

Clean Water Services
National Pollutant Discharge Elimination System Permit
Supplemental Permit Evaluation Report and Fact Sheet
March 7, 2005

This Report was revised on July 22, 2005 in response to public comments. These revisions are found in the following sections of the Report:

Schedule D – Special Conditions: Condition D.8.b.(3).(iii).(2) and Condition D.8.b.(7). (c); Schedule F – General Conditions; Attachment A – Additional Antidegradation Analysis; Attachment B – Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area

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SUMMARY OF PERMIT ACTION

Clean Water Services (CWS) operates a municipal separate storm sewer system (MS4) that services urban Washington County. In accordance with 40 Code of Federal Regulations (CFR) §122.26, municipal separate storm sewer systems are required to obtain a National Pollutant Discharge Elimination System (NPDES) Permit. The MS4 NPDES permit for CWS has been incorporated into a watershed-based discharge permit that also covers discharges from four (4) publicly owned sewage treatment works (POTWs).

The initial MS4 permit for Clean Water Services was issued on July 26, 1995 and expired on June 30, 2000. The Department issued the watershed-based Permit Numbers 101141, 101142, 101143, 101144, and MS4 on February 26, 2004 in response to renewal Application Numbers **991614, 991615, 991616, 991617, and 989298** - received by the Department on December 29, 1997 and revised on December 18, 2001- and MS4 application number 989200 received on June 1, 2000. A Petition for Reconsideration was filed on April 26, 2004 requesting the Department to reconsider the issuance of Permit Numbers 101141, etc. On May 17, 2004, the Director of the Department issued an order granting reconsideration. The Department reviewed the issues identified in the April 26, 2004 Petition for Reconsideration and determined it would address a subset of the issues raised in the Petition. The proposed permit action is to modify on reconsideration Permit Numbers 101141, etc.

This Permit Evaluation Report describes the proposed significant modifications to Permit Numbers 101141, etc., the basis for those modifications, and provides further analysis of the renewal permit action where appropriate. This Permit Evaluation Report supplements the permit evaluation report that accompanied the issuance of Permit Numbers 101141, etc. on February 26, 2004.

Permit Numbers 101141, etc. as proposed for modification on reconsideration will implement applicable requirements under federal and state law. The Clean Water Act and the Code of Federal Regulations, as interpreted by the Environmental Protection Agency, establish federal requirements. The Oregon Revised Statutes and, Oregon Administrative Rules, as interpreted and applied by Department of Environmental Quality, establish the Oregon requirements.

TABLE OF CONTENTS

	Page
Overview.....	1
Legal and Policy Analysis	1
Cover Page	5
Schedule A Controls and Limitations for Stormwater Discharges from MS4s.....	5
Schedule B Monitoring and Reporting Requirements	7
Schedule C Compliance Schedules.....	8
Schedule D Special Conditions.....	9
Schedule F General Conditions	11
Attachment A: Additional Antidegradation Analysis.....	i
Attachment B: Qualitative Assessment of Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area	ii

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CLEAN WATER SERVICES NPDES PERMIT
EVALUATION REPORT AND FACT SHEET

OVERVIEW

Clean Water Services operates the municipal storm sewer system that serves urban Washington County, Oregon, as well as four POTWs.

The MS4 operated by CWS covers an area of approximately 75,000-acres (117 square miles). CWS operates and maintains publicly owned storm and surface water facilities for water quality. Management practices include street sweeping, maintenance of drainage structures, storm drain pipes and their inlets, and culverts. CWS maintains over 400 miles of storm drains, and the 12 cities within the MS4 area maintain an additional 570 miles of storm drains.

All drainage from the Washington County urban area flows into the Tualatin River, either directly or indirectly.

The initial MS4 permit was issued on July 26, 1995 and expired on June 30, 2000. The Department issued Permit Numbers 101141, 101142, 101143, 101144, and MS4 (the “renewal permit”) on February 26, 2004 in response to Application Numbers 991614, 991615, 991616, 991617, and 989298 - received by the Department on December 29, 1997 and revised on December 18, 2001- and MS4 application number 989200 received on June 1, 2000. On April 26, 2004, a petition for reconsideration of the renewal permit was filed by the Northwest Environmental Defense Center and certain other nonprofit corporations and individuals. On May 17, 2004, the Director of the Department issued an order granting reconsideration. The proposed permit action is to modify on reconsideration the renewal permit (Permit Numbers 101141, etc.). The Department published proposed modifications to the renewal permit based on reconsideration for public review and comment on March 7, 2005, and issued final modifications to the renewal permit on July 27, 2005.

This Permit Evaluation Report (PER) supplements the permit evaluation report accompanying issuance of the renewal permit. The Department considered the issues identified in the April 26, 2004 petition for reconsideration. In some cases, the Department determined that no modification or further analysis was necessary. In other cases, the Department determined that modification and/or further analysis was appropriate. This PER describes the modifications made to the renewal permit, the basis for those modifications, and provides further analysis of the renewal permit where appropriate. These modifications pertain to the MS4 portions of the permit.

The permit as modified on reconsideration is issued pursuant to state law and implements applicable federal and state law. The federal requirements specific to NPDES permits for municipal stormwater systems are set out in 33 USC § 1342(p)(3)(B) and 40 CFR § 122.26. ORS 468.065 and ORS 468B.050 provide specific state authority for the permits. In addition, ORS 468B.035 authorizes the implementation of the federal Clean Water Act and regulations adopted under the Act.

LEGAL AND POLICY ANALYSIS

Antibacksliding Review

The Clean Water Act generally prohibits the EPA or delegated states from renewing a NPDES Permit with effluent limits that are less stringent than the comparable provisions in the previous permit. 33 USC

1342(o) [Clean Water Act § 402(o)]. The renewal permit does not allow backsliding. The original permit issued in 1995, the February 2004 renewal permit, and the proposed permit modified on reconsideration all include MS4 provisions prohibiting non-storm water discharges into the storm sewer system and both require the permittee to control the discharge of pollutant loads to the maximum extent practicable (MEP).

The principal mechanism for controlling MS4 discharges is the development and implementation of a storm water management plan (SWMP). Both the prior and renewal permits require the SWMP to control pollutant discharges to the MEP standard. In addition, the renewal permit includes provisions that are expected to lead to a SWMP that is even more effective than the program established under the prior permit. As noted in the antidegradation review section of this report, the renewal permit is not expected to result in increased discharge loads even with projected growth.

The Department also believes that the CWA prohibition on backsliding does not actually apply to MS4 permits. By its terms, the CWA prohibition on backsliding applies to effluent limits specifically established under 33 USC § 1311(b) [CWA Section 301(b)] and 33 USC § 1313(d). Such limits are not applicable to MS4 permits. *See Defenders of Wildlife v. Browner*, 191 F. 3rd 1159, 1164-66 (9th Cir. 1999). The Department has determined that the MS4 portion of the permit will satisfy federal and Oregon law by requiring controls that effectively prohibit non-stormwater discharges and that reduce stormwater discharges to the maximum extent practicable.

Antidegradation Review

The Department's antidegradation policy in OAR 340-041-0004 protects waters of the state from unnecessary further degradation from new or increased sources of pollution and ensures protection of existing beneficial uses. Permit renewals imposing the same or more stringent requirements as the prior permit are not considered to lower water quality from existing water quality. Here, both the prior MS4 permit and the renewal permit require the permittees to reduce the discharge of pollutant loads to the MEP.

As noted above, some of the receiving waters covered by the prior and renewal permits are water quality limited. In addition to the general prohibition on degradation discussed above, a conventional NPDES permit must include any effluent limits needed to ensure that discharges will not cause or contribute to a violation of water quality standards or to implement a total maximum daily load adopted to address the standards violation. 40 CFR 122.44(d). As discussed above, the Department has determined that the MS4 portion of the permit will satisfy the requirements of federal and Oregon law by requiring controls that effectively prohibit non-stormwater discharges and that reduce stormwater discharges to the maximum extent practicable. To the extent that water quality standards are not being met, the Department determines that implementation of the measures set out in the storm water portion of the proposed permit will reduce the relevant waste load contributions to the maximum extent practicable as required by federal law. (And as discussed below, the permits also include all available and reasonable controls as required by state law.) Moreover, the renewal permit is not expected to result in an increased discharge load from that authorized under the prior MS4 permit.

With respect to receiving waters that are high quality waters or that attain water quality standards for some but not all relevant parameters, the proposed renewal permit is not expected to allow a discharge of an increased load beyond that presently allowed in the prior permit because it requires the permittee to

develop and implement plans to reduce overall pollutant loadings and address storm water TMDL waste load allocations to the MEP.

The renewal permit requires the permittee to ensure that all new residential and commercial developments, as well as re-developments, follow local construction and post-construction stormwater regulations designed to minimize the discharge of polluted stormwater to the MS4. Although some increase in discharges might be expected from these new developments, the quantity and concentration of stormwater pollutants will be significantly less than if no stormwater management regulations were implemented. Further, the MS4 portion of the renewal permit requires the permittee to reduce stormwater pollution from existing developments to the maximum extent practicable. Over the five-year permit term, a range of programs will be implemented and enhanced to minimize stormwater pollution discharges from existing residential, commercial, and industrial developments. These programs include roadway pollution reduction activities implemented by the permittee, education and outreach to the general public and businesses, and industrial stormwater technical assistance and regulatory programs. Thus, the combination of regulations to minimize new sources of pollution from new developments and the reduction in pollution from existing developments is expected to result in a net decrease in stormwater pollution discharges to the MS4 during the renewal permit period.

As discussed above, the prior permit and the renewal permit do not set numeric discharge limits for MS4 discharges. The law recognizes that stormwater discharges are highly variable in nature and difficult to control due to topography, land use and weather differences (e.g., intensity and duration of storms). Through an adaptive management process, the permittee is required to regularly review and refine their best management practices to reduce pollutants to the maximum extent practicable. A goal of the renewed permit is a net reduction in storm water pollutant loadings over the five-year permit term. Therefore, no changes are being proposed that would be expected to cause a lowering of water quality for the purpose of this antidegradation review.

The permit does allow for the revisions to the storm water management plan (SWMP) through a prescribed process of adaptive management. [see Schedule D(2)(a)] Such revisions are expected to improve the overall effectiveness of the SWMP and not contribute to increased degradation. Any change to the SWMP that meets the criteria set forth in Schedule D(2)(f)(iii) will be subject to formal permit modification procedures and antidegradation review.

Additional antidegradation analysis, conducted in response to public comment, is provided in Attachment A of this report.

State Agency Coordination Requirements

The NPDES permit program has been designated as a program affecting land use for purposes of ORS 197.180; OAR 340-018-0030(5); OAR 660-031-0012(2)(b)(D). Accordingly, the Department will not issue a new NPDES permit unless it has received a land use compatibility statement (LUCSs), or otherwise made a determination that the permit complies with the state-wide land use goals and is consistent with local comprehensive plans and land use regulations.

The permit at issue is a renewal permit, however, and DEQ generally is not required to obtain LUCS or make an independent land use determination for renewal permits. OAR 340-018-0050(2)(b); OAR 660-030-0090; and OAR 660-031-0040.

The renewal permit exception to the LUCS requirement does not apply if the renewal permit involves a substantial modification or intensification of the permitted activity. *Id.* Under the applicable rules, a substantial modification or intensification of the activity exists when:

- (i) The permitted source or activity relates to the use of additional property or a physical expansion on the existing property;
- (ii) The permitted source or activity involves a significant increase in discharge to state waters or into the ground; or
- (iii) The permitted source or activity involves the relocation of an outfall outside of the source property.

OAR 340-018-0050(2)(b)(B).

The permittee has documented and the Department finds that the permitted MS4 activities under the prior and the renewal permits are virtually identical. Both the prior MS4 permit and renewal permit are issued on a system-wide basis, require measures that effectively prohibit non-stormwater discharges and require controls to the maximum extent practicable. Both permits include adaptive management measures designed to improve the management practices and thus reduce waste discharges. As part of the antidegradation review, the Department determined that the renewal permit will not allow a significant increase in discharges. And, since the prior MS4 permit covered all existing and future discharges from the system, the renewal permit does not allow the use of additional property, a physical expansion, or a relocation of an outfall as those terms are used in the rule.

The rules addressing permit renewals are necessarily general in nature, however, and the application to the present situation has been questioned in some comments submitted on the draft renewal permit. Accordingly, DEQ requested and received LUCSs from the local governments with land use jurisdiction in the areas covered by the renewal permit. Should the Land Use Board of Appeals or a reviewing court determine that a land use determination is required for the renewal permit, the incorporated LUCSs demonstrate that the jurisdictions have acknowledged comprehensive plan provisions and land use regulations that are applicable to the renewal permit and that the renewal permit is consistent with those provisions and regulations.

State Statutory Permit Requirements

All water quality permits must meet the requirements of state law. Oregon statutes in general give the Environmental Quality Commission and the Department broad authority to impose permit requirements needed to prevent, abate, or control water pollution. See ORS 468B.010, 468B.015, 468B.020, and 468B.110. However, direct statutory requirements applicable to discharge permits are more limited. ORS 468B.020(2)(b) directs DEQ to require the use of all available and reasonable methods necessary to protect water quality and beneficial uses. DEQ interprets this requirement to be no more restrictive than the federal directive that requires MS4 permits to control pollutants to the maximum extent practicable. The Department further has determined that the renewal permit and the requirement to control discharges to the maximum extent practicable appropriately addresses Oregon's environmental policies and adequately protects the health, safety and welfare of Oregon citizens. ORS 468B.050 also requires that discharge permits specify applicable effluent limits. The Department has determined that the effluent limits applicable to the MS4 portion of the renewal permit are the effective prohibition on non-stormwater discharges and the requirement to control stormwater discharges to the maximum extent practicable.

COVER PAGE

Permittees

The permit issued in February 2004 included Washington County DLUT (DLUT) as a co-permittee for the MS4 portion of the permit. Since the issuance of the permit, CWS and DLUT have signed an intergovernmental agreement (IGA) that enables CWS to act on behalf of the DLUT regarding MS4 matters. With the signing of this agreement, CWS is now in a position to assume DLUT's responsibilities regarding the MS4 provisions of this permit. As such, the permit has been modified to remove DLUT as a co-permittee under this permit and CWS will be responsible for all MS4 discharges in the permitted area (including all permitted MS4 discharges previously the responsibility of DLUT). (As noted in section 1.1 [page 4] of the permit evaluation report accompanying the February 2004 permit issuance, this IGA was anticipated and it was noted that the permit may be modified to remove DLUT as a co-permittee.)

Receiving Stream Information

The front page of the renewal permit includes information about the receiving stream(s) to which the permittee discharges. In addition, a reference is made to the Total Maximum Daily Load (TMDL) that establishes wasteload allocations (WLAs) for the permittee's discharges in the Tualatin sub-basin. Regarding MS4 discharges, this reference does not create any permit requirements or represent numeric effluent limits. Rather, it is simply designed to acknowledge the existence of the TMDL and WLAs. The methods by which the permittee is required to address TMDLs are described in Schedule A of the permit.

Facility -Municipal Separate Storm Sewer System (MS4) (Page 3)

The description of the MS4 discharges covered by this permit has been clarified. The modification is necessary since the original language used the term "within the district boundary of Clean Water Services" which encompasses some areas in which CWS provides sanitary services, but not storm water services. The new term, "within the storm water service area of Clean Water Services" is more accurate.

SCHEDULE A Controls and Limitations for Discharges

Schedule A provides a summary of the required controls and limitations for discharges from permitted sources. Additional requirements related to some of the controls and limitations discussed in this Schedule can be found in other schedules of the permit. The proposed revisions to the substantive information and requirements in the MS4 portion of Schedule A's conditions are consistent with what was included in the renewal permit under reconsideration. The notable proposed changes to the renewal permit issued in March 2004 are summarized below.

Condition 2.a. – Implementation of Storm Water Management Plan

This condition was modified to reference a specific file number to identify the location of the current SWMP and any future SWMP revisions. This reference will assist the public and other interested parties in obtaining access to the SWMP.

In addition, Condition 2.a. now references the federal regulatory citation that provides the basis for the SWMP requirements, as well as the sections of the renewal permit that address the SWMP, including the new Table C-1 that summarizes the major SWMP commitments and associated compliance dates. These

references were added to clarify and succinctly summarize the components that comprise the requirements for SMWP development and implementation.

Condition 2.b. – Maximum Extent Practicable

Condition 2.b. describes the compliance standard for the permit and SWMP under federal and Oregon law. The MS4 permittees are required to implement controls to reduce the discharge of pollutants to the maximum extent practicable (MEP), in accordance with Section 402(p)(3)(B) of the federal Clean Water Act, 33 U.S.C. 1342 (p)(3)(B)(iii), and ORS Chapter 468B. The permittee is required to implement reasonable and available controls to satisfy the MEP requirement. Implementation of available and reasonable controls to reduce the discharge of pollutants to the maximum extent practicable will serve to protect, maintain and improve the quality of waters of the state and will protect the beneficial uses of such waters consistent with ORS 468B.015 and ORS 468B.020.

ORS 468B.020 requires the use of all available and reasonable methods of control to achieve Oregon's water quality goals described in ORS 468B.015, and ORS 468B.048. In addition, ORS 468B.035 provides the EQC and the Department authority to implement federal regulations and guidelines established by the EPA in accordance with the Clean Water Act. With respect to the MS4 systems at issue in this permit, the Clean Water Act and federal regulations require permittees to control the discharge of pollutants that may be contained in municipal storm water to the maximum extent practicable. DEQ interprets the MEP requirement to require all controls that are reasonable and available. The Department has further concluded that the permit conditions, including the requirement to control discharges to the MEP standard appropriately addresses Oregon's environmental policies and adequately protects the health, safety and welfare of Oregon's citizens. Accordingly, control measures meeting the MEP requirement satisfy the requirements in both Section 402(p)(3)(B) of the federal Clean Water Act, 33 USC 1342 (p)(3)(B)(iii) and ORS Chapter 468B. The Department has reviewed the SWMP submitted with each permit application and concluded that the program elements included in the permittees' SWMPs, in conjunction with the provisions contained within the permit, are designed to protect, maintain and improve the quality of the waters of the state for the protection of the designated beneficial uses of such waters and will serve to reduce the discharge of pollutants to the maximum extent practicable.

In recognition of the difficulties regulating discharges from municipal separate storm sewers, EPA has intentionally not provided a precise definition of MEP to allow maximum flexibility in MS4 permitting. EPA does envision, however, that the evaluative process MS4s undertake to meet the MEP standard will: "...consider such factors as condition of receiving waters, specific local concerns, and other aspects included in a comprehensive watershed plan. Other factors may include MS4 size, climate, implementation schedules, current ability to finance the program, beneficial uses of receiving water, hydrology, ecology, and capacity to perform operation and maintenance." December 8, 1999 Federal Register, Vol. 64, No. 235, Page 68754. The Department understands that what constitutes MEP for a particular permittee may change over time. Therefore, the Department has adopted monitoring and reporting requirements described in Schedule B to ensure continued compliance with the MEP standard.

The Department has determined that the permit conditions, including the requirement to control stormwater discharges to the MEP standard through SWMP implementation, conforms to OAR 340-041-0101 & 340-041-0340 (Columbia and Willamette River basins respectively), which require that water quality be managed to protect beneficial uses. Policy guidelines in OAR 340-042-0001 provide that the Department "will continue to manage water quality by evaluating discharges and activities, whether existing or a new proposal, on a case by case basis, based on information currently available and within

limiting framework of minimum standards, treatment criteria and polices ...”. One such treatment criteria and policy guideline is set forth in OAR 340-041-0009(8), which provides that “Storm Sewer Systems subject to Municipal NPDES Stormwater Permits: best management practices must be implemented for permitted storm sewers to control bacteria, to the maximum extent practicable.” Additionally, through the evaluative process of the SWMP, as required in the Interim Evaluation Report, and the iterative process of adaptive management as set out in Schedule D, including the development of TMDL benchmarks for use in guiding adaptive management decisions, the Department expects that the objective of Oregon’s plans for management of the quality of public waters will continue to be met through the MEP standard as envisaged by state and federal law.

SCHEDULE B

Monitoring and Reporting Requirements

Condition B.1.e. – MS4 Monitoring Component Requirements

The MS4 monitoring section of the renewal permit includes two new proposed tables and has been partially reorganized to more clearly and logically describe the monitoring requirements at various stages of permit implementation. However, most of the substantive monitoring requirements remain unchanged from the renewal permit under reconsideration.

Condition B.1.e.(1)

Condition B.1.e.(1) describes the requirements that apply to the permittee. More specifically, Tables B-1 and B-2 summarize the minimum MS4 environmental monitoring requirements of the renewal permit. These tables outline the type of sampling, the location of monitoring activity, and the minimum sampling frequency. Although the approved monitoring component of the SWMP is incorporated by reference into the renewal permit, the Department believes placing monitoring commitments into the renewal permit provides an additional level of detail that is useful to the public.

The permittee is required by the renewal permit to implement its SWMP monitoring component, which may include monitoring commitments in addition to those reflected in Tables B-1 and B-2. However, the monitoring activities in these two tables are expected to remain consistent throughout the term of the renewal permit, whereas other monitoring activities in the SWMP may be adjusted to respond to new opportunities or new data. Revisions to monitoring commitments not contained in Tables B-1 and B-2 will need to be reviewed by the Department, and most of them will likely be considered on-going adaptive management changes to the SWMP. Proposed modifications to the monitoring components must be submitted with the Interim Evaluation Report, as described in Schedule B.1.e.(1)

Condition B.1.e.(2)

Condition B.1.e.(2) is focused on the requirements associated with the update or revision to the SWMP monitoring component developed as part of the Interim Evaluation Report discussed in Schedule B.3.b.(1) of the renewal permit. These requirements remain largely unchanged from the renewal permit under reconsideration. The following two editing changes are proposed:

- With regard to how the Department will address the revisions to the monitoring component of the SWMP, a reference is made to the new approval and public process requirements [Schedule D.8.b.(6)-(7)].

- A language change was made to clarify that permittee must continue to conduct discharge and ambient monitoring unless the Department approves use of alternate data sources that can adequately achieve the monitoring objectives.

Condition 3.b.(1) – Requirements for Interim Evaluation Report

The title of this permit condition, and the report it references, is proposed to change from Requirements for 2nd Year Annual Report – SWMP Revision to Requirements for Interim Evaluation Report. The Department proposes to decouple this evaluation report and associated SWMP revisions from the second year annual report. In addition, the Department proposes to change the submittal deadline for the Interim Evaluation Report from November 1, 2005 (with the second year annual report) to May 1, 2006. The additional six months provided by the new deadline will provide the permittee adequate time to develop a revised SWMP. The analysis required for this report is much broader in scope than what is required for annual reports, and there is no inherent connection between the two reports that would necessitate the submittal of a unified report or other combined submittal.

The Department also proposes to amend the last paragraph of this condition to provide that any SWMP revisions contained in the Interim Evaluation Report must be approved by the Department in accordance with Schedule D. 8.b.(6).

SCHEDULE C
Compliance Schedules

The Department did not include any compliance schedules in the February 2004 renewal permit (other than the requirements for the annual reports and the analyses required for the Interim Evaluation Report and the next renewal application) because the permittee's SWMP, incorporated into the permit by reference, includes schedules for the completion of various storm water management activities. However, upon reconsideration, the Department has proposed to include a compliance schedule within Schedule C to provide a concise summary of the major SWMP commitments and activity completion dates. Table C-1 provides this summary.

By connecting SWMP implementation activities with specific permit conditions and federal regulations, Table C-1 assists the public in understanding the scope and nature of the activities implemented by the permittee. Because the SWMP is a large and complex document, the Department determined that a summary of the major SWMP activities in the renewal permit would provide to the public easily accessible information on the required activities. The level of detail in Table C is purposefully limited. Specific implementation subtasks are more appropriate for the SWMP because they are more likely to be subject to on-going adaptive management. For instance, if the permittee planned to implement an educational program on reducing pesticide and fertilizer use, the exact mechanism for delivering the education (e.g., public events, radio ads, etc.) may change during the permit period because of new research, data or opportunities.

SCHEDULE D Special Conditions

Condition 8.b. – Stormwater Management Plan

Condition 8.b.(1) – Adaptive Management

The last sentence in Schedule D.8.b.(1) refers to how the Department will address adaptive management changes to the SWMP. The Department proposes to revise the language in the renewal permit under reconsideration that describes when a change must be made using the formal permit modification procedures to ensure consistency with the new SWMP revision approval procedures in Schedule D.8.b.(6).

Condition 8.b.(2) – Required SWMP Elements

The Department proposes to add an introductory sentence to this condition to provide clarity regarding the purpose of the “Required SWMP Elements.” Specifically, the elements listed in condition 8.b.(2) are to be addressed by the permittee in the comprehensive SWMP reviews conducted as part of the Interim Evaluation Report requirements [see Schedule 3.b.(1)]. In the renewal permit under reconsideration, no introductory sentence was included which clearly described how these listed SWMP elements were to be addressed.

Condition 8.b.(3).(iii).(2) describes the expectations for the co-permittee’s industrial monitoring program. The types of pollutants listed in the 2004 renewal permit were derived from the original MS4 and industrial permit application requirements included in the 1990 federal regulations. In response to a comment made on the proposed permit modifications, this condition of the permit was changed to be consistent with the pollutant parameters the Department requires NPDES 1200-Z industrial stormwater permittees to monitor. The current list of 1200-Z parameters is based on the research and industrial monitoring that has been conducted since 1990, and represents key “indicator” pollutants for industrial stormwater.

Condition 8.b.(6) – SWMP Revision Procedures

Condition 8.b.(6) is intended to replace Schedule D.8.(e) in the renewal permit under reconsideration. This condition addresses the Department’s review and approval process for various types of SWMP changes. Upon reconsideration, the Department determined that the language in Schedule D.8.(e) was potentially confusing and unclear. For instance, the term “minor modifications” was used in this condition of the prior permit. Since a definition of minor permit modifications is provided in the federal NPDES regulations [40 CFR 122.63], questions regarding whether, and how, the definition in the MS4 permit was related to the definition in the CFR were raised. Likewise, a reference in the renewal permit under reconsideration is made to “significant” SWMP changes, a term that was deemed to be similarly ambiguous and potentially confusing. In addition, the language in the renewal permit allowed some SWMP revisions (“minor” ones) to occur without prior notification to the Department. The Department has concluded that the permit terms need to be more clear and certain with respect to the Department’s review and approval process for SWMP revisions. The new Condition 8.b.(6), therefore, proposes four subparts designed to clearly describe SWMP revision and approval procedures.

Condition 8.b.(6)(a) is generally consistent with language in the existing renewal permit regarding the implementation of the SWMP and on-going adaptive management changes to the SWMP. However, the Department proposes to include language to state that, in certain instances, such SWMP changes

could result in further permit modifications, and references the condition [8.b.(6)(d)] that describes the modification criteria.

Condition 8.b.(6)(b) describes the SWMP revision approval process. The Department proposes to revise this condition to require all SWMP revisions to be submitted to the Department for approval prior to becoming effective. If the Department does not notify the permittee of its decision regarding a proposed SWMP revision within 30 days, the proposed revision would be “deemed approved.” In such instances, the Department will notify the permittee in writing that the revision was deemed approved and has become effective, and will place a copy of the notification in the permit file. In addition, Condition 8.b.(6)(b) requires the permittee to provide the Department with the rationale for a proposed SWMP revision if it results in the elimination of a best management practice (BMP) or the substitution of one BMP for another. This rationale can be crucial in determining whether a proposed revision is justified, and would result in continued conformance with the MEP standard.

For SWMP revisions proposed in the Interim Evaluation Report, Condition 8.b.(6)(c), lengthens to 90 days the period DEQ has to notify the permittee of its decision regarding the proposed SWMP revision. The Interim Evaluation Report will be more comprehensive than the Annual Report and therefore additional time is needed for a thorough review of SWMP revisions. This provision also contains “deemed approved” language that is subject to the 90 day review period.

The Department proposes to revise Condition 8.b.(6)(d) to allow for Department-initiated permit modifications in response to proposed SWMP revisions. The language provides the Department with broad discretion in determining whether proposed revisions “substantially change the nature or scope of the SWMP.” The Department determined that including more specific criteria in the permit would not address every type of potential SWMP revision that could be proposed. The range of different SWMP changes, and the circumstances under which such changes are proposed, is so great that even detailed criteria could not address every possibility. Thus, the Department believes it’s more appropriate and efficient to make such decisions based on case-specific factors and circumstances.

Condition 8.b.(6) – Public Involvement Requirements

The Department is proposing the following changes to the public involvement requirements in Condition 8.b.(6):

- The requirements for public involvement related to the Interim Evaluation Report (formerly “Second Year Annual Report”) and the Permit Renewal Submittal have been combined. The two sets of requirements in the renewal permit were similar, and maintaining separate requirements for these two items was deemed unnecessary.
- The Department proposes to include specific minimum public involvement actions for the Interim Evaluation Report and Permit Renewal. The existing renewal permit condition required the permittee to develop and implement “a process” for obtaining public comment and addressing material public comment. Condition 8.b.(6) would now require notice in a local newspaper and the permittee’s web site (if actively maintained), and explicitly requires the permittee to make copies of the proposed SWMP revisions available upon request. The Department determined that these specific minimum activities would provide assurance that an adequate involvement process would be implemented.
- In the proposed draft permit modifications, a new condition was added to 8.b.(6) that would require each co-permittee to maintain a list of e-mail addresses for persons interested in receiving notice of SWMP revisions subject to public review. Although general notices in

- the paper and web site are essential in reaching a broad audience, they are less effective in ensuring notification to those who have notified the Department or co-permittee of their interest in the SWMP. In response to a comment received on the proposed permit modifications, this new permit condition was modified to transfer responsibility for maintaining the interested persons list from the co-permittees to the Department. The primary advantage of centralizing the maintenance of these lists with the Department is that it allows a person or group interested in the SWMPs of multiple co-permittees and other permittees to contact only one entity rather than several. The co-permittees will be responsible for notifying the Department of proposed SWMP revisions within a week of initiating their own required public involvement actions, so that timely notification of the revisions can be provided to persons on the Department's lists.
- The Department proposes to include in condition **8.b.(6)** exceptions to the public involvement requirements for certain types of adaptive management changes. Specifically, those SWMP revisions that result in adding BMPs (with no corresponding BMP deletions or reductions), as well as those that do not change the substance of existing BMPs, would not be subject to the requirements of **8.b.(6)**. By allowing for such exceptions, the permittee's public notification and involvement efforts will be focused on the proposed revisions for which alternative perspectives likely exist.

SCHEDULE F

General Conditions

All NPDES permits issued in the State of Oregon contain certain conditions that specify how the permit is to be implemented. These conditions are called General Conditions.

To make them appropriate for the MS4 discharge, the NPDES General Conditions for this permit have been modified from the General Conditions attached to other NPDES Permits. Further, in response to comments from EPA during the public comment period for the proposed modifications, several conditions in Schedule F have been updated to ensure consistency with EPA's Standard Conditions for NPDES permits.

Schedule F- Section E, Definitions and Acronyms

The Department is proposing one change in Schedule F of the existing renewal permit. The Department proposes to delete the definition of Storm Water Management Plan. The Department determined that the SWMP was sufficiently defined in other sections of the renewal permit, and therefore, the inclusion of this definition in Schedule F was deemed unnecessary and redundant.

ATTACHMENT A: ADDITIONAL ANTIDEGRADATION ANALYSIS

During the public comment period on the proposed permit modifications, several commenters asserted that the proposed permits fail to comply with Oregon's antidegradation policy. OAR 340-041-0004. Specifically, the commenters raise concerns that new development within the co-permittees' service areas and expansions of the service areas will result in an increase in pollutant loads. When the Department renewed these permits in 2004, it considered similar comments and concluded that the discharges under the proposed permits would not be expected to exceed the discharges allowed by the permits in 1995. On reconsideration of the 2004 permit, the Department has analyzed this issue in more detail and requested additional information from the co-permittees.

On reconsideration, the Department determines:

1. The antidegradation policy is a part of the state's water quality standards. 40 CFR § 131.12. Under Clean Water Act Section 402(p), MS4 permits (unlike other types of NPDES permits) need not require strict compliance with water quality standards so long as discharges are controlled to the maximum extent practicable and comply with such other provisions as EPA determines to be appropriate. *Defenders of Wildlife v. Browner*, 191 F.3d 1159 (9th Cir., 1999). With some possible exceptions not applicable here, EPA, has determined that strict compliance with water quality standards is not required and the compliance with best management practices established through a stormwater management planning process is appropriate.
2. Oregon also has the authority to impose more rigorous conditions required under state law. *See, e.g., Building Industry Association v. State Water Resources Control Board*, 124 Cal. App. 4th 866, 22 Cal. Rptr. 3d 128 (Cal. App. 2004). As discussed above [reference to analysis under of comments 8, 10, or 16], the applicable provisions under Oregon law are found in ORS 468B.020. This statute directs DEQ to require all available and reasonable methods necessary to comply with water quality standards. In the context of these permits, however, the Department has determined that the federal MEP requirement is at least as stringent as the state requirement.
3. As discussed above, the Department has determined that the BMPs and other control measures imposed by the MS4 permits will control pollutants to the maximum extent practicable at this time. Therefore, no further controls are needed to address antidegradation even if DEQ were to determine that the permits were not consistent with the antidegradation policy.
4. The proposed permits are consistent with state antidegradation policy, however. The relevant provisions of the antidegradation policy are triggered only when a proposed permit renewal would authorize total waste loads that are greater than those allowed under the existing permit. It is difficult to apply antidegradation policy to MS4 permits because loading is highly variable and outfalls are numerous. It is possible, though, to evaluate the discharge loads associated with the MS4, and such an approach is consistent with the antidegradation policy.
5. DEQ has estimated that the more effective controls on new development, redevelopment and existing development implemented since the issuance of the 1995 permits have resulted in loading reductions that are more than sufficient to offset any increases associated with the relatively small expansions in service areas. DEQ's determination is supported by the expert opinions of consultants recently retained by the co-permittees to review and evaluate the data on loading. See attached report entitled *Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area*.

ATTACHMENT B:

**QUALITATIVE ASSESSMENT OF THE CHANGE IN POLLUTANT
LOADS ASSOCIATED WITH MS4 DISCHARGES IN THE PORTLAND
METROPOLITAN AREA**

**Qualitative Assessment of the Change in Pollutant Loads Associated
with MS4 Discharges in the Portland Metropolitan Area**

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Table of Contents

Introduction.....	1
1995 MS4 PERMITS – Permitted Sources, Permit Areas, and MS4 Program Implementation	2
1995 Permitted Sources and Permit Area	2
Load Reduction as a Result of 1995 MS4 Permit Implementation	3
Receiving Water Trend Analysis	5
Fanno Creek	6
Summary	6
2004 Permitted Sources and Permit Areas.....	6
City of Portland, Multnomah County, Port of Portland.....	7
City of Gresham, City of Fairview, Multnomah County	7
Clackamas County, Storm Sewer Service Districts, and Incorporated Cities within the County	7
Clean Water Services.....	8
Summary and Conclusions	8
Table A-1: City of Portland, Multnomah County, Port of Portland Summary of Stormwater Best Management Practices (BMPs) that were implemented pursuant to the 1995 Permit	i
Table A-2: City of Gresham and Co-permittees (City of Fairview and Multnomah County) Summary of Stormwater Best Management Practices (BMPs) That Were Implemented Pursuant to the 1995 Permit.....	iv
Table A-3: Clackamas County and Co-Permittees’ Summary of Stormwater Best Management Practices (BMPs) that were implemented pursuant to the 1995 Permit	vii
Table A-4: Clean Water Services’ Summary of Stormwater Best Management Practices (BMPs) that were implemented pursuant to the 1995 Permit	ix

INTRODUCTION

The purpose of this report is to compare the pollutant loads associated with discharges authorized by the 1995 municipal separate storm sewer system (MS4) permits within the Portland Metropolitan Area to the pollutant loads associated with discharges authorized by the 2004 MS4 permits. The discharges authorized in the 1995 MS4 permits were “all existing and new discharges of stormwater from the municipal separate storm sewer” within the permit area (as defined in the 1995 MS4 permits). These permits authorized discharges from full development within the permit area with the controls that existed at that time. The discharges authorized in the 2004 MS4 permits were “all existing and new discharges of stormwater from the municipal separate storm sewer” within the permit area (as defined in the 2004 MS4 permits) assuming full development with the controls that existed in 2004.

The first round of MS4 permits within the Portland Metropolitan Area were issued by the Oregon Department of Environmental Quality (DEQ) on September 7, 1995 and expired on August 31, 2000. These MS4 permits were issued to four sets of co-permittees¹:

- (1) the City of Portland, Multnomah County, and Port of Portland;
- (2) the City of Gresham, City of Fairview, and Multnomah County;
- (3) Clackamas County, storm sewer service districts, and the incorporated cities within the county;
and
- (4) Clean Water Services.

The two-part applications for the 1995 permits were submitted by the MS4 co-permittees in 1991 (Part 1) and in 1993 (Part 2).

The DEQ issued four renewal MS4 permits to the co-permittees in 2004 in response to applications which were received by DEQ in 2000 from each of the permittees. Between 2000 and issuance of the renewal permits in 2004, the co-permittees continued to operate under an administrative extension of the 1995 permit.

On April 29, 2004, a petition for reconsideration of the renewal permits was filed by the Northwest Environmental Defense Center and other organizations and individuals. On May 17, 2004, the Department Director issued an order granting reconsideration of each of these permits. DEQ published proposed modifications to the four renewal MS4 permits based on these reconsiderations for public review and comment on March 7, 2005.

This report is organized into four sections. Section 2 discusses the 1995 permitted sources and permit areas, and the load reductions achieved through stormwater management program implementation pursuant to the 1995 MS4 permits. Section 2 then presents two case studies on improvements to receiving water quality in response to the implementation of stormwater controls. The loads associated with the 2004 authorized discharges are qualitatively compared to the loads associated with the 1995 authorized discharges in Section 3. A summary of findings is presented in Section 4.

¹ The 1995 permits included the Oregon Department of Transportation and other agencies that are not included in the 2004 permits.

***1995 MS4 PERMITS – permitted sources, permit areas, AND MS4 PROGRAM
Implementation***

1995 Permitted Sources and Permit Areas

The 1995 MS4 permits (as well as the renewal permits) identified the sources covered by the permit on the cover page. The permitted sources and 1995 permit areas are summarized below.

- The City of Portland, Multnomah County, and Port of Portland 1995 permitted sources included: “all existing and new discharges of stormwater from the MS4 within the City of Portland Urban Services Boundary.” The permit area was approximately 60,000 acres, of which approximately 12,600 acres were served by sumps, for a total permit area of approximately 47,400 acres.
- The City of Gresham, City of Fairview, and Multnomah County 1995 permitted sources included: “all existing and new discharges of stormwater from the municipal separate storm sewer system within the incorporated areas of the cities of Gresham and Fairview, and the small areas of unincorporated Multnomah County within the urban service boundaries of the two cities.” The total permit area was 38,310 acres, although recent analysis conducted by Gresham indicates that the land area within the permit boundary was significantly overestimated in 1995.
- The Clackamas County 1995 permitted sources included: “all existing and new discharges of stormwater from the municipal separate storm sewer system within Clackamas County urban growth boundary.” The permit area was approximately 74 square miles (47,360 acres).
- The Clean Water Services 1995 permitted sources included: “all existing and new discharges of stormwater from the MS4 within the stormwater service area district boundary of Clean Water Services and within the urban growth boundary of Washington County.” The permit area was approximately 75,000 acres.

Pollutant load estimates and a description of the methodologies used to develop the estimates were provided in each of the four Part 2 applications. These load estimates were based on the existing conditions (current land uses and areas) in 1993. This estimate of pollutant loads was imprecise because of the limitations of available prediction methods and data to support predictions at that time. The relative values, and not the absolute values, of the pollutant loads were intended to be used to assign priorities and to allocate resources for reducing pollutants in stormwater through implementation of Stormwater Management Plans pursuant to the 1995 permits; they were not intended to provide an estimate of loads associated with the discharges authorized under the 1995 permits.

Load Reduction as a Result of 1995 MS4 Permit Implementation

The 1995 MS4 permits required the MS4 co-permittees to implement a stormwater management program to reduce the contribution of pollutants in stormwater to the “maximum extent practicable” (MEP), the technology-based standard established by Congress in CWA section 402(p)(3)(B)(iii). The four MS4 Programs have each implemented a Stormwater Management Plan (SWMP) to meet the MEP requirement. Implementation of the SWMPs has resulted in reduced pollutant loads in stormwater discharges from the 1995 permit areas as compared to the pollutant loads associated with discharges originally authorized in the 1995 permits.

Although each of the four groups of co-permittees was implementing some limited stormwater-related pollutant control activities prior to issuance of the 1995 permit, none of the programs had developed or implemented a comprehensive SWMP prior to issuance of the 1995 MS4 permits.

Program elements that were in place prior to 1995 typically included the following types of practices, although implementation of these and other elements was not uniform among the permittees:

- Operation and maintenance of the storm drain system and roadways, such as catch basin cleaning and street sweeping.
- Illicit connections addressed through sanitary sewer inspection programs.
- Development controls for a few environmentally-sensitive areas that restricted certain developments and activities, and required erosion control and on-site stormwater treatment.
- Drainage master plans addressed mostly flood control, although some watershed plans had been adopted that addressed water quality (e.g., the Tualatin Watershed Plan).
- Some erosion control enforcement provisions existed.
- Some limited encouragement of stormwater BMPs at public development sites. (e.g., Portland Airport and Oregon Museum of Science and Industry parking lot swales).
- Tualatin basin stormwater treatment requirements. The Tualatin TMDL included requirements to treat runoff for phosphorous control.

The program elements included in the 1995 SWMPs reduced permitted loads in two ways: 1) through implementation of new development and redevelopment standards, and 2) through implementation of program elements that reduced loads from existing sources. These program elements included public education and involvement, operations and maintenance of both the storm drain system and roadways, industrial/commercial controls, illicit discharge elimination, construction site erosion control standards, structural retrofit controls, and water quality critical lands preservation and restoration. A summary of new or improved Best Management Practices (BMPs) implemented pursuant to each of the 1995 permits is provided in Attachment A to this report.

Requirements for incorporating structural treatment BMPs in new development and redevelopment projects have been adopted by all of the co-permittees. A wide range of structural BMPs are permitted with the qualification that the selection process for structural BMPs must consider the pollutants of concern for the development project and receiving water. Pollutants of concern are pollutants likely to be generated from a project. Permissible BMPs typically include common structural BMPs such as

Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area

July 2005

Page 4 of 22

vegetated swales, dry detention ponds, wet detention ponds, and manufactured technologies, as well as less common but very effective BMPs such as treatment wetlands, infiltration or flow through planters (stormwater planter boxes), and green roofs.

While more emphasis appears to have been placed on structural treatment BMP implementation in new development and redevelopment projects in the first years following the 1995 permit issuance, more recently the programs have promoted innovative hydrologic controls through site design practices that reduce runoff volumes. Green roofs, planter boxes, and bioretention areas are examples of effective site design practices used to greatly reduce the amount of runoff generated by new development. Another example of good site design that is promoted by all of the co-permittees is the preservation of critical habitat and riparian areas through acquisition programs or the restoration of these areas through revegetation projects.

Program elements that reduced loads from existing sources have been widely implemented by the MS4 Programs since the 1995 permit issuance. These program elements include:

- street sweeping;
- increased storm sewer system (e.g., catch basins, storm drains, and ditches) and treatment BMP operation and maintenance (O&M);
- erosion control programs for construction sites, including those smaller than covered under a state-issued Construction General Permit;
- public education programs;
- litter control programs;
- industrial/commercial inspection and technical assistance programs;
- spill response programs; and
- restricting the use of certain chemicals, such as de-icing salts, and reclaiming other materials such as gravel used to provide traction.

Education programs can result in reducing the introduction of pollutants into stormwater runoff through practices such as the proper disposal of household chemicals (e.g. stenciling drains to discourage illegal dumping of oil) and the proper disposal of pet wastes. Erosion control and construction site inspection programs have a similar effect on controlling the loss of sediment from construction sites. Proper construction site stormwater management can greatly decrease the amount of sediment and other pollutants in construction site runoff. Illicit discharge programs have removed many illicit sources of pollutants from the MS4s over the past ten years of program implementation.

Street sweeping programs and increased drainage system and treatment BMP O&M activities are responsible for preventing large amounts of trash, sediment, and associated pollutants from being transported in stormwater runoff to receiving waters. O&M activities are particularly effective in reducing pollutant loads associated with sediment in MS4 discharges.

The MS4 Programs have effectively implemented additional source controls since 1995 and have consistently improved the extent, by both area and category, that they are applied; and therefore, have improved the effectiveness of these required controls. Overall, the source controls implemented since

1995 have likely prevented a significant amount of stormwater pollutants from becoming entrained in stormwater runoff or reaching receiving waters.

In addition to structural treatment controls for new development and redevelopment projects, structural treatment retrofit projects that reduce pollutant loads from development that existed in 1995 have significantly reduced the pollutant loads originally allowed under the 1995 MS4 Permits. Selected retrofit controls implemented by the programs are provided in Attachment A.

Receiving Water Trend Analysis

The new and improved stormwater controls that have been implemented, including new development and redevelopment standards and program elements that reduced loads from existing sources, have resulted in reduced pollutant loads to receiving waters. Two watershed studies are summarized below as examples.

Bronson Creek

A recent study investigated if urbanization within the Bronson Creek watershed, located within the Clean Water Services permit area, has impacted water quality over the past decade.² Bronson Creek drains a 3,195 acre watershed within Multnomah and Washington Counties. Bronson Creek originates in the west hills of Portland and is a tributary to the Tualatin River by way of Beaverton and Rock Creeks. Land uses in the headwater area are rural with minor encroachment of suburban residences. The middle sections of the creek are developed with single family residences and the lower sections have mixed use and commercial development.

As part of the Bronson Creek urbanization study, Clean Water Services has been monitoring for 39 water quality parameters at nine stations twice a month since 1994. Parameters associated with urban stormwater selected for trend analysis using data collected from 1994 to 2001 included sediment, nutrients (total and dissolved phosphorous, total nitrogen, and ammonia), and E. Coli. Total impervious area was used as the indicator of urbanization and increased from 15 to 22 percent over the eight year study period. Stormwater program implementation within the Bronson Creek watershed beginning in 1995 included increased levels of source control elements as well as the construction of a number of stormwater ponds adjacent to or upstream of the monitoring locations, many of which were "retrofits" that treated runoff from areas of existing development.

The study investigated if water quality had changed over time as the watershed urbanized and if there was a relationship between water quality and impervious area while accounting for seasonal variation. Trends were analyzed by parameter for each of the monitoring stations. Nutrients showed significant decreasing trends (i.e., a decrease in concentration was considered an improvement in water quality) at several monitoring stations, with only one increasing trend for soluble phosphorous at one station. E. Coli showed a significant decreasing trend at several stations with no significant increases. In general, water quality within Bronson Creek exhibited an improvement (decreases in the pollutant concentrations) over the eight year study period, during which development increased.

² Creech, J. (2003). Urbanization and its Relationship to Water Quality within the Bronson Creek Watershed. Project report submitted for Masters Degree in Environmental Sciences and Resource at Portland State University, provided by Clean Water Services.

Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area

July 2005

Page 6 of 22

Fanno Creek

Fanno Creek begins in the hills of southwest Portland and enters the Tualatin River near the town of Tualatin. The City of Portland has jurisdiction over approximately 4,200 acres within the Fanno Creek watershed. This portion of the watershed is approximately 85 percent developed, primarily with single family residences and to a lesser degree with multi-family residences and commercial uses.

The Portland Bureau of Environmental Services (BES) has been managing surface water quality in Fanno Creek since the late 1980's, when the Tualatin River was listed as water quality limited. The DEQ established a total phosphorous Total Maximum Daily Load (TMDL) in 1988 for Fanno Creek; in 2001 the total phosphorous TMDL was revised and new TMDLs for temperature, bacteria, and dissolved oxygen were established.

Total phosphorous data was collected from 1990 to 1996 as part of a statewide study under the auspices of the Oregon Association of Clean Water Agencies (ACWA). In comparison, monitoring conducted by BES (1998-2002) has shown that efforts to control total phosphorous have resulted in a reduction in the observed event mean concentration of total phosphorous in runoff from single family residential land use, which comprises the vast majority of the Fanno Creek watershed.

In July of 2000, BES began working on a comprehensive Watershed Plan for Fanno Creek (and Tryon Creek) to improve or restore beneficial uses such as water supply, fish passage and habitat, and recreation uses. Best management practices implemented as part of the plan included stormwater public outreach and education, stormwater treatment facilities, and regularly scheduled maintenance for stormwater treatment facilities and streets. While a comprehensive study assessing water quality trends within Fanno Creek has not been conducted, available data for total phosphorous indicate that management practices have caused some improvement despite continued development within the Fanno Creek watershed.

Summary

In summary, the pollutant loads associated with discharges authorized by the 1995 MS4 permits were those in all existing and new stormwater discharges within the permit area (as defined in the 1995 MS4 permits) assuming full development with the controls that existed at that time. Since that time, new or improved controls have been implemented, including new development and redevelopment standards and program elements that reduced loads from existing sources, resulting in reduced pollutant loads. There is site-specific available data to support this conclusion, as illustrated in the two watershed studies summarized above.

2004 Permitted Sources and Permit Areas

For those permits where the permit area has not increased since 1995, loads associated with discharges authorized by the 2004 permits have certainly decreased as compared to loads associated with discharges authorized by the 1995 permits as described in Section 2 above. In areas where the permit areas have increased due to expansion of the urban growth boundaries or changes to the service boundaries, the potential for increased pollutant loads has likely been offset by the decrease in pollutant loads through stormwater program implementation. The following presents a discussion for each permittee. Note that the Oregon Department of Transportation (ODOT) was a co-permittee with each of the four permittee groups below in the 1995 permits; however, ODOT was issued its own MS4 permit in June 2000.

City of Portland, Multnomah County, Port of Portland

The City of Portland, Multnomah County, and Port of Portland 2004 permitted sources as identified on the cover page of the permit include: “all existing and new discharges of stormwater from the MS4 within the City of Portland Urban Services Boundary.” Thus, the permitted sources are identical to those in the 1995 permit, with the exception of ODOT and ODOT’s facilities which are no longer included under this permit.

The 2004 renewal permit area is approximately 49,300 acres or approximately four percent larger than the 1995 permit area. Although the Portland permit area has increased since 1995, it is very likely that when all of the program implementation actions that have occurred since the issuance of the 1995 permit are considered as a whole (see Attachment A, Table A-1), the loads associated with the 2004 permitted discharges are likely to be less than the loads associated with the discharges permitted in 1995.

City of Gresham, City of Fairview, Multnomah County

The City of Gresham, City of Fairview, Multnomah County 2004 permitted sources as identified on the cover page of the permit are identical to those in the 1995 permit (with the exception of ODOT facilities): “all existing and new discharges of storm water from the municipal separate storm sewer system within the incorporated areas of the cities of Gresham and Fairview, and the small areas of unincorporated Multnomah County within the urban service boundaries of the two cities.”

Gresham's urban service area, essentially the current city limits, did not change from 1995 to 2004.

Program implementation by the Gresham co-permittees over the last 10 years has been extensive (see Attachment A, Table A-2). Due to the load reductions afforded through these program implementation measures in combination with no change in the renewal permit area, the loads associated with the 2004 permitted discharges are less than the loads associated with the discharges permitted in 1995.

Clackamas County, Storm Sewer Service Districts, and Incorporated Cities within the County

The Clackamas co-permittees include: Clackamas County, Clackamas County Service District No. 1, Surface Water Management Agency of Clackamas County, the Oak Lodge Sanitary District, and the cities of Gladstone, Happy Valley, Johnson City, Lake Oswego, Milwaukie, Oregon City, River Grove, West Linn, and Wilsonville.

The Clackamas 2004 permitted sources as identified on the cover page of the permit are identical to those in the 1995 permit (with the exception of ODOT facilities): “All Existing and New Discharges of Storm Water from the Municipal Separate Storm Sewer System within the Clackamas County urban growth boundary.” At the time of the 1995 permit issuance, the urban service areas consisted of approximately 74 square miles (47,360 acres). As of 2004, the service areas have increased as follows for the existing co-permittees:

- Unincorporated Clackamas County - 27 acres

Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area

July 2005

Page 8 of 22

- West Linn - 371 acres
- Oregon City - 741 acres
- Happy Valley – 3,360 acres
- Wilsonville - 492 acres
- Lake Oswego – 47 acres

Thus, the 2004 renewal permit area is approximately 5,038 acres (7.6 square miles) larger than the 1995 permit area of 74 square miles, or about a ten percent increase. Although the Clackamas permit area has increased since 1995, it is likely that when all of the program implementation actions that have occurred since the issuance of the 1995 permit are considered as a whole (see Attachment A, Table A-3) the loads associated with the 2004 permitted discharges are likely to be equivalent or less than the loads associated with the discharges permitted in 1995.

Clean Water Services

The Clean Water Services 2004 permitted sources as identified on the cover page of the permit are identical to those in the 1995 permit: “all existing and new discharges of storm water from the MS4 within the storm water service area district boundary of Clean Water Services and within the urban growth boundary of Washington County.”

The 2004 permit area is approximately 75,000 acres (117 square miles), thus there is no increase in permit area.

Program implementation by Clean Water Services over the last 10 years has been extensive, as is summarized in Attachment A, Table A-4. Due to the load reductions realized through these program implementation measures in combination with no change in the renewal permit area, the loads associated with the 2004 permitted discharges are less than the loads associated with the discharges permitted in 1995.

Summary and Conclusions

The purpose of this assessment is to compare the pollutant loads associated with discharges authorized by the 1995 MS4 permits to the pollutant loads associated with discharges authorized by the 2004 MS4 permits. The pollutant loads associated with discharges authorized by the 1995 MS4 permits were those in all existing and new stormwater discharges within the permit area (as defined in the 1995 MS4 permits) assuming full development with the controls that existed at that time. The pollutant loads associated with discharges authorized in the 2004 MS4 permits are those in all existing and new stormwater discharges within the permit area (as defined in the 2004 MS4 permits) assuming full development with the controls that existed in 2004.

All of the MS4 co-permittees have implemented substantial stormwater management programs since 1995. The program elements included in the SWMPs have reduced loads originally permitted in 1995 in two ways: 1) through implementation of new development and redevelopment stormwater standards, and 2) through implementation of program elements that reduced loads from existing sources, including public education and involvement, operations and maintenance of both the storm drain system and roadways,

Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area

July 2005

Page 9 of 22

industrial/commercial controls, illicit discharge elimination, construction site erosion control standards, structural retrofit controls, and water quality critical lands preservation and restoration.

Conclusions specific to each MS4 permit are as follows:

- *City of Portland, Multnomah County, Port of Portland:* Although the Portland permit area has increased by approximately four percent since 1995, it is likely that when all of the program implementation actions that have occurred since the issuance of the 1995 permit are considered as a whole, the pollutant loads associated with discharges permitted in 2004 are likely less than the pollutant loads associated with discharges permitted in 1995.
- *City of Gresham, City of Fairview, Multnomah County:* The 2004 renewal permit area remained the same as the 1995 permitted area. In combination with the load reductions afforded through program implementation measures, the pollutant loads associated with discharges permitted in 2004 are less than the pollutant loads associated with discharges permitted in 1995.
- *Clackamas County, Storm Sewer Service Districts, and Incorporated Cities within the County:* Although the Clackamas permit area has increased by approximately ten percent since 1995, it is likely that when all of the program implementation actions, especially the treatment and detention requirements placed on new development and the extensive list of structural retrofit BMPs that have occurred since the issuance of the 1995 permit, are considered as a whole the pollutant loads associated with discharges permitted in 2004 are likely to be less than the pollutant loads associated with discharges permitted in 1995.
- *Clean Water Services:* *As there has been no increase in permitted area, in combination with the load reductions afforded through program implementation measures within the permit area, the pollutant loads associated with discharges permitted in 2004 are less than the pollutant loads associated with discharges permitted in 1995.*

ATTACHMENT 1
SUMMARY OF STORMWATER BEST MANAGEMENT PRACTICES THAT WERE
IMPLEMENTED PURSUANT TO THE 1995 PERMIT

Table A-1: City of Portland, Multnomah County, Port of Portland Summary of Stormwater Best Management Practices (BMPs) that were implemented pursuant to the 1995 Permit

BMP General Category	New or Improved BMPs Pursuant to the 1995 MS4 Permit³
Public Involvement and Education	Improved and expanded education and outreach programs, including Clean Rivers Education programs (for K-12 and general public); developed educational programs and public tours on stormwater solutions; developed and expanded Community Watershed Stewardship Grant program, offering up to \$5K for community-based enhancement programs (currently ~\$55K available annually). Developed an EcoBiz program to certify and recognize environmentally friendly automotive businesses in coordination with the regional Pollution Prevention Outreach group. Participated in and helped expand participation in the Regional Coalition for Clean Rivers and Streams for regional coordination of stormwater education; formed and coordinated a volunteer public technical advisory committee (the Stormwater Advisory Committee) to guide the city on stormwater policy issues; installed “dump no waste” storm drain decals adjacent to high priority Port of Portland catch basins as part of the Port’s public outreach campaign to prevent stormwater pollution stormwater educational folders and stickers developed by the Port for Columbia Slough Watershed Council’s “Slough School.”
Operation and Maintenance of the Storm System	Conducted an inventory and assessment of stormwater management facilities and operations and maintenance activities; completed a stormwater facilities risk assessment and potential pollution general assessment; began work on a Stormwater Facilities Maintenance Plan that will enhance performance of the MS4. New and expanded work by the Port included development and implementation of specific stormwater maintenance practices relevant to Port and tenant operations and installation of catch basin filters in high priority industrial and commercial storm drains.
Operation and Maintenance of Roadways	Reviewed and evaluated Operations and Maintenance (O&M) activities in public rights-of-way and developed an implementation plan to test improvements to minimize pollutant discharges; adopted Oregon Department of Transportation road maintenance water quality BMP guidance for use in O&M activities.
Industrial/Commercial Controls	In 2000, entered into a Memorandum of Agreement with DEQ to implement an Industrial Stormwater Permit program within city boundaries to administer 1200COLS and 1200Z permits as DEQ’s authorized representative, including direct dischargers to waterways. The program also performs inspections, monitoring and outreach to industrial and commercial properties, providing

³ Co-Permittees coordinate MS4 programs and activities through Intergovernmental Agreements (IGAs) and regular coordination meetings. More information on BMPs can be found in the annual compliance reports, which are available online at <http://www.portlandonline.com/bes/index.cfm?c=37485> and in the DEQ permit file number 108015.

Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area

July 22, 2005

Page ii of Attachments

BMP General Category	New or Improved BMPs Pursuant to the 1995 MS4 Permit³
	pollution prevention education and technical assistance to reduce pollutant discharges. The Port of Portland implemented a pesticide program, including a Technical Guidance Document and an Integrated Pest Management and Work Schedules Program for Port-owned mitigation sites in order to minimize pesticide application and control non-native species.
Illicit Discharges Elimination	Of the 19 non-stormwater discharges identified in the 1995 permit, 16 have been evaluated and policies and processes changed where appropriate; the 2004 permit added an additional 5 discharge types, one of which has already been evaluated. The remaining 7 discharges are currently under evaluation; developed and chaired a Regional Spill Response Committee to address response and coordination at a regional level; implemented a Spill Response Hotline; established an Illicit Discharge Elimination Program, including an outfall prioritization plan, dry weather monitoring and enforcement authority.
Water Quality Standards for New Development and Re-Development	Authorized the Stormwater Management Manual (SWMM) in 1999, which implemented stormwater standards for all new development and redeveloped projects that create over 500 sq. ft. of impervious area. Revisions in 2000, 2002 and 2004 refined and improved the SWMM with emphasis on reducing effective impervious area, using vegetated facilities and providing greater groundwater protection. Since SWMM adoption, over 2,300 stormwater facilities have been constructed on private property. Various Bureaus provide technical assistance, grants and other incentives for retrofits and exceeding SWMM standards (such as the Office of Sustainable Development's Green Building Programs and BES's Sustainable Stormwater Management Program).
Erosion Control Standards for Construction	Established citywide erosion control code (Title 10) and revised the Erosion Control Manual to reflect NPDES MS4 permit conditions, establishing a comprehensive citywide erosion and construction site pollutant control program erosion and sediment control requirements for construction are incorporated into all Port of Portland construction project specifications.
Structural Controls	Completed a Public Facilities Plan, which provides the framework for prioritizing and implementing new and retrofitted MS4 projects; constructed public stormwater pollution reduction facilities (PRFs), including Russell Pond Wetland, Water Pollution Control Laboratory Pond, Willamette inflow control projects, a Johnson Creek PRF (SE 45 th Ave.) and Columbia Slough PRFs (138 th Ave., 148 th Ave., Whitaker Ponds, Buffalo Slough, Wapato Wetland, Ramsey Lake Wetland); developed design standards and implemented pilot projects to manage stormwater from public streets using porous pavement, vegetated planters and other Green Street approaches; received \$1.6 million EPA grant for innovative stormwater projects., including implementation of Green Street projects and school campus downspout retrofits. As Multnomah County bridges undergo retrofits and upgrades, stormwater management controls are incorporated into design;

Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the
Portland Metropolitan Area

July 22, 2005

Page iii of Attachments

BMP General Category	New or Improved BMPs Pursuant to the 1995 MS4 Permit³
	currently stormwater runoff from the Burnside and the Broadway Bridges is managed with water quality devices.
Other	Implemented a Willing Seller program for water quality critical lands acquisition; in conjunction with the Metro open space program, purchased 2,422 acres of land from willing sellers; revised tree and landscaping code for consistency to integrate landscape-based stormwater management approaches for parking lots developed code amendment proposals to improve enforcement of environmental violations and facilitate permit process for resource enhancement projects; implemented the Watershed Revegetation Program for long-term restoration and revegetation of natural areas; planted over 2.5 million trees and shrubs, primarily along waterways and high-resource environmental areas; The Port enhanced 1,500 feet of shoreline along West Hayden Island focusing on non-native vegetation removal and native species revegetation and monitoring. As part of the Toyota redevelopment project at Terminal 4, the Port restored 1,700 feet of riparian area, planted more than 11,000 native trees and shrubs, and designed an integrated stormwater management system. The Port worked with the Multnomah County Drainage District to stabilize and remove invasive plants on over one-half mile of Columbia Slough bank and replant with native vegetation.

Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area

July 22, 2005

Page iv of Attachments

Table A-2: City of Gresham and Co-permittees (City of Fairview and Multnomah County) Summary of Stormwater Best Management Practices (BMPs) that were implemented pursuant to the 1995 Permit

BMP General Category⁴	New or Improved BMPs Since 1995
Public Involvement and Education	<p>There has been a significant increase in public involvement and education regarding stormwater management since 1995. Specific examples include:</p> <p>Slough School Watershed field sites expanded to include five Gresham schools.</p> <p>Four Fish-Friendly Car Wash sites identified throughout Gresham and two high schools certified. Two Car Wash kits available for loan at no charge.</p> <p>Doggie Don't Boxes installed in eight Gresham Park sites.</p> <p>Website Enhancement: Created in 1998. Added content related to individual behavior changes related to home owner practices. Created a native plant information guide for gardening in 2003.</p> <p>County's Adopt-A-Road and Catch basin Marking programs</p> <p>Gresham and County are active participants of the Regional Coalition for Clean Rivers and Streams programs.</p> <p>Fairview provides public education through bi-monthly newsletter, annual report, and active web site. The City also has an active education program with riparian property owners about riparian buffer care, prohibited chemicals, and native plantings.</p>
Operation and Maintenance of the Storm System	<p>Since 1995, there have been steady improvements to the O&M activities, frequencies, and effectiveness.</p> <p>Decant Facility Constructed in 1997 to control releases from City-owned vehicles and equipment.</p> <p>Catch Basin Cleaning: Current City inventory 5,200. Annual cleaning since 1981. Amount of debris collected has increased due to increased inventory and improved cleaning methodology, i.e., shovel vs. Vactor machine. Change in methodology has lead to over 51% increase in debris captured.</p> <p>Sedimentation Manhole Cleaning: Current inventory 133. Began systematic inventory and cleaning in 2004. This activity is new since 1995, as no sedimentation manholes existed prior to 1995.</p> <p>Storm Sewer Line Cleaning: Current inventory 210 miles. Currently in a 10-year cleaning cycle. The miles of sewer line cleaning has increased by 66% since 1995.</p> <p>Storm Detention Pipe Cleaning/Control Release Manhole Cleaning: Current inventory 121 underground detention pipes. This activity represents new BMP, as no detention facilities existed prior to 1995.</p> <p>"Black Box" Maintenance: Annual inspection of all facilities. Cartridges replaced as needed. This activity is new since 1995, as no proprietary facilities existed prior to 1995.</p> <p>County low impact Ditch Cleaning by Vactor.</p> <p>Catch basins on County arterials cleaned twice a year.</p> <p>Fairview changed ditch and channel maintenance method to</p>

⁴ Details to the information included in this table can be found in annual reports submitted to DEQ in compliance with NPDES Stormwater Discharge Permit.

Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area

July 22, 2005

Page v of Attachments

BMP General Category⁴	New or Improved BMPs Since 1995
	<p>incorporate less intrusive practices like less chemical use; use of low lying grass seed; and cleaning the inverts with an auger and reseeded upon completion.</p> <p>Fairview has a dedicated FTE to maintain City parks, wetland areas, and stormwater features.</p>
Operation and Maintenance of Roadways	<p>Since 1995, there has been over 23% increase in the miles of street swept on an annual basis. Between the County and City, in most areas of the city, all streets are swept at least 9 times per year. In addition, over 60% of all de-icing material are collected and recycled after hazard weather usage. No salt has been used on the roadways within the Permit area since 1999.</p>
Industrial/Commercial Controls	<p>In Gresham, DEQ issues and administers industrial permits. The City's role has been to coordinate and cooperate with these activities. Since 1995, the City has implemented the GREAT Business Program to target businesses with potential environmental impacts and recommend "green" practices. Since the inception, over 200 businesses have been audited and over 70 have been certified as "green."</p> <p>Business License Review: began reviewing all new business permit applications in 2002.</p> <p>Gresham and Fairview implement Wellhead Protection Program aimed at eliminating pollutants discharge to surface & ground water from industrial users.</p>
Illicit Discharges Elimination	<p>Prior to 1995, this activity was essentially compliant-based. Since 1995, Gresham uses TV inspections and other "investigative" methods to identify and eliminate illicit discharges. In addition, legal authority to inspect was improved in 1996 and additional code enforcement staff was hired in 1997. County Right-of-Way inspectors monitor catch basins for illicit connections.</p> <p>Gresham and Fairview have appropriate ordinance that prohibits illicit discharges, requires compliance, and allows the City to carry out monitoring when necessary.</p>
Water Quality Standards for New Development and Re-Development	<p>This is a new BMP since 1995, as no stormwater quality standards existed prior to 1995. New standards were adopted in 1999 to address water quality component with new and development re-development projects. The City also actively began collecting maintenance agreements for privately-owned water quality facilities in 2000. Since 1995, approximately 250 acres of new development projects has constructed on-site water quality BMPs.</p> <p>The County continues to require stormwater to be maintained on site for the unincorporated area of Interlachen.</p> <p>Fairview's Planning and Public Works Departments work closely to ensure proper plan reviews to minimize impacts to the stormwater system.</p>
Erosion Control Standards for Construction	<p>The original EPSC Manual has been modified and enhanced since it was originally adopted in 1991. Standards and inspections protocol has been improved to include new technology and practices.</p> <p>Additional inspection staff were hired in 1996. Stormwater Division coordinates with DEQ to review all 1200-C plans. City's public works inspector visits all development projects at least once/day during public infrastructure construction activities. In addition, Stormwater Division staff are actively involved with enforcement activities.</p>

Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area

July 22, 2005

Page vi of Attachments

BMP General Category⁴	New or Improved BMPs Since 1995
	<p>In 2004, County revised its grading and erosion control standards for the unincorporated area of Interlachen. In addition to coordination with 1200-C permits, Fairview works closely with contractors to ensure BMPs are adequate and effective during rainy season.</p>
Structural Controls	<p>This is a new BMP since 1995. Regional Fairview Creek Constructed Wetland: Completion date – fall of 2005, approximate drainage area is 900 acres. Kelly Creek Regional Detention Pond: completed in 1998, approximate drainage area is 800 acres. Constructed Wetland and Detention facility for Roadway Drainage: Halsey Ave and another at 207th Ave., each treating approx. 11 acres of impervious surface.</p>
Other	<p>These are examples of “other” activities new since 1995: Fujitsu Wetland Mitigation – created approximately 4.5 acres of wetland adjacent of the Fairview Creek Gresham Woods Restoration – multi-year wetlands/wet meadow restoration project in 55 acres of open space adjacent to the Johnson Creek High School Stewardship Program – 3 sites totaling about 8.5 acres to replace with native vegetations Incorporated IPM in 2001 for all City activities. Yamhill Green Street Project in 2004 – converted to pervious pavement, approximately 8,000 sq ft of neighborhood collector street Division and Stark Street Project – used pervious pavers on sidewalk, approximately (1 mile) Master Plans: updated each Gresham Watershed master plan during the years of 2002-2005. New Communities Planning: Stormwater management for Springwater and Pleasant Valley areas will utilize green sustainable development practices.</p>

Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area

July 22, 2005

Page vii of Attachments

Table A-3: Clackamas County and Co-Permittees' Summary of Stormwater Best Management Practices (BMPs) that were implemented pursuant to the 1995 Permit

BMP General Category	New or Improved BMPs Since 1995
Public Involvement and Education	<p>Programs that motivate citizens to prevent or reduce storm sewer system pollutant loading are provided in the following formats:</p> <ul style="list-style-type: none"> • Websites • Brochures • Newsletter Articles • Face-to-face in public meetings, fairs, classrooms, etc.
Operation and Maintenance of the Storm System	<p>Two Primary Elements:</p> <ul style="list-style-type: none"> • Solids are regularly vacuumed from the piped storm sewer system • Vegetation, garbage and sediment is regularly removed from ditches, stormwater ponds and other above-ground storm sewer system segments
Operation and Maintenance of Roadways	<p>Three Primary Elements:</p> <ul style="list-style-type: none"> • Streets are swept • Roadside vegetation is controlled through mowing to minimize herbicide use • Ice is controlled with low impact materials, such as sand and calcium magnesium acetate, to minimize or avoid the use of salt.
Industrial/Commercial Controls	<p>This category pertains to: 1) municipal landfills, 2) hazardous waste treatment, disposal and recovery facilities, 3) industrial facilities that are subject to section 313 of SARA title III, and 4) certain other industrial facilities. The MS4 permit holders take reasonable measures which control, minimize, or prevent stormwater pollution from these sites. For example, if a MS4 permit holder believes that a facility may need a stormwater pollution control permit from DEQ, the facility and DEQ are provided with formal notification. As another example, if a MS4 permit holder determines that a facility contributes a material load of pollutants to the MS4, the implementation of control measures is overseen by the MS4 permit holder. In these instances, if the discharger's initial attempts to improve stormwater quality do not produce the required improvement, the MS4 permit holder continues to provide guidance, technical assistance, and if necessary, enforcement action until the facility's stormwater quality improves to the required level.</p>
Illicit Discharges Elimination	<p>Citizens are encouraged to report these to the MS4 permit holder. Illicit discharges and spills are addressed and, if necessary, controlled by the MS4 permit holder. The local fire dept. plays a lead role in many hazardous materials incidents. Dry-weather storm sewer outfall inspections, which can proactively identify these discharges, are conducted at certain outfalls.</p>
Water Quality Standards for New Development and Re-Development	<p>The MS4 permit holders have adopted and implemented Standards for new development and redevelopment to prevent or reduce storm sewer system pollutant loading. These standards include, but are not limited to, stormwater volume reduction to minimize runoff, stormwater treatment to remove pollutants from stormwater, and site design standards to prevent stormwater from contacting areas where it may become polluted.</p>
Erosion Control Standards for	<p>The MS4 permit holders have adopted and enforce erosion control</p>

Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area

July 22, 2005

Page viii of Attachments

BMP General Category	New or Improved BMPs Since 1995
Construction	requirements. Regular inspections of construction sites are conducted by the MS4 permit holders. In general, stormwater pollution is prevented by requiring that stormwater be directed away from contact with disturbed soil through good site design. Structural controls, including but not limited to silt fencing and biobags, are also required to be deployed to remove sediment from stormwater. The controls are required to be maintained during construction to ensure effectiveness. Sediment on roadways is also required to be removed. Sediment that is captured by the storm sewer system must be removed and properly disposed of.
Structural Controls	Since 1995 there has been a significant increase in a) the number of structural controls (swales, man-made stormwater ponds, etc.) that have been installed and b) in the acreage that is served by these devices within the MS4 permit holders' service areas.
Other	Some riparian areas have been enhanced. Other healthy riparian areas which do not require enhancement have been protected in separate land tracts or in conservation easements. Metro Title III, which requires riparian area protection in the MS4 permit holders' service areas, is implemented for wetlands, natural ponds, creeks, springs, and rivers.

Note #1: The information provided in the table above provides a general summary of information included in the various annual reports submitted to the Department of Environmental Quality by each co-permittee to the Clackamas County MS4 NPDES permit.

Note #2: The information is a general summary of the BMPs implemented within Clackamas County pursuant to the 1995 MS4 NPDES Permit. However, the BMPs implemented and the level of implementation varies from co-permittee to co-permittee. For information specific to a particular co-permittee, please refer to that co-permittee's Storm Water Management Plan and Annual Reports.

Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area

July 22, 2005

Page ix of Attachments

Table A-4: Clean Water Services' Summary of Stormwater Best Management Practices (BMPs) that were implemented pursuant to the 1995 Permit

BMP General Category	New or Improved BMPs Since 1995
Public Involvement and Education	<p>There has been a significant increase in public involvement and education regarding stormwater management since 1995. In 1995 the program primarily focused on the relationship between littering and water quality, i.e., "adopt-a-highway" type programs which promoted urban "good housekeeping".</p> <p>Current public education and involvement programs are significantly more complex and broader in focus. Through the Coalition for Clean Rivers and Streams, the metro area MS4 permittee's collectively leverage public awareness dollars (\$60,000) to inform the public on the use of herbicides, pesticides, and fertilizers through a focused transit and print advertising campaign. Through the use of the District's website, which receives approximately 13,000 hits per month, distributed 7300 <i>Gardening with Native Plants</i> posters. Distributed 354,000 billing inserts during the 2004 which focused on personal behaviors to reduce impacts to stormwater quality and quantity, such as pet waste management, leaf pick-up, car washing and maintenance, etc.</p>
Operation and Maintenance of the Storm System	<p>Since 1995, there was a 125% increase in the number of catch basins cleaned on an annual basis and a 25.8 % increase in miles of storm sewer lines cleaned on an annual basis. In 1995, the O&M of the storm system varied from jurisdiction to jurisdiction. Currently there are performance measures/targets established for each jurisdiction.</p>
Operation and Maintenance of Roadways	<p>Since 1995, there was a 65% increase in the miles of street swept on an annual basis. In 1995, most communities swept arterial streets monthly or every two months (average frequency was 10.3 times per year). Currently the average mile-weighted frequency is 22.4 times per year.</p>
Industrial/Commercial Controls	<p>In 1995, through the District's industrial pretreatment/source control program, staff provided "advice" to commercial and industrial sites regarding stormwater management. Currently, the District oversees the 1200-Z industrial stormwater permit program in our service area which has significantly increased the monitoring, compliance and enforcement activities for this program. We have over 150 industrial stormwater dischargers currently under permits.</p>
Illicit Discharges Elimination	<p>In 1995, there was only a minimal program which was primarily a "react-to-a-complaint". Currently through TV inspections, greater education and outreach, and the 1200-Z program, the District has significantly increased the detection and elimination of illicit discharges.</p>
Water Quality Standards for New Development and Re-Development	<p>In 1991, the District revised its Design and Construction Standards to include requirements for construction of storm water quality and quantity facilities for all new developments. Twenty-five foot vegetated buffers on streams, creeks and wetlands were also implemented. In 2000, the buffer widths were increased to a maximum width of 200 feet. In March, 2004, the District revised its Design and Construction Standards which included: a definition for redevelopment; requirements to pretreat stormwater from redevelopment; increased buffer widths; improved guidance with invasive species control and landscaping; additional clarifications to prohibited activities. The 2004 revisions also doubled buffer restoration and planting densities.</p>

Qualitative Assessment of the Change in Pollutant Loads Associated with MS4 Discharges in the Portland Metropolitan Area

July 22, 2005

Page x of Attachments

BMP General Category	New or Improved BMPs Since 1995
Erosion Control Standards for Construction	The District has had an erosion control program in place since 1991, in part due to the implementation of the 1988 Tualatin TMDL. The District administers and enforces the 1200-C general storm water permit program within our jurisdiction which has resulted in increased oversight and enforcement of regulations. In 2002, the 1200-C permit threshold was reduced from 5 acres to 1 acre, effectively doubling the number of sites covered under both a District and 1200-C permit.
Structural Controls	Since 1995 there has been a significant increase in the structural controls (swales, ponds, etc.) installed and acreage served within the District's service area. There are approximately 12 times as many structural BMPs installed currently as compared to 1993. The area served by these structural BMPs was increase about 10 fold.
Other	In 1995, the District had no program relating to enhancement of riparian areas. Currently the District is actively pursuing riparian area protection and enhancement. Between 2001 and 2004, the District enhanced 5.5 miles of streams.