program. This program has been

approved by NOAA National Marine Fisheries. It is not appropriate to deposit potential contaminants (including sources of sediment) within this 300' buffer area. WSDOT Maintenance must have a good reason to even place clean soil in this buffer area.

WSDOT is required to implement their Roadside Integrated Vegetation Management Program. At face value it seems there is nothing to implement, however, their RIVM is more than just a description, it is a program for maintaining roadside vegetation using an integrated pest management approach. The program now has the force of an NPDES permit behind it. When Ecology reviewed the program, it met the AKART and MEP test required of all our permits.

Wherever WSDOT facilities drain into the King County MS4, or any other local MS4 that has been issued coverage under a municipal stormwater permit, WSDOT is subject to the local stormwater ordinances and rules. This is stated in the WSDOT Stormwater Management Program in Section 1.5.1:

“In addition, WSDOT needs to comply with local jurisdiction stormwater standards when WSDOT elects, and is granted permission, to discharge stormwater runoff into a municipality’s stormwater system through utility agreements and permits.”

While Ecology acknowledges the local governments’ authority, Ecology will not make compliance with local ordinances a requirement of WSDOT’s NPDES permit. Local governments must use their own authorities to gain compliance.

Where WSDOT discharges stormwater from its MS4 directly into a receiving water, without passing through a local MS4, Ecology requires WSDOT to comply with its NPDES permit requirements, i.e., application of the HRM. In addition, Ecology reserves the right to require additional or alternative treatment, flow control, or source control of any project based upon a more specific consideration of the factors involved. If a local government has adopted stormwater discharge requirements that go beyond the State’s requirements for that receiving water, Ecology will not use WSDOT’s NPDES permit to enforce the local requirements.

Chapter 6 of the Snow and Ice Plan describes the application guidelines developed from federal guidance and national highway research program. However there is no discussion of how the application rates impacts water quality. Your concern raises an issue that we struggle with, that is, how road maintenance guidelines developed for public safety impact the environment.

We clarified in the SWMP that maintenance facilities and rest areas need facility specific SWPPPs. That seems to make more sense, and thank you for your comment about that. We did leave in language that allows WSDOT to develop generic SWPPPs for park and ride lots.

However, SWPPP funding and implementation has to occur within a state funding cycle. Hopefully WSDOT can ramp up their program sooner, but one person with statewide responsibility to accomplish this task among others tasks is daunting.

- Ecology removed any language making the SWPPP implementation dependent upon funding.
- Language was added authorizing the use of the HRM design standards and BMP construction.