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Permit Evaluation Report for

National Pollutant Discharge Elimination System Municipal Separate Storm Sewer Systems Phase II General Permit

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Final Action

Issuance of National Pollutant Discharge Elimination System general permit for stormwater discharges from small municipal separate storm sewer systems to surface waters of the state. Additionally, on the effective date DEQ automatically transferred coverage for the 19 entities that were previously covered under MS4 Phase II individual permits to this general permit.

Permit Category

MS4 Phase II General Permit, per Oregon Administrative Rule 340-045-0027, Category III.

Activities Covered Under the Permit

The permit covers small regulated MS4s throughout Oregon that discharge stormwater to rivers, streams and other surface waters of the state. It includes 19 small MS4s currently registered under expired MS4 Phase II individual permits, and seven New Registrants, which are required to apply based on the latest Decennial Census.

Source Location

Statewide

Coverage and Eligibility

The effective date of the permit is March 1, 2019. This general permit is issued in accordance with Oregon Administrative Rule 340-045-0033 for activities that involve similar types of operations, similar types of wastes and similar monitoring conditions. The permit covers small municipal separate storm sewer system discharges that have a potential to discharge pollutants to waters of the state, or conveyance systems that eventually discharge to waters of the state. All permit registrants must submit a renewal application 180 days before this permit's expiration date to maintain coverage under this permit.

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Public Notice Summary

DEQ took public comments on the draft permit from November 27, 2017 to February 20, 2018, and hosted a public hearing on January 26, 2018. DEQ received 31 unique written letters and 2 oral comments on the draft permit.

DEQ made minor changes throughout the permit and this document's text for clarity, grammar and formatting. Additionally, changes were also made to ensure that the Permit Evaluation Report is consistent with the final permit.

Summary of Key Changes

This permit will be Oregon's first MS4 Phase II general permit issued after EPA's revision to the Phase II Stormwater Rule in 2016. The permit utilizes the Comprehensive General Permit Approach, and is drafted to satisfy the MS4 Permit Standard or the requirement "to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the water quality requirements of the Clean Water Act."

DEQ's goal in the final permit was to write clear, specific and measurable conditions aimed at consistent implementation throughout the state. The following are the key changes to the proposed permit:

- **Requirement to Reduce the Discharge of Pollutants** - Based on comments received DEQ added the following condition to the permit:
Pursuant to 40 CFR §122.34(a), the permit registrant must at a minimum develop, implement and enforce a Stormwater Management Program (SWMP) designed to reduce pollutants from the MS4 to the maximum extent practicable, to protect water quality and to satisfy the appropriate water quality requirement of the Clean Water Act. This permit identifies the management practices, control techniques and system, and design and engineering methods necessary to meet this standard.
- **Water Quality Standards** - "Causing or contributing", based on comments, DEQ modified permit condition to include the underlined text:
If the permit registrant complies with all the terms and conditions of this permit, it is presumed that the permit registrant is not causing or contributing to an excursion above the applicable water quality standards as established in OAR 340-041.
- **Illicit Discharge Detection and Elimination** - Based on comments received and because other permit conditions ensure appropriate attention to illicit discharges into the MS4s, DEQ removed the septic system investigation and on-site investigation requirements from the permit.
- **Illicit Discharge Detection and Elimination** - Based on comments, DEQ removed the System Evaluation for Chronic Illicit Discharges and replaced this section with a Dry Weather Screening Program. This modification aligns with the existing MS4 Phase I permits.
- **Construction Site Runoff Control** - The 5,000-square-foot threshold was modified to:
7,000 square feet or more for Large Communities
10,890 square feet (one quarter of an acre) or more for Small Communities
- **Post-Construction Site Runoff for New Development and Redevelopment** - For counties the 5,000-square-foot threshold was modified to (for their coverage area that is outside a urban growth boundary):
For counties, through ordinance or other regulatory mechanism, to the extent allowable under state law, the permit registrant must require the following for project sites discharging stormwater to the MS4 that create or replace 10,890 square feet (a quarter of an acre) or more of new impervious surface area.

1.0 Introduction

This Permit Evaluation Report explains DEQ's rationale for the permit conditions in the MS4 Phase II General Permit.

DEQ issued this NPDES general permit for stormwater discharges from small regulated MS4s to waters of the state. In order to reduce pollutants from urban runoff entering waters, the permit establishes conditions, prohibitions, and management practices applicable to discharges of stormwater from permit registrants. Specifically, operators of regulated small MS4s must implement a comprehensive stormwater management program to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, protect water quality and to satisfy the appropriate water quality requirements of the Clean Water Act.

The MS4 permit program is an important element of DEQ's water quality program. The requirements are based on Section 402(p) of the Clean Water Act, 33.U.S.C. §1342(p), and the U.S. Environmental Protection Agency's regulations permitting municipal stormwater discharges (40 CFR § 122.28, 122.30-35, and 123.35; see also 64 FR 68722 [Dec. 8, 1999] and 81 FR 89320 [Dec. 9, 2016]).

This permit covers all existing and new stormwater discharges from small regulated MS4s located within Urbanized Areas of Oregon as defined by the latest Decennial Census.¹

Definition of a municipal separate storm sewer system or MS4² means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of the Clean Water Act (CWA) that discharges to waters of the United States;*
- (ii) Designed or used for collecting or conveying storm water;*
- (iii) Which is not a combined sewer; and*
- (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR § 122.2.*

Small MS4 is defined in 40 CFR § 122.26(b)(16), a small MS4 is a municipal separate storm sewer that is not defined as a medium or large MS4.

Large MS4 is defined in 40 CFR § 122.26(b)(4).

Medium MS4 is defined in 40 CFR § 122.26(b)(7).

Definition of Urbanized Area or UA - The Census Bureau's urban-rural classification is fundamentally a delineation of geographical areas, identifying both individual urban areas and the rural areas of the nation. The Census Bureau's urban areas represent densely developed territory, and encompass residential, commercial, and other non-residential urban land uses.³

¹ The Decennial Census, a census taken in a year ending in "0"; such as 1990, 2000, 2010, is conducted by the U.S. Bureau of Census

² Municipal Separate Storm Sewer System (MS4) is defined in 40 CFR § 122.26(b)

³ From 2010 Census Urban and Rural Classification and Urban Area Criteria, United States Census Bureau:
<https://www.census.gov/geo/reference/ua/urban-rural-2010.html>

1.1 Stakeholder Engagement

Beginning in 2013 DEQ engaged interested stakeholders regarding appropriate performance standards and permit requirements. This stakeholder engagement occurred in several venues: seven MS4 Advisory Committee meetings, two facilitated listening sessions and multiple informal meetings. The goal of this outreach was to discuss the general permit approach and proposed permit conditions to gain insight from the various stakeholders. The final permit incorporates the concerns and recommendations of several of the stakeholders when possible.

1.2 Regulatory Overview

The Clean Water Act, Section 402(p), 33 U.S.C. § 1342(p) and the NPDES stormwater regulations establish the permit requirements for regulated MS4 discharges. Section 402(p)(3)(B) of the CWA, 33 U.S.C. §1342(p)(3)(B) of the Code of Laws for the United States of America requires a NPDES permit for MS4 discharges to effectively prohibit non-precipitation related flows from entering the MS4, and require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and system design and engineering methods, and such other provisions determined to be appropriate by the NPDES permitting authority.

Stormwater is surface runoff from rain and snowmelt or the portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, channels, or pipes into a defined surface water channel or a constructed infiltration facility. Urbanization or urban development has an impact on receiving streams by altering natural hydraulic conditions and generating an increase concentration of pollutants to a receiving stream from activities such as paving, decreased impervious areas, and increased peak discharges (compared to predevelopment levels). These pollutants can negatively impact water quality. Urban stormwater runoff is often contributing factor where there is a water quality standard impairment in a particular waterbody.

In 1990, EPA developed the first phase or Phase I of federal stormwater regulations as directed by the CWA. These regulations established the NPDES permit application and related requirements for discharges from large MS4s and medium MS4s. The Phase I regulation identified the large and medium MS4s nationally based on the 1990 Census population. Based on the 1990 Census, the Phase I stormwater regulations automatically designated 35 municipalities, two special districts, and the Oregon Department of Transportation.⁴

*In general, a **municipal separate storm sewer** includes any publicly owned conveyance or system of conveyances that discharges to waters of the United States, is designed or used for collecting and conveying storm water, is not a combined sewer, and is not part of a publicly owned treatment works. A **municipal separate storm sewer system**, or MS4, includes roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and/or storm drains.⁵*

In 1999, EPA developed the “Phase II” stormwater regulations, and designated additional small MS4s as needing NPDES permits. Regulated small MS4s include any MS4 discharge not already covered by Phase I that is located (partially or wholly) within an Urbanized Area as defined by the latest Decennial Census. DEQ issued 15 individual MS4 Phase II permits in 2007.

The Phase II stormwater regulations require that permits for small MS4 discharges must include terms and conditions to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.⁶ The permit registrant

⁴ DEQ first issued Phase I permit was to the Portland Group in 1995. In 2000 ODOT elected to become a sole permittee rather than share responsibility as a co-permittee with several of the other Phase I communities.

⁵ 40 CFR § 122.26(b); 122.34(a); and *NPDES Storm Water Phase I Regulations Final Rule* (55 FR 47990, November 16, 1990).

⁶ CWA Section 402(p)(3); 40 CFR §§ 122.34(a); *NPDES Municipal Separate Storm Sewer System General Permit Remand, Proposed Rule* (81 FR 415, January 6, 2016).

must control pollutants in their MS4 discharges to the maximum extent practicable by addressing the six “minimum control measures, (i.e., public education and outreach, public participation and involvement, illicit discharge detection and elimination, construction site runoff control, post construction runoff control, and pollution prevention and good housekeeping).

In 2016, EPA revised the Phase II regulations in response to a 2003 court case. These revisions are referred to as the *Small MS4 General Permit Remand Rule*, or the Remand Rule. A summary of the findings are provided below:⁷

*...the court determined that the regulations for providing coverage under small MS4 general permits did not provide for adequate public notice and opportunity to request a hearing. Additionally, the court found that EPA failed to require permitting authority review of the best management practices (BMPs) to be used at a particular MS4 to ensure that the small MS4 permittee reduces pollutants in the discharge from their systems to the “maximum extent practicable” (MEP), the standard established by the Clean Water Act (CWA) for such permits. The final rule establishes two alternative approaches a permitting authority can use to issue National Pollutant Discharge Elimination (NPDES) general permits for small MS4s and meet the requirements of the court remand. The **first option is to establish all necessary permit terms and conditions to require the MS4 operator to reduce the discharge of pollutants from its MS4 to the MEP, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act (“MS4 permit standard”) upfront in one comprehensive permit. The second option allows the permitting authority to establish the necessary permit terms and conditions in two steps: A first step to issue a base general permit that contains terms and conditions applicable to all small MS4s covered by the permit and a second step to establish necessary permit terms and conditions for individual MS4s that are not in the base general permit. Public notice and comment and opportunity to request a hearing would be necessary for both steps of this two-step general permit. This final rule does not establish any new substantive requirements for small MS4 permits.**⁸*

The Remand Rule establishes the compliance standard for the MS4 Phase II general permit, known as the MS4 Permit Standard. The MS4 permit standard is the requirement “to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the water quality requirements of the Clean Water Act.”⁹ The rule revisions outline procedures regarding how the NPDES permitting authority must establish the required permit conditions in a small MS4 general permit, and how small MS4s obtain coverage under an available general permit. In addition, the rule revisions clarify that the permit requirements established by the permitting authority must be expressed in clear, specific, and measurable terms. The rule revisions also require permitting authorities to determine necessary requirements to meet the MS4 Permit Standard with each new permit based on factors such as receiving water quality, compliance history, technological developments in stormwater control measures, and other relevant factors. The ultimate goal is to make incremental improvements until compliance with water quality standards are attained.

DEQ determined that the Comprehensive General Permit Approach (the first option described in the Remand Rule) is appropriate for Oregon, therefore DEQ has included all the terms and conditions in the permit, which is fully consistent with the federal Phase II stormwater regulatory requirements and the recent Remand Rule. The permit establishes all the necessary permit terms and conditions required to reduce the discharge of pollutants from the permit registrant’s MS4 to protect water quality and establishes the MS4 Permit Standard. In some cases,

⁷ These revisions are referred to as the Small MS4 General Permit Remand Rule, or the “Remand Rule”. Various groups challenged EPA’s 1999 Phase II storm water rule in federal courts, resulting in the rule’s partial remand back to EPA in *Environmental Defense Center v. U.S. Environmental Protection Agency*, 344 F.3d. 832 (9th Cir. 2003). Specifically, the U.S. Court of Appeals for the Ninth Circuit remanded the Phase II rule’s provisions for small MS4 NPDES general permits because they lacked procedures for permitting authority review and public notice, and for the opportunity to request, a hearing on NOIs submitted under general MS4 permits.

⁸ *NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule* (81 FR 89320, Dec. 9, 2016).

⁹ *NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule* (81 FR 89320, Dec. 9, 2016).

this may mean that permit conditions are expressed in more specific terms than in the previous MS4 individual permits. These modifications are necessary to comply with the Remand Rule's requirement to use terms and conditions that are clear, specific, and measurable.

Comprehensive General Permit Approach - Permitting authorities opting to issue Comprehensive General Permits must establish the full set of requirements that are deemed necessary to meet the MS4 permit standard in § 122.34. (See § 122.28(d)(1), which requires that “the Director includes all required permit terms and conditions in the general permit.”) The permit must therefore include terms and conditions that define what is required to meet the MS4 permit standard for the minimum control measures (§ 122.34(b)), additional permit terms and conditions based on an approved total maximum daily load (TMDL) or other appropriate requirements to protect water quality (§ 122.34(c)), and requirements to evaluate and report on compliance with the permit (§ 122.34(d)). As a result, the Comprehensive General Permit is no different than other general permits in that all applicable effluent limitations and other conditions are included within the permit itself, and the NOI [Notice of Intent or Application] is used primarily to determine whether a specific MS4 is eligible and to secure coverage for that MS4 under the permit subject to its limits and conditions.¹⁰

“Clear, Specific, and Measurable” Permit Requirements - the permit requirements must be enforceable, and must provide a set of performance expectations and schedules that are readily understood by the permittee, the public, and the permitting authority alike.¹¹

This permit expresses this as narrative and numeric requirements for each SWMP control measure in the form of specific tasks, BMPs, design requirements, performance requirements, schedules for implementation and maintenance, and/or frequency of required actions.

1.3 Permit History

In 2007, DEQ issued individual NPDES permits to all regulated small MS4s required to obtain coverage based on the 2000 Census. In May 2012, all of these individual permits expired. Each Existing Registrant¹² has submitted a complete permit renewal application prior to their respective permit's expiration date, and, thus, their permit coverage was administratively extended by DEQ, in accordance with OAR 340-045-0040(2) and pursuant to 40 CFR § 122.6.

1.4 NPDES General Permit vs. Individual Permit Approach

Federal regulations¹³ and OAR 340-045-0033 allow DEQ to issue a general permit to regulate discharges from numerous facilities (such as regulated small MS4s) under one NPDES permit when those facilities:

- Involve the same or substantially similar types of operations
- Discharge the same types of wastes
- Require the same effluent limits or operating conditions
- Require the same or similar monitoring requirements

Regulated small MS4s in Oregon represent substantially similar public drainage facilities that discharge stormwater runoff from densely populated urban areas. All small MS4s subject to the MS4 Phase II General Permit are required to implement the same or similar narrative effluent limits and requirements. For

¹⁰ NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016).

¹¹ NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016).

¹² Existing Registrants are those entities that have previously had individual NPDES permit coverage

¹³ 40 CFR § 122.28 and 122.33(b)

administrative efficiency and consistency, DEQ has determined that a general permit is an appropriate mechanism to address the discharges from identified small MS4s.

As previously stated, DEQ (i.e., the permitting authority in Oregon)¹⁴ identified that the Comprehensive General Permit approach described in 40 CFR § 122.28(d)(1) is appropriate for small MS4s in Oregon. This permit establishes the stormwater management control requirements to meet the MS4 Permit Standard.

*The final rule provides permitting authorities with full discretion to choose which option is best suited for its permitting needs and specific circumstances.*¹⁵

This approach only requires one public notice period. The Stormwater Management Program Document, which describes in detail how the permit registrant intends to comply with the required control measures in this permit, is not part of the permit's public notice process.

1.5 Permit Development

DEQ could not simply reissue the same permit conditions for subsequent five-year permit terms without considering whether more progress can or should be made in meeting water quality objectives, especially in areas where the receiving waters are not attaining the applicable water quality standards.¹⁶ Instead of reissuing individual permits for small MS4s, DEQ selected a general permit approach for small MS4s. DEQ developed the permit terms and conditions in the permit to address the MS4 control measure requirements specified in 40 CFR § 122.34. DEQ considered various informational sources and submittals by the Existing Registrants in the selection of the Comprehensive General Permit approach, including following:

- Review of the individual permits MS4 Phase I and II permits in Oregon
- Review of the existing Stormwater Management Program control measures implemented by MS4 Phase I and II permit registrants in Oregon
- Review of Annual Reports submitted by Phase I and II permit registrants
- Review of TMDL requirements and listed impaired pollutants in waterbodies without an established TMDL
- Review of MS4 permits issued by EPA and other states (e.g., Washington, California, Colorado)
- Recommendations from the MS4 advisory committee, listening session meetings, and several informal and formal meetings
- Comments received during the public notice of the MS4 Phase II General (draft permit dated June 7, 2016)

The permit contains the narrative requirements applicable to all small MS4 permit registrants to address the minimum measures required by 40 CFR § 122.34(a) and (b); where the receiving waterbody is subject to a TMDL and/or listed on DEQ's 303(d) list, the permit also includes water quality based requirements for individual MS4 permit registrant, as required by 40 CFR § 122.34(c) and 122.44(d)(1); and the permit also includes evaluation and assessment requirements, as required by 40 CFR § 122.34(d).

1.6 MS4 Permit Standard and Maximum Extent Practicable

In accordance with the Remand Rule, NPDES permits for regulated small MS4s must include terms and conditions to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements under the Clean Water Act. At a minimum, MS4

¹⁴ The NPDES permitting authority must select between two alternative permitting approaches as outlined in 40 CFR § 122.28(d) (referred to as either the "Comprehensive General Permit" or the "Two-Step General Permit"), then include the minimum requirements and procedures associated with the selected approach.

¹⁵ NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016).

¹⁶ NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016), pages 89337-89338.

permit terms and conditions must satisfy the requirements set forth in the federal regulations at 40 CFR § 122.34(a) through (e).¹⁷

Maximum extent practicable (or MEP) is the statutory standard that describes the level of pollutant reduction that small MS4 operators must achieve, and what constitutes maximum extent practicable must continually adapt to current conditions and understanding of BMP effectiveness. Neither the CWA nor the stormwater regulations provide a specific definition of maximum extent practicable. The lack of a detailed definition allows for flexibility in MS4 permitting.

The iterative process of imposing the maximum extent practicable standard over successive permit terms consists of the NPDES permitting authority defining clear, specific, and measurable NPDES permit requirements; permit registrants implementing the required actions as part of a comprehensive program; and the permit registrants and NPDES permitting authority evaluating the effectiveness of best management practices used to date. This iterative permitting process continues, permit term to permit term, until water quality standards are attained.¹⁸

DEQ has defined the required stormwater management control measures, and evaluation and assessment requirements, that small MS4 operator must implement in order to comply with the MS4 Permit Standard in the permit. While maximum extent practicable was considered when establishing permit conditions, the Remand Rule clarifies that the standard that MS4 Phase II permit must establish and meet is the MS4 Permit Standard, not only the maximum extent practicable standard.

*A final change to § 122.34(a) that EPA proposed was to reflect the iterative nature of the MS4 permit standard and require that what is considered adequate to meet the MS4 permit standard, including what constitutes “maximum extent practicable”...*¹⁹

*...permit requirements are needed to reduce pollutants from each permitted small MS4 “to the maximum extent practicable (MEP), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act”*²⁰

1.7 Effluent Limitations

The terms and conditions of MS4 permits are effluent limitations, and may consist of narrative, numeric, and/or other types of requirements. Examples include implementation of specific tasks or practices, best management practice design requirements, performance requirements, adaptive management requirements; schedules for implementation and maintenance, and frequency of actions.

EPA intends that terms and conditions are a type of effluent limitations and that they are interchangeable and both mean permit requirements. As defined in the Clean Water Act, “effluent limitation” means “any restriction established by a State or the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance.” See CWA section 502(11). The Clean Water Act also authorizes inclusion of permit conditions. See CWA section 402(a)(1) and (2). Both “effluent limitations or other limitations” under section 301 of the Act and “any permit or condition thereof” are an enforceable “effluent standard or limitation” under the citizen suit provision, section 505(f) of the Clean Water Act, and the general enforcement provisions, section 309 of the Act. EPA uses these terms interchangeably when referring to actions designed to

¹⁷ NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016).

¹⁸ NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016); Also, MS4 Permit Improvement Guide, April 2010. EPA 833-R-10-001 for EPA’s discussion of MEP

¹⁹ NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016).

²⁰ NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016).

reduce pollutant discharges. For the purposes of this final rule, changing the small MS4 regulations to refer instead to “terms and conditions” is intended to be read as consistent with the meaning of “effluent limitations” in the regulations and CWA.²¹

This permit requires all permit registrants to control pollutants in their MS4 discharges through the development and implementation of a suite of BMPs and other stormwater controls. Implementation of these BMPs, as part of a Stormwater Management Program, is the primary mechanism to achieve the required pollutant reductions. In its broadest sense, a BMP means any type of structural or non-structural control measure or activity undertaken by the permit registrants in the course of implementing its SWMP.²² In order to establish permit terms and conditions that are “clear, specific and measurable,” (consistent with the Remand Rule) the permit describes BMPs and other requirements in more detail than was previously required in the administratively extended MS4 permits.

A permit registrant’s implementation of the SWMP control measures in Schedule A.3 constitutes progress towards reducing or eliminating the pollutants in MS4 discharges that contribute to water quality standards exceedances. However, the control measures in Schedule A.3 alone may be insufficient to fully eliminate the MS4 operator’s contribution to the specific water quality impairment. As a result, in the MS4 Phase II General Permit, where the MS4 discharges into waters of the state that are “impaired” (i.e., not meeting applicable water quality standards), the permit registrant must meet the MS4 Permit Standard by complying with all MS4 Phase II General Permit requirements, including applicable water quality based requirements as directed in Schedule D.

1.8 Antibacksliding Review

The Phase II MS4 General Permit requires permit registrants to control pollutants discharged through their MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. The MS4 Phase II General Permit requires permit registrants to implement a comprehensive SWMP as the primary mechanism to achieve the maximum extent practicable standard required to reduce pollutants in their MS4 discharges.²³

The SWMP requirements in the permit (when compared to DEQ’s previously issued individual permits) reflect DEQ’s decision to identify the “*controls necessary to reduce the discharge of pollutants from the MS4 to the MEP*” within the permit itself. Accordingly, the permit contains clear, specific, and measurable provisions to prescribe the continued implementation of specific tasks, BMPs, BMP design requirements, performance requirements, adaptive management requirements, schedules for implementation, as well as maintenance, and frequency of actions as required minimum control measures that must be met. Although such provisions are expressed differently than the comparable provisions in DEQ’s previously issued individual permits, DEQ has determined that the provisions in this permit are, in all cases, at least as stringent as those established in the previous individual permits.

1.9 Antidegradation Review

Under Oregon’s antidegradation policy found at OAR 340-041-0004, DEQ is required to demonstrate that, when issuing a permit, the discharge will not result in a lowering of water quality from the ambient condition and that it protects existing and designated uses. DEQ is required to make this demonstration as required under Oregon’s Antidegradation Policy for Surface Waters found in OAR 340-041-0004.

²¹ NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016).

²² See 40 CFR § 122.34(a), 40 CFR § 122.44(k), and NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016).

²³ See 40 CFR § 122.44(k).

1.9.1 Protection of Existing and Designated Uses

The stormwater controls required in the MS4 Phase II general permit are expected to result in discharges that will comply with Oregon's water quality standards. Therefore, in waters where existing uses are more sensitive than the uses specifically designated for the waterbody, the permit limits and requirements will protect the more sensitive existing beneficial uses, as well as other designated uses.

1.9.2 Protection of Existing Water Quality

DEQ determined that existing water quality would not be degraded by the issuance of this permit. The stormwater discharges authorized by this permit have been ongoing since the federal regulations requiring an NPDES permit were adopted. This permit is expected to reduce the current level of pollution discharged from small MS4s. DEQ expects the pollution reduction measures implemented by permitted small MS4s to offset any expansion of stormwater conveyances systems and outfalls because of the permit requirement to implement a broad range of pollution reduction measures, including measures to address impacts from new development and significant redevelopment. The permit does not set numeric discharge limits. 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). The goal of the permit is a net reduction in pollutant loadings over the five-year permit term. Over the five-year permit term, the permit registrant will implement and/or enhance an identified range of stormwater management control programs to minimize stormwater pollution discharges from existing residential, commercial, and industrial developments. Therefore, the issuance of this permit will protect and improve existing water quality and is consistent with DEQ's antidegradation policy.

1.9.3 Outstanding Resource Waters

Under the state's antidegradation policy, where high quality waters constitute an outstanding state or national resource, such waters may be classified as Outstanding Resource Waters of Oregon. Currently, the North Fork Smith River and its tributaries and associated wetlands are the only Outstanding Resource Waters of Oregon. In accordance with the policies established for these Outstanding Resource Waters, DEQ will not issue any permit discharging to these waters, except for emergency or restoration purposes.

1.10 Water Quality Limited Waters and Total Maximum Daily Loads

Any waterbody that does not, and/or is not, expected to meet the applicable State water quality standards is described as "impaired" or as a "water quality-limited segment." Section 303(d) of the CWA requires states to identify impaired waterbodies within the state and develop Total Maximum Daily Load management plans for those impaired waterbodies. TMDLs define both waste load allocations (WLAs) for point sources and load allocations (LAs) for non-point sources that specify how much of a particular pollutant can be discharged from both regulated and unregulated sources, respectively, such that the waterbody will again meet state water quality standards. Oregon's 2012 Integrated Report and 303(d) list contains the water quality limited waterbodies with and without a TMDL.²⁴

For MS4 discharges to waterbodies subject to a TMDL and/or listed on DEQ's 303(d) list, the permit registrant must comply with the more stringent requirements in the *Special Conditions in Schedule D* in accordance with 40 CFR § 122.34(e)(1) and 122.44(d)(1)(vii)(A)-(B).

1.11 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 DEQ broad authority to impose permit requirements needed to prevent,

²⁴ Oregon DEQ's 2012 Integrated Report is available online at: <http://www.oregon.gov/deq/wq/Pages/2012-Integrated-Report.aspx>

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. At a minimum, NPDES permits for regulated MS4s must require the operator to develop, implement, and enforce a SWMP designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements under the Clean Water Act. The SWMP must include, at a minimum, the stormwater control measures set forth in the federal regulations at 40 CFR § 122.26(d)(2)(iv) and 122.34(a) and (b).

2.0 Permit Coverage and Exclusions

This section of the permit identifies the permit registrant, receiving streams, Waste Load Allocations or Load Allocations, if applicable, sources covered, and permitted activities.

2.1 Cover Page

The cover page provides information about the permit registrant, description of the stormwater eligible for coverage, major receiving stream information, permit approval authority, and a description of permitted activities. As described, the permit covers existing and new discharges of stormwater from the MS4. The permit does not cover any stormwater discharges to underground injection control systems. Discharges to underground injection control systems are regulated under a separate set of rules derived from the federal Safe Drinking Water Act. With the exception of the allowable non-stormwater discharges identified, the permit prohibits all non-stormwater discharges.

In accordance with state and federal law, NPDES permits will be effective for a fixed term not to exceed five years. This permit will be effective March 1, 2019 and expire on February 29, 2024

2.1.1 Receiving Water Information

The cover page also includes information about the receiving waters to which the permit registrant's MS4 discharges stormwater. In addition, a reference is made to the TMDL and Waste Load Allocations (WLA) or Load Allocations (LA) for urban stormwater in receiving waters within the permit registrant's jurisdiction. This reference is designed to acknowledge the existence of the TMDL as a WLA or LA. The methods by which the permit registrant is required to address TMDL WLAs and other allocations such as LA benchmarks identified for MS4s are described in Schedule D of the permit.

DEQ authorizes municipal stormwater discharges to surface waters of the state from regulated small MS4s owned and/or operated by the permit registrants listed in Applicability and Notification Requirements section of the permit.

Section 301(b)(1)(C) of the Clean Water Act and regulations at 40 CFR § 122.44 require the NPDES permitting authority to develop limitations in permits necessary to meet water quality standards. A state's water quality standards are composed of use classifications, numeric and/or narrative water quality criteria, and an anti-degradation policy. The use classification system designates the beneficial uses for each waterbody, such as drinking water supply, contact recreation, and aquatic life. The numeric and narrative water quality criteria are the amount of any pollutant deemed necessary by the state to support the beneficial use classification of each waterbody. The anti-degradation policy represents a three-tiered approach to maintain and protect various levels of water quality and uses.

2.2 Sources Covered by the Permit

The permit covers small MS4s throughout Oregon that discharge stormwater to rivers, streams and other surface waters. Currently nineteen small MS4s are registered under fourteen separate individual MS4 Phase II permits. Seven New Registrants are required to apply for coverage upon issuance of this permit.

2.3 Permitted Activities

See cover page.

3.0 Applicability and Notification Requirements

This section of the permit describes permit eligibility, coverage area, application and notification procedures, and outlines criteria for obtaining a conditional exclusion from permit coverage.

3.1 Condition 1 – Entities Eligible for Coverage

The MS4 Phase II general permit authorizes stormwater discharges only from small MS4s meeting the definitions at 40 CFR § 122.26(b)(16) and are located in an Urbanized Area as determined by a Decennial Census. This permit also authorizes discharges from small MS4s designated by DEQ as needing a permit, pursuant to 40 CFR § 122.32(a) (2) or 40 CFR § 122.26(f).

On March 26, 2012, the Census Bureau published the final listing of Urbanized Areas based on the 2010 Census.²⁵ An Urbanized Area encompasses a densely settled territory that consists of core census block groups or blocks that have a population of at least 1,000 people per square mile and surrounding census blocks that have an overall density of at least 500 people per square mile or are included to link outlying densely settled territory with a densely settled urban core. In many Urbanized Areas, multiple municipal entities may have responsibilities to obtain NPDES permit coverage. The NPDES regulations require a MS4 Phase II to implement its program, at a minimum, for discharges occurring within the Urbanized Area.

The 2010 Census identified 12 new entities in Oregon that would be required to obtain MS4 Phase II permit coverage. In 2015, DEQ notified the 12 new entities, five entities applied for and received approved permit coverage waivers from DEQ²⁶; the remaining seven entities will be required to apply for coverage under this permit. All previously covered Phase II MS4s subject to permitting based on the 2000 Census Urbanized Area remain obligated to comply with the NPDES stormwater regulations.

The method the Census Bureau calculates the boundaries for Urbanized Areas differs over time, there are difference in the 2000 Urbanized Areas relative to the 2010 Urbanized Areas. Any small MS4 discharge designated into the NPDES program based on an Urbanized Area calculation for any given Census year remains a regulated small MS4, unless the regulated small MS4 operator requests and DEQ grants a waiver pursuant to 40 CFR § 122.32.30

3.2 Condition 2 – Permit Coverage Area

The permit has defined the minimum permit coverage area for small MS4s as the area under the entity's jurisdictional control within the Urbanized Area as defined by the U.S. Census.

3.3 Condition 3 – Eligibility Requirements

DEQ has identified two categories of permit registrants that are eligible for permit coverage, “Existing Registrants” and “New Registrants.”

Existing Registrants are those entities that currently have an individual NPDES MS4 permit.

New Registrants or “New MS4 Permittees” are those entities required to have MS4 permit coverage for the first time. This also refers to any small MS4s that have been notified by DEQ of the requirement to

²⁵ The Census Bureau's updated manner of determining an Urbanized Area for the Year 2010 Census is explained in 76 Federal Register (FR) 53030, August 24, 2011, at <http://www.census.gov/geo/reference/pdfs/fedreg/fedregv76n164.pdf>.

²⁶ NPDES regulations at 40 CFR § 122.32(d) and (e) provide a mechanism for granting waivers from MS4 permit requirements to those entities automatically designated as regulated MS4s by virtue of their location within a UA. A summary of this evaluation is available from DEQ.

obtain permit coverage, but have not yet received permit coverage and MS4s newly designated automatically as a result of expanded boundaries from the Year 2010 Urbanized Areas.

DEQ identified the Existing Registrants and New Registrants in Table 1 below:

Table 1. Existing and New Registrants

Existing Registrants		New Registrants
City of Ashland	City of Troutdale	City of Albany
City of Bend	City of Turner	City of Eagle Point
City of Corvallis	City of Wood Village	City of Grants Pass
City of Keizer	Benton County	City of Millersburg
City of Medford	Lane County	City of Rogue River
City of Philomath	Marion County	Josephine County
City of Springfield	Polk County	Linn County
Rogue Valley Sewer Services - Co-Registrants (City of Central Point, City of Phoenix, City of Talent, Jackson County, Rogue Valley Sewer Services)		--

All small MS4s identified, as New Registrants are eligible for and required to obtain permit coverage. The MS4 Phase II General Permit contains specific application deadlines for New Registrants and alternative implementation dates related to full implementation of the control measures. After the permit effective date, any New Registrants seeking coverage under this permit must complete and submit a complete DEQ’s New NPDES MS4 Phase II General Permit application in accordance with *Condition 6 – Application Requirements*.

3.4 Condition 4 – Individual Permit

In accordance with federal regulations and OAR 340-045-0033, if an otherwise eligible small MS4 decides that an individual permit is desired or small MS4 is unable to meet the terms and conditions of this permit, the small MS4 operator may request to be excluded from this permit and apply for an individual NPDES MS4 stormwater permit. Prior to the effective date of the permit, the operator must submit notification of their intent to continue with their individual permit no later than 90 days before the permit effective date and an individual NPDES MS4 permit application by January 30, 2019. After the effective date of the permit, any small MS4 operator requesting coverage under an individual permit must submit an individual NPDES MS4 permit application. Any request for an individual NPDES permit will be reviewed and processed in accordance with OAR 340-045-0033 and 40 CFR § 124. DEQ may grant the request for an individual NPDES permit if the small MS4 operator clearly demonstrate that inclusion under the general permit is inappropriate.

In accordance with OAR 340-045-0033(10), DEQ may determine that providing coverage under the general permit is inappropriate for particular MS4s and may require such facilities to apply for an individual NPDES permit. The applicability of the general permit is automatically terminated on the effective date of the individual permit.

3.5 Condition 5 - Discharge Authorization

MS4s will be authorized to discharge under the MS4 Phase II General Permit upon receipt of DEQ’s written notification that coverage has been granted.

3.6 Conditions 6 - Application Requirements

For each small MS4 operator defined as an Existing Registrant in Condition 3 above (*Eligibility Requirements*), DEQ received a MS4 permit renewal application and therefore will not require the submittal of an application for coverage under this permit. All other dischargers seeking discharge authorization under the general permit, the permit applicant must submit an application in accordance with OAR 340-045-0033(6).

New Registrants (defined in *Condition 3 [Eligibility Requirements]*), automatically designated in the 2010 U.S. Census, must submit an Application in accordance OAR 340-045-0030(3) by January 30, 2019, unless DEQ notifies the applicant of a later application deadline.

After the permit effective date, any New Registrant seeking authorization to discharge under this permit must submit an Application for New NPDES MS4 Phase II Permit no later than 60 days after the date of DEQ's notification, unless the DEQ notifies the applicant of a later application deadline.

Where more than one public entity owns or operates an MS4 within a geographic area, the operators may participate in a joint permit application as co-applicant.

3.7 Conditions 7 - Renewal Requirements

To continue permit coverage, the permit registrant must submit a permit renewal application 180 days prior to the permit expiration date. If this permit is not reissued or replaced prior to the permit expiration date, and if a completed renewal application has been submitted to DEQ, the permit will be administratively continued and remain in full force and effect for discharges that were authorized prior to the permit expiration.

Applications for permit coverage and renewal applications must be signed in accordance with the signatory requirements of *Schedule F*.

4.0 Schedule A - Effluent Limitations, Conditions, & Stormwater Management Program

4.1 Condition A.1 - Authorized Discharges

The MS4 Phase II General Permit conditionally authorizes municipal stormwater discharges, and certain types of non-stormwater discharges, provided the MS4 operator complies with the terms and conditions of the MS4 Phase II General Permit.

4.1.1 *Condition A.1.a – Requirement to Reduce the Discharge of Pollutants*

Permits for small MS4 discharges must include terms and conditions to reduce the discharge of pollutants from the MS4 to the MEP, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. Permit registrants must control pollutants in their MS4 discharges to the MEP by addressing the following “minimum control measures” outlined in the permit: public education and outreach, public participation and involvement, illicit discharge detection and elimination, construction site runoff control, post construction runoff control, and pollution prevention and good housekeeping.

4.1.2 *Condition A.1.b - Water Quality Standards*

It is presumed that a permit registrant’s compliance with the permit, the use of effective and implementation of the required control measures in the permit will result in discharges that are controlled as necessary to meet applicable water quality standards.

Water quality samples collected from the registrant’s discharge, along with samples at upstream and downstream locations in the receiving waterbody, are required to establish that a permit registrants’ discharge caused or contributed to a water quality standards exceedance. If the permit registrant becomes aware or DEQ determines, that the discharge caused or contributed to a water quality standards exceedance, the permit registrant is required to take immediate corrective actions within 48 hours of discovering the violation to evaluate the cause of the exceedance. Within 30 calendar days the permit registrant must notify DEQ in writing; and within 60 calendar days of discovering the violation, permit registrants must evaluate the effectiveness of the control measures on-site and identify in a report corrective actions to ensure that the discharge does not cause an exceedance of water quality standards in the future and submit the report to DEQ. The permit registrant must implement the corrective actions in accordance with the schedule approved by DEQ.

DEQ may require permit registrants to implement additional control measures or require permit registrants to obtain coverage under an individual permit if a discharge causes or contributes to an exceedance of water quality standards or if DEQ determines that the discharge will cause or have reasonable potential to cause or contribute to a violation of any applicable water quality standards.

4.1.3 *Condition A.1.c - Limitations of Converge*

The permit limits the permit registrant’s authorization to discharge stormwater associated with industrial or construction activity (as defined in 40 CFR § 122.26(b)(14) and (15)) by authorizing such discharges only when they are authorized by the appropriate general NPDES permit, or a separate individual permit (as necessary).

DEQ encourages infiltration of stormwater, but this permit does not authorize the discharge of stormwater to an UIC system. Any owner or operator of any type of Class V underground injection control system must permit through Rule Authorization, a General Permit, or through a Water Pollution Control Facilities (individual permit, and must comply with 40 CFR § 144-146, and other measures required in Oregon’s UIC rules (see OAR 340-044).

4.1.4 Condition A.1.d – Allowable Non-Stormwater Discharges

Certain types of discharges unrelated to precipitation events (i.e., non-stormwater discharges), listed in permit Schedule A.1.d, are conditionally allowed to enter into and thus discharged from the MS4s. Such allowable non-stormwater discharges cannot be sources of pollution to the waters of the state. Permit registrants are responsible for the quality of the discharge from their MS4, and therefore have an interest in locating and discontinuing any uncontrolled non-stormwater discharges into their MS4. As described later in this evaluation report (permit Schedule A.3.c.iii), all permit registrants to prohibit, through ordinance or other enforceable means, all other non-stormwater discharges into the MS4(s).

DEQ acknowledges that in some urban watersheds, non-stormwater sources (in the form of landscape irrigation, springs, rising ground waters, and/or groundwater infiltration) may be routinely present as discharges from the MS4. The permit registrant should refer to *Schedule A.3.c.vi* for further description of how a permit registrant can determine whether a detected dry weather discharge from the MS4 is an allowable discharge.

4.2 Condition A.2 – Permit Registrant’s Responsibilities

4.2.1 Condition A.2.a - Coordination Among Registrants and Joint Agreements

Each permit registrant is independently responsible for compliance with the terms and conditions outlined in the MS4 Phase II General Permit related to their MS4 and associated discharges. Implementation of the permit can be shared with other entities. For instance, a county government is responsible for a portion of the Urbanized Area adjacent to a city may develop an agreement with this city to implement certain minimum measures within the county’s jurisdiction. The MS4 relinquishing implementation responsibility to another entity must ensure that the minimum measures (or portions thereof) are at least as stringent as required by the permit. Additionally, the MS4 must maintain a written record of the agreement with the other entity, a record of accountability.

The permit registrant remains ultimately responsible for compliance with the permit obligations in the event the other entity fails to implement the control measure (or any component thereof).

4.2.2 Condition A.2.b - Maintain Adequate Legal Authority

The permit requires each registrant to maintain adequate legal authority to implement and enforce the required SWMP control measures as allowed and authorized pursuant to applicable state law.²⁷ Without adequate legal authority or other mechanisms to control what enters or discharges from the MS4, the permit registrants cannot perform vital stormwater management functions, such as performing inspections, requiring installation and proper operation of pollutant control measures within its jurisdiction, and/or enforcing such requirements. If their permit registrant does not have formal ordinance authority under state law, the permit registrant must utilize all relevant regulatory mechanisms available to it pursuant to applicable state law to control pollutants into and from the MS4.

DEQ expects the permit registrants to exercise their legal authority in six specific ways:

1. The permit registrants must effectively prohibit and eliminate pollutants to the MS4 from illicit discharges and connections.
2. The permit registrants must effectively control spills, dumping or disposal of non-stormwater materials into the MS4.
3. The permit registrants must have the ability to control pollutants discharged into the MS4 from land disturbance and development activities occurring within their jurisdiction.
4. The permit registrant must control the contribution of pollutants from one MS4 into another, through interagency agreements as necessary or appropriate.

²⁷ 40 CFR § 122.34(b)(3)(ii)(B), (b)(4)(ii)(A), and (b)(5)(ii)(B)); *MS4 Permit Improvement Guide*, April 2010. EPA 833-R-10-001.

5. The permit registrant must require compliance with applicable rules within their jurisdiction.
6. The permit registrant must have authority to carry out inspections, surveillance, and monitoring procedures necessary to determine compliance with the permit.

Since permit registrants may have different types of legal authority, each permit registrant must summarize their legal authorities to control pollutants in their SWMP Document as required *Schedule A.2.c*. The SWMP Document must describe how they impose their requirements, and/or use cooperative agreements with neighboring jurisdictions, to implement the required stormwater control measures based on their unique legal powers under state law.

4.2.3 Condition A.2.c - SWMP Documents

NPDES permits for MS4 discharges require the operator to implement and enforce a SWMP designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.

Each permit registrant is required to develop, and update as necessary, a written Stormwater Management Program (SWMP) Document.²⁸ The SWMP Document summarizes the physical characteristics of the MS4, describes how the small MS4 operator conducts the required SWMP control measures within its jurisdiction. The SWMP Document should also describe the permit registrant's unique implementation issues such as cooperative or shared responsibilities with other entities. The SWMP Document is intended to address three audiences

***General Public** – The SWMP Document serves to inform and involve the public in implementation of the local stormwater management program.*

***Elected officials and local staff** - The SWMP Document can potentially be used by the permit registrant as an internal planning or briefing document.*

***DEQ** - The SWMP Documents provides DEQ with a discrete document to review to understand how the permit registrant will comply with permit requirements and implement its stormwater management program.*

The requirement for the permit registrant to develop a SWMP Document is an enforceable condition of the permit. The contents of the SWMP Document are not directly enforceable as effluent limitations of the permit. In general, because the details within a SWMP Document are not enforceable permit terms, the permit registrant may create and revise the SWMP Document as necessary to describe how the permit registrant meets any permit requirements during the permit term. Updates to the SWMP Document may therefore occur without DEQ review and approval of each change as a permit modification.²⁹

The first iteration of the permit registrant's SWMP Document must be developed and submitted to DEQ and posted on their publicly available website no later than the due date of the second Annual Report. The SWMP Document must be updated annually.

²⁸ 40 CFR § 122.34(b) and *NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule* (81 FR 89320, Dec. 9, 2016). *The final rule at § 122.34(b) requires each permit to require the permittee to develop a "written storm water management program document or documents that, at a minimum, describes in detail how the permittee intends to comply with the permit's requirements for each minimum control measure."*

²⁹ *NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule* (81 FR 89320, Dec. 9, 2016).

4.2.4 Condition A.2.d,e - SWMP Information, Metrics and Resources

Each permit registrant is required to track indicator metricise and information to document and report on SWMP implementation progress. Additionally, the permit requires registrants to establish adequate financial support and staff capabilities to implement the SWMP control measures and other permit requirements. Permit registrants demonstrate compliance with *Schedule A.2.d* by fully implementing the requirements of this permit.

The permit does not specify staffing or funding levels, thus providing flexibility and incentive for the permit registrant to adopt the most efficient methods to comply with the permit requirements. DEQ encourages permit registrants to establish stable funding sources to support ongoing SWMP implementation, and enter into cooperative working relationships with other permit registrant and non-permitted small MS4s.

4.3 Condition A.3 - Stormwater Management Program Control Measures

Schedule A.3 of the permit contains the clear, specific, and measurable requirements to address the required minimum control measures in 40 CFR § 122.34(a) and (b). For each minimum control measure, specific tasks, BMPs, design requirements, performance requirements, adaptive management requirements, schedules for implementation and maintenance, and/or frequency of actions are outlined. The specific actions and ongoing activities that comprise the minimum control measure are referred to as SWMP program components.

The permit establishes the MS4 Permit Standard through appropriate stormwater management expectations necessary to reduce pollutants from regulated small MS4s. DEQ recognizes that each small MS4 is unique, and that each MS4 operator has different circumstances for stormwater management and pollutant control. To address these unique circumstances, the permit balances implementation flexibility while establishing clear, specific, and measurable permit requirements.

Permit registrants must demonstrate that they have met the respective compliance dates through the submittal of the *Annual Reports* (see *Schedule B*), and through submittal of the permit renewal application.

For each individual control measure subsequently identified in *Schedule A.3.a-f*, DEQ has identifies the implementation deadlines. NPDES regulations allow small MS4 operators covered by a NPDES permit for the first time (referred to by DEQ as New Registrants) up to five years to fully implement the required SWMP control measures (i.e., the duration of the first full permit term).³⁰

*For permits providing coverage to any small MS4s for the first time, the NPDES permitting authority may specify a time period of up to 5 years from the date of permit issuance for the permittee to fully comply with the conditions of the permit and to implement necessary BMPs. The MS4 Phase II General Permit Stormwater Control Measures.*³¹

Table 2 below summarizes program implementation schedule for both Existing and New Registrants.

³⁰40 CFR §§122.34(a)(1) and 123.35(e).

³¹ NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016.), page 89349

Table 2. SWMP Control Measures Implementation Schedule

SWMP Control Measures	Implementation Schedule	
	Existing Registrants	New Registrants
Public Education and Outreach	February 28, 2020	September 1, 2023
Public Involvement and Participation	February 28, 2020	September 1, 2023
Illicit Discharge Detection and Elimination	February 28, 2022	September 1, 2023
Construction Site Runoff Control	February 28, 2023	September 1, 2023
Post-Construction Site Runoff for New Development and Redevelopment	February 28, 2023	September 1, 2023
Pollution Prevention and Good Housekeeping for Municipal Operations	February 28, 2022	September 1, 2023

Existing Registrants must continue to conduct their current SWMP controls. Upon the permit effective date, all registrants are expected to begin to integrate/develop the conditions of the permit. All registrants must fully comply with this permit no later than 180 days prior to the permit expiration date. New Registrant

The mandatory SWMP control measures are:

- Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Runoff
- Post-Construction Site Runoff Control
- Pollution Prevention and Good Housekeeping for Municipal Operations

DEQ defined the components of each SWMP control measure in order to clarify DEQ’s expectation of what constitutes an adequate level of effort necessary to reduce pollutants from regulated MS4s and establishes the MS4 Permit Standard. Through the permit, DEQ has established consistent and appropriate stormwater management expectations for all small MS4s throughout Oregon.

The narrative descriptions for individual SWMP control measures and control measure components may require permit registrants to review, and revise or adjust, the existing SWMP control measure already in-place.

4.3.1 Condition A.3.a – Public Education and Outreach

Permit registrants are required to address the public education and outreach requirements consistent with 40 CFR § 122.34(b)(1).

All Existing Registrants have conducted public education and outreach program, as part of their compliance efforts with their individual permits. These registrants took the lead developing public education and outreach, often through shared working arrangements with or on behalf of other registrants. DEQ encourages such cooperative outreach efforts to continue, and intends for the terms and conditions of the permit to inspire additional cross-area or collaborative outreach and education efforts to reach constituents within their coverage area.

4.3.1.1 *Condition A.3.a.i - Implementation Dates*

This condition establishes the implementation deadline of one year from the permit effective date (i.e., February 28, 2020) for Existing Registrants and four and one-half years from the permit effective date (i.e., September 1, 2023) for New Registrant. Once effective, all registrants must begin, update or continue their existing public education and outreach program, to impose new program components.

All of the New Registrants have been subject to a TMDL Implementation Plan as a Designated Management Agency, which requires the DMA to implement a similar public education and outreach program.

4.3.1.2 *Condition A.3.a.ii,iii - Conduct an Education and Outreach Program & Stormwater Education Activities*

The public education program should inform individuals and households about the steps they can take to reduce stormwater pollution, such as ensuring proper septic system maintenance, the proper handling, use and disposal of landscape and garden chemicals including fertilizers and pesticides, protecting and restoring riparian vegetation, and properly disposing of used motor oil or household hazardous wastes.

The permit registrant is required to distribute and/or offer a minimum of two educational messages or activities each year of permit coverage. The education activities should be focused on the three target audiences and the 10 target topics.

Examples of strategies include distributing brochures or fact sheets, sponsoring speaking engagements before community groups, providing public service announcements, implementing educational programs targeted at school age children, and conducting community-based projects such as storm drain stenciling, and watershed and beach cleanups.

4.3.1.4 *Condition A.3.a.iv - Education on Construction Site Control Measures*

The permit registrant is required to provide educational opportunities related to the Construction Site Runoff SWMP control measures at least twice during the permit term. The permit registrant must focus these education events or activities on construction site operators pertaining to the required construction site control measures, such as the appropriate selection, design, installation, use and maintenance of construction site control measures.

4.3.1.5 *Condition A.3.a.v - Tracking and Assessment*

While the permit does not require permit registrant to conduct a formal effectiveness evaluation to measure the success of public education activities during the permit term, the Annual Report form outlines an assessment section to determine whether the desired changes in targeted behaviors has occurred due to the education and outreach programs, and provide information that can be incorporated in the permit registrant's future events. Further, DEQ acknowledges that conducting an evaluation may be difficult, particularly when identifying and isolating factors that may influence the effectiveness of an education and outreach program are considered. The intent of this measurable goal is to document and evaluate the success of the program, by both the permit registrant and by DEQ, to better focus future education and outreach in subsequent permits.

The permit registrant is also required to maintain records of their education and outreach activities.

4.3.2 *Condition A.3.b - Public Involvement and Participation*

This section of the permit addresses the public involvement and participation requirements consistent with 40 CFR § 122.34(b)(2).

Federal regulations require small MS4 permit registrants comply with State, Tribal and local public notice requirements when implementing a public involvement/participation program.³² However, there is no explicit public involvement requirement in the federal regulations regarding the ongoing implementation and evaluation of the stormwater management program.

4.3.2.1 *Condition A.3.b.i - Implementation Dates*

This condition establishes the implementation deadline of one year from the permit effective date (i.e., February 28, 2020) for Existing Registrants and four and one-half years from the permit effective date (i.e., September 1, 2023) for New Registrant. All registrants must begin to, update, or continue, their existing public involvement and participation program, and to impose new program components.

All New Registrants (regardless of population) were required in their TMDL Implementation Plan to implement a plan for public comment to implement BMPs.

4.3.2.2 *Condition A.3.b.ii - Publically Accessible Website*

Each permit registrant is required to maintain and promote at least one publicly accessible website to provide relevant SWMP information to the public. Relevant SWMP information includes the permit registrant's SWMP Document, links to relevant public education material, annual reports, and easily identifiable (and up to date) contact information such that members of the public may easily call or email to report spills or illicit discharges, and/or ask questions, etc.

4.3.2.3 *Condition A.3.b.iii – Stewardship Opportunity*

Permit registrants must continue to create, or partner with, one or more locally relevant agency/group a stewardship opportunity at least once during the permit.

4.3.2.4 *Condition A.3.b.iv - Tracking and Assessment*

The permit registrant is also required to maintain records of their public involvement participation activities.

4.3.3 *Condition A.3.c - Illicit Discharge Detection and Elimination*

This section of the permit addresses the Illicit Discharge Detection and Elimination requirements consistent with 40 CFR § 122.34(b)(3) and spill response within the MS4 Coverage Area. At a minimum, the permit requires the registrants to maintain the ability to prohibit, detect, and eliminate illicit discharges from the MS4.

Stormwater discharges are different from illicit discharges. Stormwater discharges include all pollutants that stormwater picks up while flowing to the MS4. Illicit discharges are not from precipitation events. Illicit discharges are the addition of pollutants to the MS4 because of anthropogenic activities.³³

Existing registrants have implemented an Illicit Discharge Detection and Elimination program since receiving coverage under individual permits in 2007. DEQ anticipates that New Registrants will need more time to establish their legal authority, Illicit Discharge Detection and Elimination procedures, and complaint response tracking system and dry weather screening program. As a result, the permit's implementation schedule provides New Registrants with an implementation deadline of September 1, 2023 or no later than 180 days prior to the permit expiration date.

³² 40 CFR § 122.34 (b)(2)

³³ From <http://www.ecy.wa.gov/programs/wq/stormwater/municipal/phaseIIww/5YR/2014mod/WWAPhaseII-Permit-2014Final.pdf>

The permit prohibits the discharge of non-precipitation flows (“illicit” or “non-stormwater” flows) to the MS4s. Permit registrants must conduct aggressive, thorough, and systematic illicit discharge investigations and removal of illicit connections. Permit registrants are required to develop a written Illicit Discharge Detection and Elimination protocol that includes specific procedures for implementation of the IDDE program. Examples of these requirements are a detailed map, a written prioritization of areas with a potential of illicit discharges, conduct dry weather screening and record keeping.

This permit condition continues with the following four requirements in the 1999 Phase II Rule for this minimum control measure:

- Develop a storm sewer system map showing the location of all outfalls, conveyance system, control measure, and the names of all waters receiving
- Prohibit through ordinance or other regulatory mechanism unauthorized non-stormwater discharges into the permit registrant’s MS4
- Develop and implement a plan to detect and address unauthorized non-stormwater discharges including illegal dumping into the permit registrant’s MS4
- Inform public employees, businesses, and the general public of the hazards associated with illegal discharges and improper disposal of waste, and publicize appropriate public reporting of illicit discharges when they occur

4.3.3.1 *Condition A.3.c.i - Implementation Dates*

This condition establishes the implementation deadline of three years from the permit effective date (February 28, 2022) for Existing Registrants and four and one-half years from the permit effective date (September 1, 2023) for New Registrant. All registrants to update their existing illicit discharge program activities, to fully impose any new program components.

4.3.3.2 *Condition A.3.c.ii - Mapping of the MS4*

Permit registrants are required to develop or continue to maintain a current MS4 map(s), any new components that must be included in the MS4 map and digital inventory. The purpose of the MS4 map and digital inventory, outfall inventory, conveyance system and stormwater control locations, and locations of chronic discharges is to record and verify MS4 outfall locations and include other relevant descriptive characteristics of the system. DEQ expects that each permit registrant know the locations and characteristics of all outfalls that it owns/operates through mapping their infrastructure and associated assets.

The permit contains a single MS4 map requirement for all permit registrants. The MS4 map(s) and digital inventory must be current and made available to DEQ upon request. The associated inventory must be in a digitized format, with a tabulation of the attributes identified in Schedule A.3.c.ii.A-C. While the permit registrant must maintain a current MS4 map and a digital inventory, the permit does not specify their required format. DEQ encourages permit registrants to utilize a digital MS4 mapping system, such as an electronic geographic information system format.

Permit registrants are encouraged to couple this mapping requirement with other control measures, such their Dry Weather Screening Program and associated investigations requirements in the *Schedule A.3.c.vi*.

Additionally, the MS4 map must include the location of any chronic illicit discharges. If the permit registrant performs on-site or septic system investigations, DEQ recommends that permit registrants map this investigation and use the Center for Watershed Protection Manual to guide their on-site and/or septic system investigations.³⁴

Existing Registrants must submit their MS4 map(s) with the third Annual Report. New Registrants must submit their MS4 map(s) by September 1, 2023. Before this date, all maps (including GIS data layers) must be shared with DEQ upon request.

4.3.3.3 *Condition A.3.c.iii - Ordinance and/or Other Regulatory Mechanisms Legal Authority*

Permit registrants must effectively prohibit non-stormwater discharges into their MS4 through enforcement of an ordinance or other legal mechanism to the extent allowable under state law. This section identifies the minimum prohibitions that DEQ expects each permit registrant to be able to enforce within its jurisdiction, if necessary.

The ordinance/legal mechanism does not need to cite each individual prohibition, provided that the permit registrant's legal mechanism would or could address non-stormwater discharging into the MS4. This provision provides a minimum expectation for the local ordinance/legal mechanism to fully prohibit the breadth of possible non-stormwater discharges that could negatively impact water.

For cost savings, DEQ anticipates permit registrants will leverage their existing activities such as building inspections for sanitary cross-connections, on-going stormwater and sanitary conveyance system maintenance programs, and stormwater and wastewater capital improvement programs when complying with this condition. An IDDE Program, including enforcement of such program, is necessary to avoid illicit discharges and improper disposal of waste into waters of the state.

4.3.3.4 *Condition A.3.c.iv – Enforcement Procedures*

This permit condition requires registrants to develop a written enforcement response policy or plan to support their IDDE Program efforts to detect and eliminate illicit discharges into the MS4. The enforcement program must be able to obtain compliance from chronic violators that repeatedly violate the IDDE Program requirements. The program must also include sanctions adequate to obtain compliance from recalcitrant violators. All of these elements are essential to effectively requiring that controls be implemented.

4.3.3.5 *Condition A.3.c.v - Illicit Discharge Complaint Response*

This condition establishes DEQ's expectations for a permit registrant's minimum Illicit Discharge Complaint Report and Response program. The permit registrant must maintain, and advertise, a publicly accessible and available means for the public to report illicit discharges, such as a phone number, webpage, and/or other communication channel. On average, complaints must be answered within two working days and records regarding actions taken must be maintained.

This condition also establishes timelines for permit registrants when responding to complaints and illicit discharges identified through field investigations. The timelines identified in this condition are based, in part, by the NPDES MS4 Phase I Clackamas County permit, as this permit group includes several smaller municipalities such as Cities of Happy Valley, Rivergrove, Johnson City, and Gladstone. Compliance with these timelines are crucial to ensure illicit discharges are addressed in an expeditious manner.

³⁴ The permit registrant must respond to, contain, investigate and clean up any spill of sewage into the MS4 from any source, including private laterals and/or failing septic systems.

Sources of illicit discharges are often intermittent or mobile, yet the frequency or severity of such discharges can have lasting effects on water quality. The nature, extent, and conclusions of each inspection should be recorded with the original complaint to provide a full picture of each incident. This record provides detailed information about the types and locations of discharges, their possible sources, and other information pertinent to targeting future inspection, outreach, and education activities. Additionally, accurate and complete documentation of an incident will provide better evidence to support potential citation or civil penalty cases when needed.

The permit establishes mandatory follow-up actions and timelines for recurring illicit discharges (identified by complaints or through a permit registrant's screening activities). Specific timelines are needed to prioritize swift investigation of actions to reduce or fully eliminate a known or newly identified problem.

Permit registrants are required to respond to spills and maintain all appropriate spill prevention and response capabilities, as appropriate to their jurisdiction and overall responsibilities. This may require coordination with other entities to provide maximum water quality protection.

Existing registrants currently have systems and protocols in place to track calls from the public, and to direct reports of discharges/dumping to appropriate staff and/or emergency response authorities. Staff assigned to handle calls should be trained in stormwater issues and emergency response to gather and transfer accurate information to responders. Conducting an investigation as soon as possible after the initial complaint report is crucial to the success of this program.

4.3.3.6 *Condition A.3.vi - Dry Weather Screening Program*

The permit establishes a minimum system evaluation and dry screening requirement to comply with this section of the permit.

Permit registrants are required to conduct dry weather outfall screening to identify non-stormwater flows. Existing registrants must screen at least 40 percent of their MS4 outfalls by February 28, 2022, then an additional 20 percent each following year. New Registrants must conduct dry weather screening of at least 25 percent of their MS4 outfalls no later than September 1, 2023, then an additional 20 percent each following year.

The permit includes the permit condition to identify or develop dry-weather field screening pollutant parameter 'action levels' that, if exceeded, will trigger the permit registrants to conduct further investigation to identify sources of illicit discharges. In identifying or developing the 'action levels', DEQ suggests the permit registrants review illicit discharge detection and elimination program guidance developed by the Center for Watershed Protection and referenced by the United States Environmental Protection Agency (http://www.epa.gov/npdes/pubs/idde_chapter-12.pdf).

Data collected through public reporting of illicit discharges and connections, as well as through the permit registrants' regular screening during dry weather, can reveal important trends in the types of pollutants generated and transported into the MS4. The permit also includes a requirement that the permit registrants locate and map the occurrences of chronic illicit discharges on their MS4 map(s).

All registrants are required to develop procedures for conducting investigations, source tracking, field screening and characterizing illicit discharges such as described in the Center for Watershed Protection Manual. DEQ has also established the minimum documentation, screening and laboratory analysis procedure for identifying the illicit discharge, when it is not known. Suspected sources of discharge include, but are not limited to, sanitary cross-connections or leaks, spills, seepage from storage containers, non-stormwater discharges or other residential, commercial, industrial or transportation-related activities.

The permit includes the requirement that the dry weather screening inspection activities take place annually at identified priority locations documented by the permit registrant. Priority locations must, where possible, be

located at an accessible location downstream of any source of suspected illegal or illicit activity or other location as identified by the permit registrants. Priority locations must be based on an equitable consideration of hydrological conditions, total drainage area of the location, population density of the location, traffic density, age of the structures or buildings in the area, history of the area, land use types, personnel safety, accessibility, historical complaints or other appropriate factors as identified by the permit registrant.

Additionally, permit registrants must develop or identify pollutant parameter action levels that will be used as part of the field screening. The action levels will identify concentrations for identified pollutants that, if exceeded, will require further investigation, including laboratory sample analyses, to identify the source of the illicit discharge.

4.3.3.7 Condition A.3.c.vii - IDDE Training and Education

This permit condition requires the permit registrant to train appropriate staff who are involved in evaluating compliance with the IDDE program. All staff must receive training at least once during the permit term. Staff involved in field inspections or investigations and those responding to complaints of illicit discharges must receive training within 30 days of being assigned this responsibility. Training for complaint response must include training in spill response procedures. Follow-up training is required when there is a change in procedures and/or technology for investigating, searching, and responding to complaints for illicit discharges. Documentation of training related to implementing the permit registrant's IDDE Program must be maintained.

4.3.3.8 Condition A.3.c.viii. Tracking and Assessment

The permit registrant is also required to maintain records of its IDDE program and summarized activities in the Annual Report.

4.3.4 Condition A.3.d - Construction Site Runoff

This SWMP control measure requires the regulated small MS4 operator to control construction site runoff discharges into their MS4s. See 40 CFR § 122.34(b)(4).

Existing registrants have implemented a Construction Site Runoff Program since receiving coverage under their individual permits in 2007. Previously, permit registrants were required to develop a program to control stormwater runoff from construction activity through ordinances or other mechanism at construction sites with land disturbance of one or more acres. As cited in 40 CFR § 122.34(b)(4), the minimum control measures must also include procedures for site plan review that considers potential water quality impacts; procedures for site inspection and enforcement; and procedures for the receipt and consideration of information submitted by the public. These basic requirements continue as mandatory components under this permit. However, requiring preventative construction site runoff controls only at sites that will result in land disturbance of one or more acres (or that disturb less than one acre, if it is part of a "common plan of development or sale" disturbing one or more acres) is insufficient to protect water quality.

The permit requires that the permit registrants specify erosion, sediment, and water management controls for active construction sites that result in land disturbance of less than one acre. The permit establishes separate thresholds for Large and Small Communities:

- For Large Communities: 7,000 square feet or more ³⁵
- For Small Communities: 10,890 square feet or more (one quarter of an acre) ³⁶

³⁵ Large Communities are defined as any permit registrant not defined as a Small Community.

³⁶ Small Communities are defined as any permit registrant that has a population of less than 10,000 people or is a county that is the sole permit registrant/applicant. If the county is a co-registrant at the time of permit coverage or becomes a co-registrant at any time of permit coverage under this permit, it is not eligible for this exemption.

Table 1. Identification Large and Small Communities

Large Communities	Small Communities
City of Albany	City of Eagle Point
City of Ashland	City of Millersburg
City of Bend	City of Philomath
City of Corvallis	City of Rogue River
City of Grants Pass	City of Turner
City of Keizer	City of Wood Village
City of Medford	Benton County
City of Springfield	Josephine County
City of Troutdale	Lane County
Rogue Valley Sewer Services - Co-Registrants (City of Central Point, City of Phoenix, City of Talent, Jackson County, Rogue Valley Sewer Services)	Linn County
	Marion County
	Polk County

The permit further defines minimum expectations for the permit registrant to inspect and enforce such requirements at qualifying sites, by requiring ESCP review, inspection, and enforcement of controls at construction sites that will result in land disturbance of one or more acres (or that disturb less than one acre, if it is part of a “8 plan of development or sale” disturbing one or more acres).

To address concerns associated with the costs of plan reviews, inspections, and enforcement of controls at a greater number of sites, the permit only requires the permit registrant to review plans, inspect or actively enforce erosion, sediment and waste management control requirements on sites resulting in land disturbance of one or more acres (or that disturb less than one acre, if it is part of a “common plan of development or sale” disturbing one or more acres) unless sediment is visible in stormwater discharge or if a complaint or report is received for that construction site.³⁷ DEQ expects that permit registrants will use their discretion to prioritize and scale their applicable site plan review procedures, site inspections, and enforcement activities appropriately.

DEQ is using its discretion to require specifications for construction site runoff controls at sites disturbing less than one to reduce pollutants and protect water quality in Urbanized Areas for the following reasons:

- DEQ identified receiving waters in all Urbanized Areas as being impaired for a variety of pollutants. The construction site runoff control measures are consistent with applicable TMDLs in calling for the control of erosion and the pollutants associated with sediment such as mercury, bacteria and nutrients. Controlling runoff from smaller construction sites within the MS4 will prevent sediment-laden runoff from a larger number of construction activities, and will contribute to the overall improvement of water quality in each of the impaired receiving waters. Establishing reasonable erosion, sediment and onsite

³⁷ Existing Large Communities must inspect at least 25% of the qualifying new construction sites that disturb less one or more acres at least once during the permit term

waste management control expectations at most active construction sites within these urban areas is a reasonable and effective way to prevent these pollutants from reaching receiving waters via discharge through the MS4.

- Preventing the discharge of sediment, and other pollutants, from smaller sized construction sites increases water quality protection and is more cost-effective than treating runoff from the MS4.³⁸ It is widely acknowledged that nutrients bind to sediment particles and are transported into the water column via erosion and sedimentation. Effective erosion and sedimentation controls, (such as techniques for construction sequencing, and vegetative – or non-vegetative stabilization) at smaller-sized construction projects that disturb less than one acre and discharge through the MS4 will better control pollutant loading, consistent with applicable TMDLs, and/or pollution prevention principles for discharges to surface waters.
- It is reasonable for the registrant to recognize differences between the different types of construction activity occurring in its jurisdiction, and tailor its recommended pollutant control specifications for their geography and weather patterns. Each registrant is unique, and therefore can be allowed the flexibility to determine the scope and extent of erosion, sediment, and onsite waste management controls based on site size, type of construction, location/distance from the MS4, and/or other relevant factors.
- The federally required minimum site size threshold of one or more acres triggering the construction site runoff is insufficient to ensure the adequate control of pollutant sources from the numerous small construction sites from MS4s within Urbanized Areas. Given the average lot size within more densely populated Urbanized Areas, comparatively few construction sites are likely to disturb one or more acres. To prevent sediment-laden construction discharges and to ensure greater pollutant reductions in impaired watersheds, DEQ has determined that permit registrants must impose their local requirements on sites disturbing less than one acre.
- DEQ's intent in revising the site size threshold triggering local MS4 program requirements will also address an existing MS4 program discrepancy between the Phase I and Phase II permit programs. Urban runoff from both Phase I and Phase II's has similar adverse impacts on receiving streams from urbanization, including increased peak discharges compared to predevelopment levels, increased volume of urban runoff produced by each storm in comparison to predevelopment conditions, decreased time needed for runoff to reach the stream, increased frequency and severity of flooding, reduced streamflow during prolonged periods of dry weather, greater runoff velocity during storms due to the combined effects of higher peak discharges, rapid time of concentration, and the smoother hydraulic surfaces that occur as a result of development.
- An increase in imperviousness, often associated with urbanization, can also significantly decrease the amount of water infiltration, reducing groundwater recharge. Additionally, urban development creates new pollution sources as population density increases and brings with it proportionately higher levels of car emissions, car maintenance wastes, pet waste, litter, pesticides, and household hazardous wastes, which may be washed into receiving waters by stormwater or dumped directly into storm drains designed to discharge to receiving waters. More people in less space results in a greater concentration of pollutants that can be mobilized by, or disposed into, stormwater discharges from municipal separate storm sewer systems.

³⁸ NPDES Storm Water Phase II Regulations Final Rule (64 FR 68722, Dec. 8, 1999), pages 68758-68759; *Development Document For Final Effluent Guidelines And Standards For The Construction & Development Category*, November 2009. https://www.epa.gov/sites/production/files/2015-06/documents/construction_development_dd_2009_chapters_1-11.pdf, pages 7-3 through 7-26.

- Using only a “one or more acres” site size threshold to trigger a permit registrant’s erosion, sediment and waste management controls results in pollutant controls at relatively few individual construction sites in the permit coverage area. However, U.S Census data reflects that approximately 41 percent of the single-family residential lots in the Western United States are 7,000 square feet or less.³⁹ Census data also confirms that proportionally more local building permits are issued to construction projects on small lots in urban areas.⁴⁰
- Uncontrolled stormwater discharges from urban development and construction activity negatively impacts receiving waters. EPA has previously stated that water quality impacts from small construction sites are as high as or higher than the impact from larger sites on a per acre basis, and the concentration of pollutants in the runoff from smaller sites is similar to the concentrations in the runoff from larger sites. The proportion of sediment that makes it from the construction site to surface waters is likely the same for larger and smaller construction sites in urban areas because the runoff from either site is usually delivered directly to the storm drain network where there is no opportunity for the sediment to be filtered out. Further, during the active construction period has been found to result in up to 75 times more sediment than a similar size site either before or after construction.⁴¹ In order to comprehensively prevent pollutants from the wide variety of construction activities occurring within the permit coverage areas, it is necessary that permit registrants specify the use of reasonable erosion, sediment, and waste management controls at a greater number of construction sites in the urban setting.

4.3.4.1 *Condition A.3.d.i - Implementation Dates*

This condition establishes the implementation deadline, four years from the permit effective date (Feb. 28, 2023) for Existing Registrants and four and 4.5 from the permit effective date (September 1, 2023) for New Registrants, for to update their existing program, if needed, to impose any new program components within the coverage area.

Many Existing Registrants already impose appropriately scaled erosion and sediment control requirements on construction sites that disturb less than one acre.⁴² If the permit registrant must revise their existing program to specify an appropriate level of erosion and sediment control requirements on smaller disturbance areas, DEQ recognizes that different levels of effort will likely be necessary. Cities, counties, and special districts may need differing amounts of time to revise a local ordinance. If possible, DEQ recommends that MS4s within the same Urbanized Area will work together in a cooperative manner to define appropriately scaled and reasonable construction site control requirements to find efficiencies, and to speed implementation.

4.3.4.2 *Condition A.3.d.ii - Ordinance and/or Other Regulatory Mechanism*

This permit condition outlines the expected scope of the permit registrant’s legal mechanism to reduce and prevent runoff from construction sites in its jurisdiction that disturb at least 7,000 ft² for Large Communities or 10,890 ft² (one quarter of an acre) for Small Communities; the legal mechanism must allow the permit registrant to review site plans and enforce the requirements at construction sites that will result in land disturbance of one or more acres (or that disturb less than one acre, if it is part of a “common plan of development or sale” disturbing one or more acres).

³⁹ U.S. Census: <http://www.census.gov/construction/chars/pdf/lotsize>.

⁴⁰ U.S. Census: Building Permits Survey, Permits by Metropolitan Area, <https://www.census.gov/construction/bps/msamonthly.html>

⁴¹ NPDES *Storm Water Phase II Regulations Final Rule* (64 FR 68722, Dec. 8, 1999), page 68728 - 68731; *Environmental Impact and Benefits Assessment for Final Effluent Guidelines and Standards for the Construction and Development Category*, November 2009. https://www.epa.gov/sites/production/files/2015-06/documents/cd_envir-benefits-assessment_2009.pdf.

⁴² See Response to Comments document for a tabulated data.

4.3.4.3 *Condition A.3.d.iii – Compliance with Other NPDES Permit Requirements*

This permit conditions ensure that the construction site owner/operator is informed of additional permitting requirement. As the permit registrant is responsible for all discharges from their MS4, it is in the best interest for all entities to share permitting information. This is an example of where DEQ and the permit registrants can work together to minimize the discharge of pollutants from construction sites.

4.3.4.4 *Condition A.3.d.iv - Erosion and Sediment Control Plans*

This permit condition outlines written specifications to define the appropriate site level controls for construction activities within the permit registrant's cover area. DEQ also establishes the requirement that the permit registrant develop or adopt a template-type or worksheet, and provide the template/worksheet or similar document to construction site operators prior to the beginning of construction activities (i.e., land disturbance) for site that disturb at least 7,000 ft² for Large Communities or 10,890 ft² for Small Communities.⁴³

Permit registrants are required to develop/modify and provide a written specification, including an Erosion and Sediment Control Plan. The ESCP template, worksheet or similar document is used for construction site operators a site specific ESCP to document how erosion, sediment, and waste material management controls are managed at the site. The ESCP must be provided to and completed by the construction site operator before construction/land disturbance occurs, be updated as site conditions change, and must be kept on site and made available for review by the permit registrant, DEQ, or another administrating entity. DEQ expects that the type and extent of site-level erosion, sediment, and waste management controls will likely be different depending on site size and location. Therefore, the permit registrant has the discretion to determine how best to control sediment and other pollutants in runoff from these small sites.

4.3.4.5 *Condition A.3.d.v - Erosion and Sediment Control Plan Review*

This permit condition requires a preconstruction ESCP review process to address construction project site activity, at a minimum, at sites that will result in land disturbance of one or more acres (or that disturb less than one acre, if it is part of a "common plan of development or sale" disturbing one or more acres). This review can be conducted using a checklist or similar process to consider and address potential water quality impacts from the site activities. Allowing permit registrants to limit their review and enforcement of such requirements to larger sites represents DEQ's consideration of the permit registrants' investment of time and cost associated with such oversight activities.

4.3.4.6 *Condition A.3.d.vi - Construction Site Inspections*

At a minimum, the permit registrant must inspect and enforce their requirements at construction sites occurring in their permit coverage area that will result in land disturbance of one or more acres (or that disturb less than one acre, if it is part of a "common plan of development or sale" disturbing one or more acres), if sediment is visible in stormwater discharge, or if a complaint or report is received.

Additionally, for Existing Large Communities DEQ has established the requirement that the permit registrant inspect at least 25 percent of sites that disturb less one or more acres at least once during the permit term.

⁴³ Examples of communities that have established appropriate controls for small sized construction sites include the City of Lincoln, Nebraska (provides options for scaled erosion and sediment controls appropriate for smaller single lots- See: <http://www.lincoln.ne.gov/city/pworks/watershed/erosion/noi-swppp-lot.htm>) and City of Bozeman, Montana, (also specifies cost effective BMPs for different construction sites types and sizes, including single family residential sites: see: <https://www.bozeman.net/home/showdocument?id=4739>). See also EPA 2015b. Additional references are available in the Administrative Record.

4.3.4.7 *Condition A.3.d.vii - Enforcement Procedures*

The previous permit allowed registrants wide flexibility in developing and implementing procedures for enforcement of control measure. This permit condition requires registrants to develop a written enforcement response policy or plan to guide and prioritize such oversight, inspection, and enforcement efforts for construction sites of any size. The enforce program must be able to obtain proactive compliance from chronic violators of the construction sites program requirements. The program must also include sanctions adequate to obtain compliance from recalcitrant violators. All of these elements are essential to effectively enforce erosion and ensure that sediment controls are implemented and maintained.

4.3.4.8 *Condition A.3.d.viii - Construction Runoff Control Training and Education*

This condition requires registrants to train appropriate staff who are involved in evaluating compliance with the Construction Site Runoff program. Staff involved in pre-construction ESCP review, site inspections, and/or enforcement must receive training within 30 days of being assigned this responsibility. Training for complaint response for illicit discharges and spill response procedures is recommended for all field staff. All staff must receive training at least once during the permit term. Follow-up training is required when there is a change in procedures and/or technology. This condition also requires documentation of training related to implementing the permit registrant's Construction Site Runoff program.

4.3.4.9 *Condition A.3.d.ix - Tracking and Assessment*

The permit registrant is also required to maintain records of their Construction Site Runoff program and summarized activities in the Annual Report.

4.3.5 *Condition A.3.e - Post-Construction Site Runoff Control*

This SWMP control measure requires permit registrants to control post-construction site runoff discharges into their MS4s. See 40 CFR § 122.34(b)(5).

This permit condition expands on the previous requirements by identifying specific minimum performance requirements. The basis of the permit's performance standards includes the following:

- Review of the post-construction stormwater requirements of Phase II permit in other states
- Oregon's approach for managing post-construction stormwater in the TMDL and Coastal Nonpoint Pollution Control Programs
- The approaches used in Oregon's Phase I permittees
- The approaches used by small municipalities without permit coverage
- EPA's guidance provided in the 1999 NPDES MS4 Phase II rules
- EPA's guidance for improving MS4 Permits and its compendium of NPDES permit examples
- Scientific literature

The information below presents the rationale for the post-construction site runoff management requirements presented in this permit condition and highlights the information used in formulating this condition.

Existing registrants have implemented a Post-Construction Site Runoff Control program since receiving coverage under their individual permits in 2007.

The Post-Construction Site Runoff Control program permit language was drafted with the goal of providing clear, specific and measurable permit conditions. As such, the permit includes enforceable narrative and numeric effluent limitations. One example is the site performance standard and treatment requirement.

This site performance standard establishes an objective and verifiable means for reducing pollutant discharges contributing to water quality problems to the MS4 Permit Standard. This condition requires permit registrants to use a Low Impact Development approach to stormwater management prioritizing non-structural stormwater controls to minimize the creation of impervious surfaces and minimize stormwater volume. This condition requires registrants to prioritize green infrastructure when structural stormwater controls are needed to remove pollutants from stormwater or to further reduce stormwater volume prior to discharging.

***Structural Stormwater Controls** or BMPs are stormwater controls that are physically designed, installed, and maintained to prevent or reduce the discharge of pollutants in stormwater to minimize the impacts of stormwater on waterbodies. As noted in the 64 Federal Register 68760 (December 9, 1999), examples of structural stormwater controls or BMPs include: (1) storage practices such as wet ponds and extended-detention outlet structures; (2) filtration practices such as grassed swales, sand filters and filter strips; and, (3) infiltration practices such as infiltration basins and infiltration trenches.*

***Non-structural Stormwater Controls** or BMPs are stormwater controls in the form of development standards or other regulatory mechanisms intended to minimize and treat stormwater by minimizing impervious surfaces and by using soil infiltration, evaporation, and transpiration. These controls may also take the form of procedural practices to prevent pollutants from contaminating stormwater. The use of this term in this Permit is consistent with the discussion of non-structural stormwater BMPs in 64 Federal Register 68760 (December 9, 1999) which encompasses preventative actions that involve management and source controls such as: (1) policies and ordinances that provide requirements and standards to direct growth to identified areas, protect sensitive areas such as wetlands and riparian areas, maintain and/or increase open space (including a dedicated funding source for open space acquisition), provide buffers along sensitive waterbodies, minimize impervious surfaces, and minimize disturbance of soils and vegetation; (2) policies or ordinances that encourage infill development in higher density urban areas, and areas with existing storm sewer infrastructure; (3) education programs for developers and the public about project designs that minimize water quality impacts; and (4) other measures such as minimization of the percentage of impervious area after development, use of measures to minimize directly connected impervious areas, and source control measures often thought of as good housekeeping, preventive maintenance and spill prevention.*

This permit condition requires that permit registrants establish a lower threshold for post-construction site runoff controls in new development and redevelopment than is required in 1999 Phase II Rules. This more protective threshold is similar to the current permit condition in the Clackamas County Co-Permittees.⁴⁴ Many of these Co-Permittees are smaller than the Phase II permit registrants, yet they have demonstrated the capacity to administer this requirement. Specifically, DEQ requires permit registrants to establish a regulatory trigger for post-construction site runoff when a development or redevelopment creates 5,000 square feet or more of new impervious surfaces.

The intent of this threshold is to prevent the further degradation of water quality in waterbodies receiving permit registrant's stormwater discharge. As noted in this document, all the waterbodies permit registrants' discharge to, with the exception for the City of Bend, are under at least one TMDL.⁴⁵ Moreover, these same waterbodies are on DEQ's 303(d) list for other water quality impairments. The waterbodies receiving Bend's stormwater discharge are on the 303(d) list for several water quality impairments requiring the need for the development of a TMDL. The TMDL and water quality impairments summarized in this document, see *Section 7.1.3, TMDLs Applied to Permit Registrant's Stormwater Discharge & 303(d) Listed Water*. DEQ has established the lower threshold for post-construction stormwater controls to reduce stormwater volume and to treat stormwater discharges to ensure

⁴⁴ The Clackamas County Co-Permittees are a Phase I permittee.

⁴⁵ Many of the permit registrants have than one applicable TMDL in place for urban land uses or urban stormwater.

permit registrant's stormwater management efforts will contribute significantly to collective efforts to attain water quality standards as a permit registrant's community experiences further urbanization.

Urbanization's impact on water quality with its creation of impervious surfaces is well established.⁴⁶ EPA's research shows a linkage between low total or effective impervious surface area and changes in stream biotic assemblages. Moreover, through an Endangered Species Act Section 7 biological opinion, the National Marine Fisheries Service requires post-construction site runoff controls when the Army Corps of Engineer's permits stormwater, transportation, and utility projects creating new impervious surfaces. Although this condition's threshold is not as protective as the National Marine Fisheries Services' threshold, this permit has a more comprehensive approach to controlling stormwater pollutants that involves six minimum control measures addressing a variety of stormwater pollutant sources and includes requirements to look for opportunities that include both non-structural and structural stormwater controls in existing development.

To address concerns associated with land use and the inclusion of Urbanized Areas that are outside an urban growth boundary, the permit establishes a separate threshold for counties. For counties, project sites located entirely outside an urban growth boundary but still within a Urbanized Area, Schedule A.3.e.ii applies to project sites discharging stormwater to the MS4 that create or replace 10,890 square feet (a quarter of an acre) or more of new impervious surface area.

DEQ recognizes that time and resources will be necessary to update, refine, and issue post-construction construction site requirements within a permit registrant's jurisdictional boundaries in response to this permit condition. As a result, this condition requires permit registrants to continue implementing current requirements until the new requirements can be reflected and incorporated into their post-construction program in accordance with this permit schedule.

4.3.5.1 *Condition A.3.e.i - Implementation Deadline*

This condition establishes the implementation deadline of four years from the permit effective date (i.e., February 28, 2023) for Existing Registrants and 4.5 years from the permit effective date (i.e., September 1, 2023) for New Registrants. Registrants must update their existing program, if needed, to impose any new program components within the coverage area.

A few Existing and New Registrants already impose appropriately scaled post-construction runoff control requirements on project sites that disturb less than one acre.⁴⁷ When possible, DEQ recommends that MS4s within the same Urbanized Area work together in a cooperative manner to define appropriately scaled and reasonable post-construction site control requirements to find efficiencies, and to speed implementation.

4.3.5.2 *Condition A.3.e.ii - Ordinance and/or Other Regulatory Mechanism*

This permit condition outlines the expected scope of the permit registrant's legal mechanism to reduce discharges of pollutants and control stormwater runoff from new development and redevelopment sites within its jurisdiction that disturb 5,000 ft² or more new impervious area.⁴⁸

⁴⁶ U.S. EPA. The Causal Analysis/Diagnosis Decision Information System Volume 2: Sources, Stressors and Responses.

⁴⁷ Thresholds less than 1 acre: City of Albany (8,100 ft²), City of Bend (5,000 ft²), City of Keizer (all permitted projects), City of Rogue River (500 ft²), City of Wood Village (1,000ft²), Rogue Valley Sewer Services (2,500 ft²)

⁴⁸ For counties, if the project sites is located entirely outside an Urban Growth Boundary but still within a Urbanized Area as defined by any Decennial Census, Schedule A.3.e.ii applies to project sites discharging stormwater to the MS4 that create or replace 10,890 square feet (a quarter of an acre) or more of new impervious surface area.

4.3.5.3 Condition A.3.e.iii – Prioritization of Low Impact Development Code-Related Requirements

To meet the numeric site performance standard intended to target predevelopment hydrologic function while conserving limited resources, the condition specifically requires permit registrants to prioritize LID using non-structural stormwater controls first to reduce stormwater volume before employing more costly structural stormwater controls. This condition was developed to implement the guidance in the 1999 Phase II rules to “attempt to maintain pre-development runoff conditions”. In addition, it addresses the 1999 Phase II rule to “develop and implement strategies which include a combination of structural and/or non-structural BMPs appropriate for your community”.

DEQ expects designers to first consider non-structural stormwater controls before employing structural stormwater controls. These non-structural stormwater controls protect wetlands and riparian areas by using landscape features to infiltrate, evaporate through plant interception, and transpire rainfall while retaining stormwater on-site (i.e., pollution prevention) and minimize the discharge of stormwater carrying pollutants off-site. The 1999 Phase II rules define non-structural stormwater controls or best management practices as preventative actions. Thus, this condition to use pollution prevention measures initially is intended to minimize compliance costs and improve the effectiveness of measures to remove pollutants from stormwater. In the discussion of the post-construction stormwater minimum control measure in the preamble of the 1999 Phase II rules, EPA states:

The NURP [Nationwide Urban Runoff Program] study and more recent investigations indicate that prior planning and designing for the minimization of pollutants in storm water discharges is the most cost-effective approach to storm water quality management. Reducing pollutant concentrations in storm water is often more expensive and less efficient than preventing or reducing pollutants at the source.

As a result, in developing a stormwater approach, this condition requires permit registrants to first “review, revise, and make effective their local development-related codes, rules, standards, or other enforceable documents to incorporate” non-structural stormwater controls associated with land use planning standards in an effort to achieve better site design. Better site design is a key element of LID and seeks to reduce the amount of impervious surfaces by using natural landscape features and pervious soils for more effective stormwater management prior to designing structural stormwater controls.

As highlighted in EPA’s National Menu of BMPs for post-construction stormwater requirements, the application of non-structural stormwater controls as a first step in meeting this requirement has broad applicability nationwide as a practice that can successfully achieve the post-construction minimum control measure. This initial approach is appropriate for all municipalities subject to this condition. It offers an economic incentive by providing a mechanism to credit the volume reduction associated with better site design and allowing a reduction in the overall size and footprint of structural treatment and detention practices.⁴⁹ Concerning its broad applicability, the National Menu of Stormwater BMPs cites - among other resources for Phase II permit registrants - EPA’s *Using Smart Growth Techniques as Stormwater Best Management Practices* and the National Association of Home Builders Research Center’s *The Practice of Low Impact Development* prepared for the U.S. Department of Housing and Urban Development.^{50 51} As the preamble of the 1999 Phase II rules notes, EPA developed this menu of BMPs “to reduce the risk that permittees will develop inadequate BMPs” as they develop their stormwater programs.

⁴⁹ Battiata, Joseph, Kelly Collins, David Hirschman, and Greg Hoffmann. 2010. *The Runoff Reduction Method*. Journal of Contemporary Water Research & Education, Issue 146

⁵⁰ EPA. 2005. *Using Smart Growth Techniques as Stormwater Best Management Practices* (EPA 231-B-05-002)

⁵¹ National Association of Home Builders Research Center. 2003. *The Practice of Low Impact Development*. Prepared for the U.S. Department of Housing and Urban Development Office of Policy Development and Research, Washington, D.C.

4.3.5.4 Condition A.3.e.iv - Post-Construction Stormwater Management Requirements

The site performance standard used in this permit condition has its origins, in part, in the 1993 federal guidance referenced in both the preamble of the 1999 NPDES Phase II rules as well as the regulatory guidance provided in the minimum control measure for post-construction stormwater management in new development and redevelopment in this rule.⁵² The Phase II rule preamble notes that EPA's 1993 *Guidance for Specifying Management Measures for Sources of Nonpoint Source Pollution in Coastal Waters* identifies a management measure to reflect the greatest degree of pollutant reduction that is economically achievable for urban runoff. This guidance was developed to assist with compliance with the Coastal Zone Act Reauthorization Amendments. Specifically, this 1993 management measure for new development requires:

(1) that by design or performance the average annual total suspended solid loadings be reduced by 80 percent and (2) to the extent practicable, that the predevelopment peak runoff rate and average volume be maintained.

In this 1993 EPA guidance, the application of these two criteria are based on the 2-year, 24-hour storm for design purposes. The design storm volume has evolved since 1993 to include other acceptable methods consistent with this site performance standard. As a result, DEQ has opted to provide permit registrants with more flexibility when developing the numeric requirement for stormwater retention in order to implement this site performance standard.

DEQ adopted the 1993 management measure, noting that stormwater permits and TMDL Implementation Plans could include practices and that it would finalize guidance to implement this performance standard in expanded TMDL Implementation Plans addressing post-construction elements for stormwater management.^{53,54} Given the TMDLs issued and 303(d) listings for waterbodies receiving a permit registrant's stormwater discharge, this condition includes numeric requirements consistent with the site performance standard in EPA's 1993 guidance.

DEQ's analyses of requirements for other MS4 permits also include the requirement to target predevelopment hydrologic function noted in EPA's 1993 guidance. In issuing these individual permits, DEQ stated in the Permit Evaluation Reports that other post-construction requirements in the individual permit such as optimizing on-site retention (i.e., infiltration, evapotranspiration, and water capture and reuse), targeting natural surface or predevelopment hydrologic functions, and minimizing hydrological and water quality impacts from stormwater runoff from impervious surfaces, will be substantially addressed with an Low Impact Development approach. For example, the Permit Evaluation Report for the post-construction site runoff condition for the Clackamas County Co-Permittee's NPDES MS4 Phase I Permit goes on to stress:

...the importance of stormwater runoff prevention first, followed by site-specific runoff reduction, and finally the capture and treatment of pollutants, as highlighted in the 2008 National Research Council report.⁵⁵

This Phase I Permit, as well as others, required a numerical site performance standard to "capture and treat 80 percent of annual average runoff volume, based on a documented local or regional rainfall frequency and intensity." DEQ's expectation for the Phase I Permittees, as expressed in the Permit Evaluation Reports, was that

⁵² 68722 Federal Register/Vol. 64, No. 235/Wednesday, December 8, 1999

⁵³ Oregon's Submittal for Remaining Management Measures for Approval of Oregon's Coastal Nonpoint Pollution Control Program. July 1, 2013. In its submittal for approval of Oregon's Coastal Nonpoint Pollution Control Program as part of a settlement agreement for Northwest Environmental Advocates v. Locke, et al., DEQ and the Oregon Department of Land Conservation and Development adopted this management measure.⁵³

⁵⁴ Oregon DEQ. *TMDL Implementation Guidance: Guidance for Including Post-Construction Elements in TMDL Implementation Plans*. March 20, 2014

⁵⁵ City of Salem NPDES MS4 Permit Evaluation Report & Fact Sheet. December 30, 2010.

ultimately, most development sites would achieve this numerical standard by using site design methods and approaches that mitigate the volume, duration, time of concentration and rate of stormwater runoff using LID and green infrastructure. For example, permit conditions include requirements and incorporate site-specific management practices to target predevelopment hydrologic function and note “the site-specific management practices should optimize on-site retention based on the site conditions”.

Although Phase I permits were required for medium and large municipalities, the Phase I permits also provide coverage for several small municipalities. These small Oregon municipalities are currently implementing the post-construction site runoff requirements, highlighted above. Similarly, the City of Springfield currently uses portions of the City of Eugene’s Phase I permit requirements relating to the construction and maintenance of stormwater treatment facilities as modified for conditions specific to Springfield. In addition, the City of Florence, a rural coastal municipality not required to have NPDES MS4 Permit, has adapted a modified version of the City of Portland requirements.

Additionally, the Willamette Basin Bacteria and Mercury TMDLs require the City of Springfield to establish post-construction design features to reduce bacteria and mercury in all new development and public work projects to reduce the loadings of these TMDL pollutants. These design features include surface infiltration, treatment and/or filtering of surface water runoff and LID techniques such as rain gardens, infiltration swales, and rainwater harvesting. The City of Springfield provides criteria to use when designing stormwater systems using LID approaches. These criteria include maximizing the amount of runoff infiltrated to the greatest extent practicable, utilizing riparian setbacks and other landscaped areas on the development site for stormwater treatment and infiltration where practical, and coordinating use of public open space areas with sufficient capacity to infiltrate additional runoff from development sites adjacent to public open space. These criteria are consistent with this condition’s requirement to prioritize LID using non-structural stormwater controls first to reduce stormwater volume as noted below.

4.3.5.4.1 Condition A.3.e.iv.A - Site Performance Standard

Building on the approach established in the Phase I permits and Oregon’s Coastal Nonpoint Pollution Control Program, this condition requires that permit registrants establish a numeric site performance with an on-site stormwater retention requirement. The requirement must target natural surface or predevelopment hydrologic function as much as practical using one of several methods. This condition strives to be more clear, specific, and measurable in its requirement for the retention of stormwater on-site and the treatment of stormwater discharged off-site when, due to site constraints, full compliance with this retention requirement is not practicable.

The Phase I permits’ post-construction site runoff condition establishes a retention requirement using the average annual runoff-based method, more specifically, requires the capture and treatment of 80 percent of the average annual rainfall. The condition in the MS4 Phase II General Permit provides permit registrants more flexibility in selecting the method used to establish the required site performance standard. This condition provides as an option a volume based method (e.g., first 1 inch of a 24 hour event), storm event percentile-based method (e.g., 95th percentile storm event), or annual average runoff-based method (e.g., 80 percent of annual average runoff).

This numeric retention requirement is established in this condition to mitigate changes in the volume, duration, time of concentration, and rate of stormwater runoff during urban development in an effort to reduce pollutant discharge in stormwater from development. This retention requirement in the site performance standard provides a more cost effective treatment for stormwater by using the natural filtering capacity of the soil and the organic matter. As an additional benefit, this retention requirement will reduce streambed and bank erosion and the pollutants released from this erosion. Pollutants from bed and bank erosion, such as mercury and nutrients, are contributing to water quality impairments in waterbodies receiving MS4 discharge.

As a result of the flexibility to select a methodology for establishing a retention requirement, permit registrants who are currently using the annual average runoff-based method can minimize adjustments to their post-

construction site runoff requirements when complying with this condition. Other permit registrants may use one of the other options to tailor their program to better accommodate local conditions, watershed priorities, and reduce discharges of pollutants and control stormwater runoff from new development and redevelopment project sites. Alternatively, permit registrants can collaborate with other nearby permit registrants or Phase I permittees to implement this condition in an effort to leverage their collective resources and establish more uniform requirements in a region for the development community. Moreover, permit registrants may also utilize the *Western Oregon Low Impact Development Guidance Manual* to leverage their limited resources to develop post-construction site runoff requirements in compliance with this condition.⁵⁶

When site constraints prevent the on-site retention of the stormwater volume specified in the retention requirement, the permit registrant must treat the remainder of this stormwater volume prior to its discharge off-site using a structural stormwater control. Given the requirement to retain on-site a portion of the stormwater from a rain event, the size of the structural stormwater control will be reduced generating cost savings in material and the space needed for this control. As noted in City of Springfield's Engineering Design Standards and Procedures Manual, effective implementation of LID approaches may lower the construction costs more than conventional structural stormwater controls and can reduce the space needed for these controls.⁵⁷ On its webpage for the Cost-Benefit of Green Infrastructure, EPA has compiled several studies analyzing the costs as well as presenting cost-benefit analyses of green infrastructure and a design approach using better site design early in the process of planning for stormwater management.⁵⁸

4.3.5.4.2 Condition A.3.e.iv.B - Treatment Standard

Compliance with a stormwater treatment requirement is necessary when designing a structural stormwater control to treat the remainder of the stormwater volume specified in the permit registrant's on-site retention requirement prior to its discharge off-site. Specifically, this condition requires that a structural stormwater control remove, at minimum, 80 percent of the total suspended solids. The runoff discharged off-site must target predevelopment hydrologic function. This treatment standard provides a design standard for the target or design pollutant TSS. Permit registrants may adopt treatment standards for other targeted pollutants such as a TMDL or 303(d) listed pollutant but, at minimum, TSS is the required design pollutant for structural stormwater controls because it serves as a surrogate pollutant for other pollutants. Pollutants such as bacteria, mercury, and nutrients will likely be captured when using the TSS treatment standard.⁵⁹

More importantly, when evaluating options for a structural stormwater control, this condition requires the permit registrant to prioritize the use of green infrastructure. The unit processes typically associated with GI with its focus on bioretention involving processes such as sedimentation, adsorption, filtration, and plant uptake are effective for reducing the loading of a variety of stormwater pollutants including those causing impairment of waterbodies receiving the permit registrants' discharge.^{60,61} For example, in the Lower Columbia Slough TMDL for lead, PCBs, Dieldrin, DDE/DDT, and dioxin, DEQ required Wood Village and other Designated Management Agencies to use TSS as a surrogate to estimate the effectiveness of stormwater controls.

The conditions' numeric site performance standard involving a retention and treatment requirement is consistent with national trends in post-construction stormwater management. In 2005, the State of Minnesota conducted a

⁵⁶ <https://www.oregon.gov/deq/wq/tmdls/Pages/TMDLs-LID.aspx>

⁵⁷ <http://www.springfield-or.gov/dpw/EngineeringDesignStandardsAndProceduresManual.htm>

⁵⁸ U.S. EPA Green Infrastructure Cost-Benefit Resources Webpage <https://www.epa.gov/green-infrastructure/green-infrastructure-cost-benefit-resources>

⁵⁹ National Research Council. 2009. *Urban Stormwater Management in the United States*. The National Academies Press, Washington, D.C.

⁶⁰ *Urban Waterways – Bioretention Performance, Design, Construction and Maintenance*. North Carolina State and AT&T State University Cooperative Extension.

⁶¹ EPA. 1999. Storm Water Technology Fact Sheet: *Bioretention* (EPA 832-F-99-012)

review of trends in stormwater management in the previous decade.⁶² Minnesota's review noted shifts in statewide post-construction stormwater managements reflected in the stormwater requirements of the Wisconsin, Pennsylvania, New York, Vermont, Maryland, and Washington. These shifts in requirements included increased emphasis for on-site runoff reduction using better site design practices and increased emphasis for runoff retention volume requirements for pollutant reduction. Moreover, the Association of Clean Water Administrators' post-construction workgroup indicated that 50 percent of the states in 2016 use a numeric retention standard, 28 percent use a narrative retention standard, and 22 percent use numeric treatment standards to address specific pollutants.⁶³ This is a 32 percent increase from the number of states using a numeric retention standard in 2014.⁶⁴ The site performance standard in this condition brings Oregon's permit in line with national trends and EPA's guidance.

4.3.5.4.3 Condition A.3.e.iv.C - Structural Stormwater Control Design and Specifications

This permit condition requires permit registrants to provide a description of all allowable structural stormwater controls, included site-specific design requirements that do not inhibit maintenance, conditions where each control applies, and operation and maintenance standards for each control.

Additionally, the permit registrant must identify conditions where the implementation of Green Infrastructure or equivalent approaches may be impracticable.

4.3.5.4.4 Condition A.3.e.iv.D – Allowance for Alternative Compliance

The permit condition allows for alternative mitigation or treatment alternatives in situations where complete on-site retention of the target volume is infeasible. The permit registrant may apply an alternate standard if that alternative is deemed to be equally protective, or more protective, to the onsite stormwater management design standard as articulated in this permit. For example, alternative compliance with the permit registrant's calculated stormwater management design standard could take the form of off-site mitigation or payment in lieu programs. The permit registrant could consider creating an inventory of appropriate alternative stormwater management techniques, and/or using planning mechanisms (such as completed sub-watershed plans or other appropriate means) to identify priority areas within sub-watersheds of their jurisdiction(s) where off-site mitigation, and/or public stormwater mitigation projects, may be implemented.

4.3.5.4.5 Condition A.3.e.iv.E - Stormwater Mitigation Options

This permit requires stormwater mitigation off-site when site-specific conditions make full compliance with the retention requirement infeasible. This condition requires that the unmet portion of the retention requirement noted above be addressed using an alternative compliance process referred to as stormwater mitigation. The intent of stormwater mitigation is to provide the permit registrant with multiple pathways to mitigate the water quality impacts associated with the increase in stormwater arising from urban development.

In this condition, permit registrants are required, at minimum, to offer one of the mitigation options to site operators. DEQ has concluded that providing more options will give the permit registrant and the development community greater flexibility to achieve permit compliance. The inclusion of stormwater mitigation options not only maximizes opportunities to mitigate water quality impacts but increase the flexibility in reducing pollutant loading. This approach is also consistent with trends in the Phase II post-construction stormwater requirements as

⁶² Minnesota Stormwater Manual. 2005. Issue Paper D: *Unified Stormwater Sizing Criteria for Minnesota V.6 Final*

⁶³ Association of Clean Water Administrators. March 21, 2016. *The Weekly Wrap*. Volume VII., Issue 10

⁶⁴ Sawyers, Andrew D. and Best-Wong, Benita. 2014. Memorandum: Revisions to the November 22, 2002 Memorandum *Establishing TMDL Wasteload Allocations (WLA) for Stormwater Sources and NPDES Permit Requirements Based on Those WLAs*. U.S. EPA

demonstrated by other states such as West Virginia and Tennessee.⁶⁵ In considering stormwater mitigation options, permit registrants may want to consider the following two resources:

- *Guidance for Developing an Off-Site Stormwater Compliance Program in West Virginia – Local Stormwater Program Development in Accordance with the West Virginia General Permit for Stormwater Discharges from Small MS4s (WV0116025)*⁶⁶
- *Creating Clean Water Cash Flows – Developing Private Market for Green Stormwater Infrastructure in Philadelphia*⁶⁷

Along with providing flexibility for permit compliance, this stormwater mitigation requirement supports the permit registrant's efforts to address TMDL wasteload and load allocations as well as 303(d) listings. This is achieved by placing emphasis on the more reliable and cost-effective approach to pollutant load reduction provided by measures reducing stormwater volume. Most permit registrants are discharging their stormwater to waterbodies under a TMDL, such as bacteria, where DEQ has identified urban land uses or stormwater as a source of the water quality impairment in receiving waterbodies. Stormwater mitigation will, therefore, better support permit registrant's efforts to comply with water quality standards.

There are three options to comply with alternative compliance when the retention standard cannot be met:

- Off-site mitigation
- Groundwater replenishment projects
- Developing a treatment equivalent to the retention requirement

The option of off-site mitigation at another site offers the permit registrant as well as the development community an alternative compliance approach when site constraints make compliance with the retention requirement infeasible. Stormwater mitigation may provide a more economical path toward compliance that is equally protective of water quality. To ensure appropriate sites or projects are ultimately selected, the option of off-site mitigation at another location requires the permit registrant to have an inventory of appropriate alternative projects or sites as well as standards and management systems to value, estimate, and account for how these projects or sites will meet the stormwater retention requirement in the site performance standard. This inventory serves as a preliminary assessment of opportunities for alternative compliance and should not preclude the pursuit of more effective opportunities that may arise unexpectedly.

This inventory of alternative sites may be provided by the development community or be generated by the permit registrant. Permit registrants can integrate or leverage compliance with this requirement using other inventories or assessments, such as a buildable lands inventory, a statewide planning Goal 5 inventory, or a statewide planning Goal 11 public facilities inventory for the permit registrant's stormwater system. Moreover, to minimize additional administrative costs, the O&M tracking mechanism should be used by the permit registrant to record performance mitigation projects and water quality impacts of development at another location.

This condition offers two other off-site mitigation options that, if utilized by the permit registrant, require the establishment of a stormwater mitigation bank program or a stormwater payment-in-lieu program. The stormwater mitigation bank option may be an administrative burden on the permit registrant. The development of a stormwater mitigation bank necessitates an analysis of the market for off-site mitigation to evaluate the supply as well as demand for off-site mitigation credits to determine if there is a viable market to support this program. It also involves the establishment of a trade currency based on the unmet stormwater retention requirement at the development site. Given this, the larger permit registrants with their greater administrative capacity and greater

⁶⁵ U.S. EPA. 2015. *MS4 General Permit and the Six Minimum Control Measures – A Compendium of Permit Requirements*. (Draft)

⁶⁶ West Virginia Department of Environmental Protection, Center for Watershed Protection, and Downstream Strategies. 2012. *Guidance for Developing Off-Site Stormwater Compliance Program in West Virginia*

⁶⁷ Natural Resources Defense Council, EKO Asset Management Partners, and The Nature Conservancy. 2013. *Creating Clean Water Cash Flows – Developing Private Markets for Green Stormwater Infrastructure in Philadelphia*

pool of potential mitigation sites are more likely to pursue the development of this stormwater mitigation option. However, as noted below, the administrative burden in implementing a stormwater mitigation-banking program is likely to be offset by its future cost savings.

The cost savings from stormwater mitigation banking is typically achieved when the permit registrant or developer meets the retention requirement for a constrained property at another location where the stormwater can more cost-effectively be retained on-site. Stormwater mitigation banking generates savings using market forces to identify low cost mitigation opportunities and, therefore, attracting limited resources to the most cost-effective mitigation opportunities within a subwatershed. Off-site mitigation credit can be derived on a site already owned by the permit registrant or by a developer by using existing resources as long as the mitigation site's existing capacity to retain stormwater is enhanced in the mitigation process.

This condition also includes, as an alternative for compliance, an off-site mitigation option involving a stormwater payment-in-lieu program. As with a stormwater mitigation bank program, this option will entail some administrative burden in establishing the currency or unit used to compare the unmet stormwater volume retention requirement with the future opportunity to meet this requirement at an off-site location. An in-lieu program involves establishing a rate based on this currency such as a dollar amount per volume of runoff retained. Additionally, if a permit registrant develops a payment-in-lieu program, the permit registrant will need to develop trading ratios and the scale of trading. The trading ratios establish the runoff reduction volume that a non-structural or a structural stormwater control such as an infiltration basin must be designed to infiltrate off-site. The scale of trading defines the geographic boundary linking the development or redevelopment site to eligible alternative locations for compliance with the retention requirement.

The payment-in-lieu option provides the site owner or operator with flexibility while leveraging the permit registrant's limited resources to strategically locate stormwater controls for greater environmental impact. This compliance flexibility and additional funding provided by a payment-in-lieu program will likely, over time, offset the administrative costs of establishing a pay-in-lieu program.

More flexibility to find lower cost approaches to compliance is provided by the two additional categories of stormwater mitigation. These are the use of groundwater replenishment projects and the use of a treatment equivalent to the site performance standard.

The groundwater replenishment project condition allows the permit registrant to meet the unmet portion of the retention requirements in the site performance standard with groundwater replenishment. This opens up yet another opportunity to identify a lower cost compliance approach. The mitigation option can be combined with the permit registrant's stormwater mitigation bank program. In this example, commercial systems designed to efficiently infiltrate and store underground large volumes of stormwater within a small footprint lend themselves to creating opportunities to supply of stormwater volume credits within the permit registrant's jurisdiction. The opportunity to generate these credits by maximizing the stormwater retained on a site, in turn, creates an incentive for the permit registrant or developer to pursue groundwater replenishment projects. This requirement will also help support permit registrants' efforts to implement a "one water" approach to municipal water management with its goal of integrating the management of stormwater, drinking water, and wastewater for not only cost efficiencies but better water resource management.⁶⁸

The final stormwater mitigation category offered focuses on establishing a treatment equivalent to the retention requirement in the site performance standard. Given its emphasis on the use of structural stormwater controls to meet this retention requirement, DEQ anticipates this option may be more costly and, therefore, the less used option. However, this option is included in this condition to expand the number of pathways for alternative compliance permit registrants may develop to comply with the retention requirement in the site performance

⁶⁸ Water Environment Research Foundation. 2015. *Pathways to One Water – A Guide for Institutional Innovation*

standard should the other stormwater mitigation options be considered less desirable or, in some circumstances, unavailable to the permit registrant or developer.

4.3.5.5 *Condition A.3.e.v - Post-Construction Site Runoff Plan Review*

This condition requires the permit registrants to review and approve site plans to verify proper implementation of post-construction site runoff plans for all new development and redevelopment projects, at a minimum, at sites that result in land disturbance of one or more acres (or that disturb less than one acre, if it is part of a “common plan of development or sale” disturbing one or more acres) and sites that use alternative compliance to meet the retention requirement. Specific standards are a critical component of this program, but even the best local requirements must be supported by a review component to ensure that the locally established performance standards are met. To comply with this requirement, the permit registrant must have the authority to deny projects when it determines that the controls at a specific site are not designed to meet the established standards for structural stormwater control.

The permit requires that the written technical justification be reviewed by either an Oregon registered Professional Engineer or Oregon Certified Engineering Geologist to ensure a qualified reviewer.

DEQ expects that permit registrants will establish submittal requirements for post-construction site runoff plans, providing clear submittal requirements for plans will also meet the education requirements for developers. At minimum, the permit registrant’s post-construction site runoff plan submittal requirements should include as an initial step prioritizing non-structural structural controls for on-site management of stormwater such as the identification of natural site features that could be protected and integrated into the runoff plan. For example, site evaluation to retain landscape features that could be used to reduce the volume of stormwater generated when a site is developed.

Non-structural stormwater controls include features such as mature trees with canopies in or outside riparian areas. These areas, if delineated and protected, would reduce stormwater on a developed site through interception and evaporation of rainfall and subsequent transpiration while contributing organic matter via leaf fall to improve soil permeability by improving soil structure. Protecting trees and shrubs for stormwater management could be used to satisfy vegetation standards or a tree preservation and mitigation standard that was adopted or used to comply with this condition’s LID code-related requirements. Other significant features to consider in developing a runoff plan are natural swales, manmade drainage features, wetlands and streams as well as lakes and ponds with buffers to protect their water quality and hydrology, and natural depressions. After evaluating site features, the developer should establish in their site runoff plan the limits of development to protect landscape features to manage runoff from impervious surfaces and reduce stormwater volume using a technique in better site design referred to as site fingerprinting or minimal disturbance techniques during land development. This involves delineating and flagging the smallest site disturbance area possible to minimize the compaction of soils needed to infiltrate runoff and restricting the storage of construction equipment in these areas.⁶⁹

4.3.5.6 *Condition A.3.e.vi - Long-Term Operation and Maintenance*

Permit registrants must ensure the long-term operation and maintenance of structural stormwater controls. The permit requires the permit registrant to use a database type inventory to track and manage the operational condition of structural stormwater controls within its coverage area. This can take the form of a computerized maintenance management system or asset management system that allows for the electronic logging of O&M tasks. Ongoing maintenance is necessary to ensure that the BMPs will perform as designed over time. Inadequate maintenance of existing stormwater management controls is the primary shortcoming for most local stormwater management programs across the country. As with any infrastructure, deferred maintenance can increase costs and negatively affect receiving waters. Unmaintained BMPs will ultimately fail to perform their design functions,

⁶⁹ Prince George’s County, Maryland. 1999. *Low-Impact Development-An Integrated Design Approach*

and can become a nuisance and/or pose safety problems.⁷⁰ The permit registrant must track those permanent controls which are known to them, or for which they accept ownership, beginning no later than the permit effective date.

4.3.5.7 *Condition A.3.e.vii - Training and Education*

This permit condition requires the permit registrant to ensure that their staff are sufficiently educated regarding the selection, design, installation, operation, and maintenance of structural stormwater controls.

4.3.5.8 *Condition A.3.e.viii - Tracking and Assessment*

The permit registrant is also required to maintain records of Post-Construction Site Runoff program and summarized activities in the Annual Report.

4.3.6 *Condition A.3.f - Pollution Prevention and Good Housekeeping for Municipal Operations*

The minimum requirements for this control measure are set forth in 40 CFR § 122.34(b)(6).

Municipal operation and maintenance is an integral part of any SWMP, and, when coupled with good housekeeping and pollution prevention principles, reduces the risk of water quality problems from MS4 discharges. These provisions require the implementation of an operation and maintenance program that includes a staff training component, and articulates as its goal the prevention or reduction of pollutant runoff from municipal operations.

In this permit condition, DEQ has clarified the expectations for this minimum control measure by adding explicit provisions that address the operation and maintenance of specific activities.

4.3.6.1 *Condition A.3.f.i - Implementation Date*

This condition establishes the implementation deadline of three years from the permit effective date (i.e., February 28, 2022) for Existing Registrants and 4.5 years from the permit effective date (i.e., September 1, 2023) for New Registrant. All registrants must update their existing program and their existing runoff control program(s) and impose any new program components, within the permit coverage area. This timeframe is justified to allow permit registrants adequate opportunity to adjust their existing programs, as necessary, and ensure the required actions are sufficiently addressed within the permit coverage area

4.3.6.2 *Condition A.3.f.ii - Operation and Maintenance Strategy for Existing Controls*

This permit condition outlines the requirements for the permit registrant to inventory, track and maintain both registrant-owned controls and controls owned and operated by another entity discharging to their MS4. Additionally, the permit registrant must establish and implement maintenance schedules and inspection frequencies these BMPs.

This permit condition also established the requirement to inspect at least 50 percent the permit registrant-owned or operated catch basins and inlets within the MS4 at least once every five years, and requires appropriate cleaning and/or maintenance action based on those inspections.

⁷⁰ Hirschman & Kosco 2008; see Chapter 9.

4.3.6.3 *Condition A.3.f.iii - Inspection and Cleaning of Catch Basins*

This permit condition requires permit registrants to inspect and clean, if necessary, at least 50 percent of their catch basin during the permit term.

4.3.6.4 *Condition A.3.f.iv,v - Pollution Prevention in Facilities and Operations and Registrant-owned NPDES Industrial Stormwater Permit*

This condition requires permit registrants to review and update their operation and maintenance procedures for other municipal activities, to ensure such procedures protect water quality and reduce the discharge of pollutants through the MS4. Permit registrant-owned facilities discharging stormwater associated with industrial activity, as defined in 40 CFR § 122.26(b)(14), must obtain separate NPDES permit coverage pursuant to Schedule A.1.c.

4.3.6.6 *Condition A.3.f.vi, vii, viii - Requirements for Pesticide and Fertilizer Applications Facilities, Litter Control, and Material Disposal*

Permit registrants are required to ensure that their staff, and others operating in public areas owned or operated by the permit registrant, are appropriately handling and/or using pesticides and fertilizers used within the permit coverage area. This provision is consistent with the *NPDES General Permit for Discharges from The Application of Pesticides*.

Permit registrants are required to implement methods to reduce litter within their permit coverage area. This part further allows permit registrants to work cooperatively towards the sufficient control of trash and litter within the permit cover area, to prevent the conveyance of material through the MS4. Additionally, permit registrant must manage and dispose of all collected material in accordance with federal, state, and local requirements.

4.3.6.9 *Condition A.3.f.iv - Stormwater Infrastructure Staff Training*

This permit condition requires permit registrants to ensure that their staff has received appropriate training, such that operation and maintenance activities are conducted properly and with attention to potential water quality impacts.

4.3.6.10 *Condition A.3.f.x – Tacking and Assessment*

This permit condition requires that the permit registrant maintain records of their Pollution Prevention and Good Housekeeping for Municipal Operations program and summarized activities in the Annual Report.

5.0 SCHEDULE B - Monitoring and Reporting Requirements

5.1 Condition B.1 and 2 – Compliance Evaluation and Annual Report

The permit registrants are required to assess their compliance on an annual basis, and to document such evaluation through the submittal of an Annual Report. DEQ will provide an Annual Report template for permit registrants to use for this compliance evaluation.

At a minimum, the permit registrant must submit all reports and/or documents required by this permit to DEQ in an electronic PDF that is saved and stored on a compact disc or other portable electronic storage device. Such submittals must be sent to the addresses listed in Schedule B.4.a, and must include a hard copy cover letter that identifies the permit registrant name, unique permit identification number, staff contact information, content of the submittal, and the permit registrant's certification and signature as required by Schedule F.D.8 (Signatory Requirements).

The permit contains new provisions that will allow the permit registrant the option to submit Annual Reports and other materials or data electronically. Once it is available for use, DEQ will notify the permit registrant that they will be required to submit reports electronically. After that time, the permit registrant would no longer be required to submit paper copies of reports or documents.

Additionally, this permit conditions established the Annual Report submission deadlines.

5.3 Condition B.3 - Monitoring Requirements

Monitoring programs can be used to evaluate the effectiveness of the stormwater management program goal of reducing the discharge of pollutants to the maximum extent practicable. Although knowledge of stormwater management is continually increasing, significant knowledge gaps remain.

The federal regulations governing the NPDES permit program for small MS4s do not require monitoring of effluent from stormwater outfalls or ambient water quality monitoring of receiving streams. However, this type of monitoring is one method an MS4 can use to evaluate its SWMP and determine progress in achieving measurable goals. This condition of the permit describes the minimum requirements for conducting water quality or effluent monitoring if an MS4 chooses to pursue this method of program evaluation.

5.4 Condition B.4,5 - Submissions and Recordkeeping

The permit registrant must submit all required permit components to DEQ at the address and e-mail address provided in the permit. All submittals required to be signed and certified must be provided to DEQ as a paper copy with a wet signature.

Permit registrants are required to keep all records required by the permit for a period of at least five years, and submit such records only when requested by DEQ. The permit registrant's SWMP materials must also be available to the public; MS4 operators may charge a reasonable fee for copies, and may require a member of the public to provide advance notice of their request. As previously described in *Condition A.3.b* also requires the permit registrant to maintain and promote their SWMP materials to the public electronically via a dedicated website.

6.0 SCHEDULE C - Compliance Conditions and Dates

Compliance dates and conditions have not been included.

7.0 **SCHEDULE D - Special Conditions**

7.1 **Condition D.1 - Requirements for CWA Section 303(d) Listed Pollutants and TMDLs**

7.1.1 ***Condition D.1.a - Applicability***

DEQ developed the 303(d) list for pollutants causing the designation of a waterbody as being “water quality limited”. The designation of a waterbody as water quality limited for a pollutant means this water does not meet the narrative or numeric criteria of a water quality standard for that pollutant.⁷¹ For some of the waterbodies placed on the 303(d) list, DEQ developed Total Maximum Daily Loads identifying pollutant sources and their estimated pollutant loads. Oregon Administrative Rule 340-041-0001(2) requires DEQ to:

...continue to manage water quality by evaluating discharges and activities, whether existing or a new proposal, on a case-by-case basis, based on the best information currently available and with the limiting framework of minimum standards, treatment criteria policies set forth in this plan.

DEQ must manage water quality to protect the beneficial uses associated with water quality standards in conformity with the basin-specific water quality criteria in the following:

- OAR 340-041-0101 (Columbia Basin-Specific Criteria)
- OAR 340-041-0340 (Willamette Basin-Specific Criteria)
- OAR 340-041-0286 (Sandy Basin-Specific Criteria)
- OAR 340-041-0130 (Deschutes Basin-Specific Criteria)
- OAR 340-041-0271 (Rogue Basin-Specific Criteria)

7.1.2 ***Condition D.1.b - Performance Measures***

In the Phase II Permit issued in 2007, DEQ required that permittees establish pollutant load reduction benchmarks to evaluate, in the future, their progress toward meeting the WLA in TMDLs. DEQ will review and, if appropriate, approve the benchmarks established by the existing permittees for use in a future evaluation of progress towards meeting load and wasteload allocations. DEQ will not require permit registrants evaluate progress towards load and wasteload allocation during this permit term.

Bases on input from the MS4 Advisory Committee, DEQ integrated performance measures in *Schedule A.4.c.iv (Illicit Discharge Detection and Elimination)* and *Schedule A.4.e.iv (Post-construction Site Runoff)*. These performance measures are actions that DEQ has determined to be important for reducing TMDL and/or 303(d) listed pollutant loads and chronic illicit discharges. These measures are critical to achieve the long-term goal of achieving the water quality standards in waterbodies receiving. These conditions require permit registrants to document the elimination of chronic illicit discharges containing 303(d) listed and/or TMDL pollutants and to remove these sources using their required IDDE Program.

The Columbia Slough TMDL assigns WLAs to urban stormwater for urban stormwater discharge from the City of Wood Village. To meet this WLA the TMDL requires that the City of Wood Village implement pollutant control strategies and monitor for bacteria, phosphate, and lead. This condition’s requirement to track the application of key control actions to reduce TMDL pollutants is consistent with and supports Lower Columbia Slough TMDL and its WLA applied to urban stormwater. For other permit registrants, there are no specific monitoring requirements in the TMDLs applied to their MS4 discharge during this permit term.

⁷¹ Oregon Administrative Rule 340-041-0002(70)

7.1.3 TMDLs Applied to Permit Registrant’s Stormwater Discharge and 303(d) Listed Water Waterbodies Receiving Permit Registrants’ Stormwater Discharge

The TMDLs and 303(d) pollutants that apply to permit registrants’ MS4 discharges are summarized below. The TMDL documents relevant to permit registrant discharges are the Willamette Basin TMDLs approved by EPA during September 2006, the Molalla-Pudding TMDLs approved by EPA during December 31, 2008, the Sandy Basin TMDL approved by EPA during April 2005, the Lower Columbia Slough Watershed TMDL approved by EPA during November 1998, the Bear Creek Watershed TMDL approved by EPA during October 2007, and the Rogue Basin TMDL approved by EPA during December 2008.

7.1.3.1 Bear Creek Watershed TMDL for Bacteria (Medford, Ashland, Jackson County, Central Point, Phoenix, and Talent)

The MS4 permit for the Cities of Medford, Ashland, Central Point, Phoenix, Talent and Jackson County were under their individual permits when DEQ was developing the Bear Creek TMDL for bacteria. As a result, the Bear Creek Watershed TMDL for bacteria provides WLAs that are applicable to these MS4s. The Water Quality Management Plan for this TMDL identifies these six permit registrants and links their actions involving storm sewer systems and the siting of housing, commercial, and industrial facilities in urban areas during land use planning/permitting as sources of bacteria loading. The WLA for six existing permit registrants is expressed as a percent reduction in *E. coli* bacteria for Bear Creek and monitored tributaries of Bear Creek within their jurisdiction. These percent reductions are presented in the TMDL and reproductions of the TMDL’s Table 7 and 8 are provided below for reference.

To achieve these WLAs, this TMDL identifies the six minimum control measures required in the 1999 NPDES Phase II Rules and discussed in more detail in this Evaluation Report and Fact Sheet. The TMDL notes that DEQ may propose specific TMDL-related requirements in the NPDES MS4 Phase II Permit. This condition provides requirements to address this TMDL and, as noted above, discusses the rationale for these requirements as they relate to post-construction site runoff non-structural and structural stormwater controls and chronic sources of illicit discharges. Permit registrants operating their MS4 under these WLAs may use their actions to comply with this Permit as management strategies to meet the WLAs for stormwater.

Table 7. Bear Creek at Medford: Load Allocations and Percent Reduction Targets (Fecal Coliform)

Allocations	Range of Bear Creek Flow				
	High Flow (Above 266 cfs)	High Medium (71 to 256 cfs)	Mid-Range (39 to 70 cfs)	Low Medium (12 to 38 cfs)	Low Flow (Below 12 cfs)
Allowable Loading Capacity (Fecal Coliform Standard)	8.51x10 ¹³	5.56x10 ¹³	1.41x10 ¹³	7.82x10 ¹²	5.38x10 ¹⁰
Current Load (Fecal Coliform Org./day)	2.15x10 ¹⁴	2.62x10 ¹⁴	9.17x10 ¹³	2.26x10 ¹³	6.46x10 ¹⁰
Percent Reduction (Fecal Coliform) ¹	60.5%	78.8%	84.6%	65.4%	20.0%

Table 8. Percent Reduction Surrogate Targets for Primary Tributaries (fecal coliform)

Tributary Name	% Reduction Target ^{1,2}
Walker (n=35)	61
Neil (n=47)	55
Ashland (n=41)	38
Butler (n=29)	69
Wagner (n=27)	41
Payne (n=48)	79
Coleman (n=31)	47
Larson (n=44)	64
Lone Pine (n=24)	73

7.1.3.2 Rogue Basin TMDL (Grants Pass, Josephine County, Rogue River, and Eagle Point)

The Rogue Basin TMDL for bacteria applies to all perennial and intermittent streams, rivers, and lakes within the Rogue Basin with the exception of those in Lobster Creek Watershed, Sucker Creek Watershed, Bear Creek Watershed, and Applegate River Subbasin. In these exceptions to Rogue Basin Bacteria TMDL, TMDLs for these subbasins were completed and approved by EPA. When the Rogue Basin TMDL was approved, the stormwater discharges of the Cities of Grant Pass, Rogue River, and Eagle Point and Josephine County were not covered by a MS4 permit. However, their potential inputs to bacteria loading were considered similar to municipalities under the individual permits. In the TMDL, DEQ categorized these urban sources of bacteria as nonpoint sources. Therefore, the bacteria load allocation for this TMDL applies to their stormwater discharge as is allowable according to a November 22, 2002, EPA Memorandum on establishing WLAs for stormwater sources noted above. This LA utilizes percent reduction targets for pollutant source loading as a guide to determine the degree of improvement needed to achieve Oregon’s water quality criteria for bacteria at various locations on the Rogue River. These percent reduction targets in this TMDL are noted below and organized by season and by criterion (geometric mean and single sample maximum). Permit registrants operating their MS4 under these LAs may use their actions to comply with this Permit as management strategies to meet the applicable LA.

For Grants Pass, it is located approximately within River Mile 95 to 104 (Downstream Station: 10418). For Rogue River, it is located approximately within River Mile 110 to 112 (Downstream Stations: 10031, 10418, 10421, and 10423). For Josephine County, it is located approximately within River Mile 55-170 (Downstream Stations: 10031, 10418, 10421, and 10423).

Table 3.10. Percent Reduction Targets by Season, Rogue Mainstem Watersheds RM 86.4-138

Station name	Season and Station ID	Percent reduction to meet 126 criterion	Percent reduction to meet 406 criterion
Robertson Bridge (RM 86.4)	Summer* 10418	0	0
Gold Hill at HWY 234 (RM 117.0)	Summer* 10421	0	0
Tou Velle Boat Launch (RM 131.2)	Summer* 10031	0	0
Dodge Bridge (RM 138)	Summer* 10423	0	0
Robertson Bridge (RM 86.4)	Fall/Winter/Spring** 10418	0	66
Gold Hill at HWY 234 (RM 117.0)	Fall/Winter/Spring ** 10421	0	56
Tou Velle Boat Launch (RM 131.2)	Fall/Winter/Spring ** 10031	0	0
Dodge Bridge (RM 138)	Fall/Winter/Spring ** 10423	0	0

*Summer season = June 1 – Sept 30

** Fall/Winter/Spring season = Oct 1 – May 31

For Rogue River, it is located approximately within River Mile 0 to 1.11 (Downstream Stations: 11372, 11461).

Table 3.17. Evans Creek percent reduction targets to reach 126 *E. coli* /100ml

Applicable Criterion: 126 <i>E. coli</i> /100mL					
Station name	Station	Summer Loading*	Total % reduction	F/W/S Loading**	Total % reduction
Evans Creek at mouth (RM 0.0)	11372	608.9	79 (n=5)	61.9	0
Evans Creek at Palmerton Park (upstream of Pond-Rogue River) (RM 0.5)	11461	538.3	77 (n=6)	28.5	0
Evans Creek downstream of Wimer (RM 8.2)	11373	148	15 (n=6)	23.2	0
Evans Creek at Bridge #341 (RM 18)	11466	34.5	0	8.3	0
East Fork Evans Creek downstream of Spikenard (2.3 miles downstream of Mystery Creek) (RM 22)	30191	6.9	0	28.9	0

*Summer season = June 1 – Sept 30

** F/W/S = Fall/Winter/Spring = Oct 1 – May 31

Table 3.18. Evans Creek percent reduction targets to reach 406 *E. coli* /100ml

Applicable Criterion: 406 <i>E. coli</i> /100mL					
Station name	Station	Summer Loading*	Total % reduction	F/W/S Loading**	Total % reduction
Evans Creek at mouth (RM 0.0)	11372	1553	74 (n=5)	1550	74 (n=11)
Evans Creek at Palmerton Park (upstream of Pond-Rogue River) (RM 0.5)	11461	2419	83 (n=6)	73	0
Evans Creek downstream of Wimer (RM 8.2)	11373	275	0	108	0
Evans Creek at Bridge #341 (RM 18)	11466	93	0	58	0
East Fork Evans Creek downstream of Spikenard (2.3 miles downstream of Mystery Creek) (RM 22)	30191	36	0	96	0

*Summer season = June 1 – Sept 30

** F/W/S = Fall/Winter/Spring = Oct 1 – May 31

For Eagle Point, Little Butte Creek runs through its jurisdictional boundaries at approximately River Mile 3 to River Mile 6 (Downstream Stations: 10602; 25584)

Table 3.23. Upper Rogue River percent reduction targets to reach 126 *E. coli* /100ml

Applicable Criterion: 126 <i>E. coli</i> org/100mL					
Station name	LASAR Station Number	Summer Loading*	Summer Total % reduction	F/W/S Loading**	F/W/S Total % reduction
Little Butte Creek at Agate Rd	10602	291.0	57	100.9	0
Salt Creek at Hwy 140	23738	406.0	69	88.6	0
Nichols Branch Creek at Little Butte Creek	25591	1032.0	88	251.8	50
Lake Creek at Little Butte Creek	25594	849.3	85	139.8	10
North Fork Little Butte Creek at Little Butte Creek	25596	467.5	73	207.9	39
LickCr.@ Hwy. 140	25973	210.7	40	34.6	0
Lost Creek near mouth, park with covered bridge, Lost Creek Road (Rogue)	26634	35.5	0	17.0	0
Antelope Creek at Little Butte Creek, Antelope Creek at Hwy 62 (Little Butte, Rogue)	25584 & 26645	527.6	76	132.2	5
South Fork Little Butte Creek at Little Butte Creek	25595	246.8	49	60.1	0
Trail Creek	24477	10.3	0		

*Summer season = June 1 – Sept 30

** F/W/S = Fall/Winter/Spring = Oct 1 – May 31

Table 3.24. Upper Rogue River percent reduction targets to reach 406 *E. coli* org/100ml

Applicable Criterion: 406 <i>E. coli</i> org/100mL					
Station name	LASAR Station Number	Summer Loading*	Summer Total % reduction	F/W/S Loading**	F/W/S Total % reduction
Little Butte Creek at Agate Rd	10602	1269.5	68	1920.0	79
Salt Creek at Hwy 140	23738	1620.0	75	3683.0	89
Nichols Branch Creek at Little Butte Creek	25591	11612.4	97	3280.0	88
Lake Creek at Little Butte Creek	25594	5805.6	93	4813.0	92
North Fork Little Butte Creek at Little Butte Creek	25596	4350.0	91	3076.0	87
LickCr.@ Hwy. 140	25973	530.0	23	60.0***	0
Lost Creek near mouth, park with covered bridge, Lost Creek Road (Rogue)	26634	450.0	10	48.0***	0
Antelope Creek at Little Butte Creek, Antelope Creek at Hwy 62 (Little Butte, Rogue)	25584 & 26645	1800.0	77	733.0	45
South Fork Little Butte Creek at Little Butte Creek	25595	1310.0	69	259.0	0
Trail Creek	24477	1414.0	71.3		

*Summer season = June 1 – Sept 30

** F/W/S = Fall/Winter/Spring = Oct 1 – May 31

***number of samples n = 2

In the Rogue Basin Water Quality Management Plan, DEQ provides example management strategies to address bacteria arising from new construction and development as well as existing urban and rural development. To address post-construction runoff, DEQ identifies the development of LID ordinance, protection of riparian, wetland, and vegetation areas, and limiting the increase of impervious surfaces as effective strategies for addressing bacteria loading in stormwater. The protection of riparian, wetland, and other areas would be accomplished using non-structural stormwater controls required in the post-construction runoff section of this permit. The tracking of the application of these non-structural controls is a requirement of this permit section. Given this, these examples in the WQMP are consistent with the requirements in this condition of the permit, which draws on the post-construction site runoff condition. Specifically, for existing urban and rural development, DEQ identifies the implementation of watershed management programs to reduce runoff pollutant concentrations and volumes as well as the implementation of stormwater controls to promote infiltration, filtration, retention, and detention of stormwater. LID is a watershed management program as noted by the National Research Council in their report cited above. In addition, the post-construction site runoff conditions require permit registrants to prioritize the application of green infrastructure to promote infiltration, filtration, retention, and detention of stormwater. Moreover, in the WQMP, DEQ identifies the identification and elimination of illicit discharges and cross connections as an effective bacteria management strategy. This is a requirement of the IDDE section of this permit, and the tracking of actions to address chronic illicit discharges are part of this condition. These recommended TMDL management strategies are consistent with this condition.

7.1.3.3 *Rogue Basin 303(d) Listings (Eagle Point)*

Based on the 2010 Integrated 303(d) list, the Upper Rogue Subbasin in the Rogue Basin has several waterbodies that are listed as impaired for dissolved oxygen, pH, and sedimentation. Among these listed waterbodies is Little Butte Creek, which is within the jurisdictional boundary of the City of Eagle Point and is listed for dissolved oxygen and sedimentation. This condition and the post-construction requirements referenced in it requiring stormwater volume reduction will prevent the discharge of pollutants contributing to these water quality

impairments. If the standard for stormwater retention cannot be achieved completely on-site in a development or redevelopment, the requirement to prioritize the application of green infrastructure in the design of structural stormwater controls will help reduce the pollutant loads contributing to these impairments. As noted in the Evaluation Report for the post-construction site runoff requirements, the unit processes typically associated with green infrastructure with its focus on bioretention involves processes such as sedimentation, adsorption, filtration, and plant uptake, which will help, address low dissolved oxygen, moderate pH changes, and reduce sedimentation.

7.1.3.4 *Willamette Basin TMDL for Bacteria (Springfield, Lane County, Corvallis, Philomath, Benton County, Albany, Millersburg, Linn County, Turner, Keizer, Marion County, and Polk County)*

The Willamette Basin TMDL for bacteria applies to urban stormwater discharged from the Cities of Albany, Corvallis, Keizer, Millersburg, Philomath, Turner, and Springfield and the Counties of Benton, Lane, Linn, Marion, and Polk. This TMDL has been developed for the mainstem of the Willamette River and the Lower, the Middle, the Upper Willamette, the North Santiam, the South Santiam, Middle Fork Willamette, Coast Fork Willamette, and McKenzie Subbasins. These TMDLs require reductions in loading from urban land uses along the mainstem and throughout these subbasins. As a result, DEQ has produced separate TMDL documents for bacteria loading. The Willamette River Basin waterbodies listed as water quality limited due to bacteria are summarized in Table 2.1 below. Bacteria reduction estimates for the McKenzie River Subbasin have been translated into ranges that should be used as planning targets by permit registrants working to improve water quality under these load allocations. DEQ developed these planning target ranges since this subbasin was not analyzed for basin-wide planning purposes. Therefore, a range of 80-94 percent reductions is appropriate for urban planning and permitting for the MS4s of Springfield and Lane County. This range was derived from taking the percent reductions from the highest load reductions for urban stormwater in the analyzed subbasins (Upper Willamette was 84 percent for Amazon Creek, Middle Willamette was 94 percent for Clark Creek, Lower Willamette was 80 percent for Springbrook Creek). City of Springfield and Lane County operating their MS4 under this LA may use their actions to comply with this Permit to address this LA.

When this Willamette Basin TMDL was issued as an order, the MS4s for the Cities of Springfield, Corvallis, Philomath, Turner, and Keizer and the Counties of Lane, Benton, and Marion were not covered under an MS4 permit. As a result, these MS4s were considered as nonpoint sources during the development of TMDL allocations. DEQ applied a LA to their discharge as is allowable according to a November 22, 2002 EPA Memorandum on establishing WLAs for stormwater sources noted above. In Chapter 2 of the Willamette Basin TMDL, the LA for bacteria is expressed as a percent reduction in bacteria loads for different land uses. The percentage reductions for bacteria for waterbodies in the Upper, Middle, and Lower Willamette Subbasins are presented in Table 2.2 below using data derived from the Willamette TMDL Chapters 2, 5, 7, and 10. Permit registrants operating their MS4 under these LAs may use their actions to comply with this permit to address these LAs.

Table 2.1: Willamette Basin and Pudding Subbasin Waterbodies Water Quality Limited Due to Bacteria (2010 Integrated Report)

Subbasin	Waterbody	River Miles	Segment Length in miles	Season	Status
Lower Willamette	Fairview Creek	0 to 1.7	1.7	Year Around	TMDL approved
Lower Willamette	Johnson Creek	0 to 23.7	23.7	Fall/Winter/Spring	TMDL approved
Lower Willamette	Johnson Creek	0 to 23.7	23.7	Summer	TMDL approved
Lower Willamette	Kellogg Creek	0 to 5	5	Fall/Winter/Spring	TMDL approved
Lower Willamette	Mount Scott Creek	0 to 6.1	6.1	Fall/Winter/Spring	TMDL approved
Lower Willamette	Mount Scott Creek	0 to 6.1	6.1	Summer	TMDL approved
Lower Willamette	Phillips Creek	0 to 1.2	1.2	Fall/Winter/Spring	TMDL approved
Lower Willamette	Phillips Creek	0 to 1.2	1.2	Summer	TMDL approved
Middle Willamette	Bashaw Creek	0 to 4.8	4.8	Fall/Winter/Spring	TMDL approved
Middle Willamette	Battle Creek	0 to 9.1	9.1	Fall/Winter/Spring	TMDL approved
Middle Willamette	Battle Creek	0 to 9.1	9.1	Summer	TMDL approved
Middle Willamette	Claggett Creek	0 to 5.2	5.2	Fall/Winter/Spring	TMDL approved
Middle Willamette	Claggett Creek	0 to 5.2	5.2	Summer	TMDL approved
Middle Willamette	Clark Creek	0 to 1.9	1.9	Summer	TMDL approved
Middle Willamette	Clark Creek	0 to 1.9	1.9	Undefined	TMDL approved
Middle Willamette	Croisan Creek	0 to 6.5	6.5	Summer	TMDL approved
Middle Willamette	Glenn Creek	0 to 7	7	Fall/Winter/Spring	TMDL approved
Middle Willamette	Glenn Creek	0 to 7	7	Summer	TMDL approved
Middle Willamette	McKinney Creek	0 to 7.3	7.3	Fall/Winter/Spring	TMDL approved
Middle Willamette	Mill Creek	0 to 25.7	25.7	Fall/Winter/Spring	TMDL approved
Middle Willamette	Mill Creek	0 to 25.7	25.7	Summer	TMDL approved
Middle Willamette	Perrin Lateral	0 to 8.1	8.1	Fall/Winter/Spring	TMDL approved
Middle Willamette	Pringle Creek	0 to 6.2	6.2	Fall/Winter/Spring	TMDL approved
Middle Willamette	Pringle Creek	0 to 6.2	6.2	Summer	TMDL approved

Middle Willamette	Pringle Creek Tributary	0 to 2.8	2.8	Summer	TMDL approved
Middle Willamette	Shelton Ditch	0 to 2.2	2.2	Fall/Winter/Spring	TMDL approved
Molalla-Pudding	Pudding River	0 to 35.4	35.4	Fall/Winter/Spring	TMDL approved
Molalla-Pudding	West Fork Little Pudding River	0 to 5.1	5.1	Fall/Winter/Spring	TMDL approved
Upper Willamette	Amazon Creek	0 to 22.6	22.6	Fall/Winter/Spring	TMDL approved
Upper Willamette	Amazon Creek	0 to 22.6	22.6	Summer	TMDL approved
Upper Willamette	Amazon Creek Diversion Canal	0 to 6.6	6.6	Fall/Winter/Spring	TMDL approved
Upper Willamette	Amazon Creek Diversion Canal	0 to 6.6	6.6	Summer	TMDL approved
Upper Willamette	Amazon Diversion Canal (A3 Drain)	0 to 3.9	3.9	Fall/Winter/Spring	TMDL approved
Upper Willamette	Amazon Diversion Canal (A3 Drain)	0 to 3.9	3.9	Summer	TMDL approved
Upper Willamette	Bear Creek	0 to 10.3	10.3	Fall/Winter/Spring	TMDL approved
Upper Willamette	Bear Creek	0 to 10.3	10.3	Summer	TMDL approved
Upper Willamette	Calapooia River	0 to 42.8	42.8	Fall/Winter/Spring	TMDL approved
Upper Willamette	Coyote Creek	0 to 26.2	26.2	Fall/Winter/Spring	TMDL approved
Upper Willamette	Ferguson Creek	0 to 8	8	Fall/Winter/Spring	TMDL approved
Upper Willamette	Ferguson Creek	0 to 8	8	Summer	TMDL approved
Upper Willamette	Long Tom River	0 to 24.2	24.2	Fall/Winter/Spring	TMDL approved
Upper Willamette	Long Tom River/Fern Ridge Reservoir	24.2 to 31.8	7.6	Fall/Winter/Spring	TMDL approved
Upper Willamette	Oak Creek	0 to 21.6	21.6	Fall/Winter/Spring	TMDL approved
Upper Willamette	Spencer Creek	0 to 8.7	8.7	Fall/Winter/Spring	TMDL approved
Upper Willamette	Spencer Creek Trib	0 to 2.5	2.5	Fall/Winter/Spring	TMDL approved

Upper Willamette; Middle Willamette; Lower Willamette	Willamette River	0 to 186.4	186.4	Fall/Winter/Spring	TMDL approved
Lower Willamette	Spring Brook Creek	0 to 2.3	2.3	Fall/Winter/Spring	TMDL approved
Lower Willamette	Spring Brook Creek	0 to 2.3	2.3	Summer	TMDL approved

Table 2.2: TMDL Allocated percentage reductions for bacteria for waterbodies in the Upper, Middle, and Lower Willamette Subbasins (Data Derived from Willamette TMDL Chapters 2, 5, 6, and 10)

Subbasin/Waterbody		Land Use	% Overall Reduction	% Reduction Urban	% Reduction Agriculture
Upper Willamette (Chapter 10)					
Lower Long Tom River		Agriculture	47%	47%	47%
Luckiamute River		Agriculture	61-63%	61%	63%
Calapooia River		Agriculture	65%	65%	65%
Coyote Creek		Agriculture	66%	66%	66%
Upper Long Tom River		Ag/Ur	77%	77%	77%
A-3 Drain		Ur/Ag	33%	33%	33%
Amazon Creek		Urban	84%	84%	NA
Fern Ridge Res		----	64%	----	----
Willamette River ^a and all other streams		----	NA	65% ^b	58%
Middle Willamette (see Chapter 7)					
Mill Creek	Summer	Urban/Agri-culture	89%	89%	89%
	Fall-Winter-Spring		81%	81%	83%
Pringle Creek	Summer	Urban	90%	90%	90%
	Fall-Winter-Spring		79%	79%	79%
All other Creeks in Pringle Creek	Summer	Urban	----	92%	----
	Fall-Winter-Spring		----	84%	----
Clark Creek	Summer	Urban	94%	94%	----
	Fall-Winter-Spring		89%	89%	----
Willamette River		----	NA	75% ^b	61%
Middle Willamette River all other streams		----	NA	88% ^b	75%
Lower Willamette (see Chapter 5)					
Johnson Creek		Urban/Agri-culture	78%	78%	78%
Fairview Creek		Urban	66%	66%	----

Springbrook Creek	Urban	80%	80%	----
Willamette River ^d and all other streams	-----	----	78% ^b	78%

a = based on average of subbasin reductions by land use - see Load Allocation Section in Chapter
b = appropriate for use in MS4 permits and other planning documents.
c = based on overall analysis of subbasin samples by land use.
d = based on analysis of Johnson Creek as most urbanized waterbody, and only available agricultural reductions.

7.1.3.5 Molalla-Pudding TMDLs for Bacteria and Other Pollutants (Marion County)

The Molalla-Pudding TMDL for bacteria applies to urban stormwater discharged from Marion County. This TMDL requires reductions in loading from applicable land uses throughout this basin. The LAs expressed in percent reductions for Molalla-Pudding Waterbodies are summarized in Table 2.3 below. These TMDLs require reductions in bacteria loads from urban land uses in the Pudding Subbasin. Marion County’s actions to comply with this permit are designed to assist the County in meeting these percent load reductions. DEQ has listed other waterbodies as impaired for water quality. A TMDL has been developed by DEQ and approved by EPA to address the source of impairment. These are listed in Table 2.4 below. As noted in the Evaluation Report for the post-construction site runoff requirements, the unit processes typically associated with green infrastructure with its focus on bioretention involving processes such as sedimentation, adsorption, filtration, and plant uptake are effective for reducing the loading of a variety of stormwater pollutants. The percent reductions for iron and legacy pesticides in the LAs for this TMDL are presented in Table 2.5.

Table 2.3: TMDL Allocated Bacteria Percentage Reductions for Waterbodies in the Molalla-Pudding Subbasin (Source: **Molalla-Pudding TMDL – Chapter 3**)

Subbasin/ Waterbody	% Reduction Summer June 1 – Sept. 30	% Reduction Fall-Winter-Spring October 1 – May 31	Land Use
Pudding River at Hwy. 211 (river mile 21)	75	----	58% agriculture 34% forestry 5% urban 3% rural residential (<1% rural industrial)
Pudding River at 99E (river mile 7.3)	----	70	58% agriculture 34% forestry 5% urban 3% rural residential (<1% rural industrial)
West Fork Little Pudding River	----	92	77% agriculture 12% urban 8% rural residential 2% rural industrial/ public facility
Pudding Subbasin	87	92	Agriculture (including rural residential and industrial)
Pudding Subbasin	86	86	Urban
Pudding Subbasin	86	86	MS4

Pudding Subbasin	0	0	Forestry
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Table 2.4: TMDLs for Other Pollutants in the Molalla-Pudding Subbasin
 (Source: **Molalla-Pudding TMDL – Chapter 3**)

Waterbody	River Miles	Parameter	Season	Beneficial Uses	Status
Little Pudding River	0 to 19.1	DDE 4,4	Year Round	Human health	TMDL Approved
Little Pudding River	0 to 19.1	DDT 4,4	Year Round	Human health; Aquatic life	TMDL Approved
Little Pudding River	0 to 19.1	Dissolved Oxygen	Year Round (Non-spawning)	Aquatic life	TMDL Approved
Pudding River	0 to 35.4	DDT 4,4	Year Round	Drinking water; Aquatic life	TMDL Approved
Pudding River	0 to 35.4	Dieldrin	Year Round	Drinking water; Aquatic life	TMDL Approved
Pudding River	0 to 47.5	Dissolved Oxygen	January 1 - May 15	Resident trout spawning	TMDL Approved
Pudding River	0 to 53.8	Dissolved Oxygen	Year Round (Non-spawning)	Cool-water aquatic life	TMDL Approved
Pudding River	0 to 35.4	Iron	Year Round	Aquatic life	TMDL Approved
West Fork Little Pudding River	0 to 5.1	Dissolved Oxygen	Year Round (Non-spawning)	Cool-water aquatic life	TMDL Approved

Table 2.5: Percent reductions for waterbodies in the Pudding Subbasin (Molalla-Pudding TMDL – Chapter 3)

Waterbody	% Reduction					Land Use
Iron						
	Highest Flows 0 - 10% Exceedance Probability	High Flows 10 - 40% Exceedance Probability	Transitional Flows 40 - 60% Exceedance Probability	Low Flows 60 – 90% Exceedance Probability	Lowest Flows 90 - 100% Exceedance Probability	
Pudding River	79%	79%	79%	78%	54%	All
Zollner Creek	19%	96%	75%	75%	75%	All
Legacy Pesticides						
Pudding River and Tributaries	30% DDT 90% Dieldrin In stream total suspended solids targets (15 mg/L)					All

7.1.3.6 Willamette Basin TMDL for Mercury (Springfield, Lane County, Corvallis, Philomath, Benton County, Albany, Millersburg, Linn County, Turner, Keizer, Marion County, and Polk County)

The Willamette Basin TMDL for mercury applies to the MS4s of the Cities of Albany, Corvallis, Keizer, Millersburg, Philomath, Turner, and Springfield and the Counties of Benton, Lane, Linn, Marion, and Polk. The Willamette Basin TMDL’s objective for mercury is to reduce average fish tissue mercury concentrations in the Willamette River so the fish are safe for human consumption. To achieve this objective, DEQ has established interim water quality guidance values considering criteria and thresholds uses by the Oregon Health Authority. OHA used these criteria and thresholds when issuing fish consumption advisories. These interim guidance values represent numeric targets that are protective of the beneficial use of fish consumption. More specifically, the TMDL calculated the concentration of mercury in water that will not bioaccumulate in aquatic life of wildlife to levels adversely affecting public health, safety, and welfare.

The interim guidance values are not considered site-specific numeric criteria but rather system-wide average annual concentrations allowing DEQ to use this TMDL to restore the beneficial use of fish consumption and the protection of public health. The restoration of the beneficial use of fishing applies to the entire mainstem Willamette River and its tributaries. However, in interpreting this narrative standard involving guidance values, DEQ does not expect permit registrants to manage their stormwater discharge such that it is below the interim guidance values. Rather, the goal of this TMDL is to have permit registrants implement broad, cross-sector mercury reductions to – over time – bring water column concentrations of mercury in the Willamette Basin to the guidance values.

For nonpoint sources that include permit registrants’ MS4 discharge, the relative contribution of mercury load is estimated to be 47.8 percent for erosion of mercury containing soils and 41.8 percent for runoff of atmospherically deposited mercury. The broad mercury reduction approaches highlighted below in the Willamette

Basin Water Quality Management Plan should be designed to address these sources of loading under the permit registrants' jurisdictional control. The specific implementation requirements for the Willamette Basin TMDL for mercury are noted below in this WQMP for the Willamette Basin TMDLs. These requirements are consistent with this condition as well as the conditions for post-construction site runoff and construction site runoff. Given this, the interim LA for erosion of mercury containing soils is 44.4 kg/year and for runoff of atmospherically deposited mercury is 39.2 kg/year.

7.1.3.7 Upper Willamette Subbasin TMDL for Dissolved Oxygen (Lane County)

The Upper Willamette Subbasin for dissolved oxygen applies to Lane County's MS4. The TMDL requires reductions in loads of biological oxygen demand, nutrients, and sediment oxygen demand causing volatile suspended solids. These volatile suspended solids reduce dissolved oxygen for Amazon Creek. The reductions apply to both urban and agricultural sources with urban comprising 59 percent of the land use coverage influencing Amazon Creek. A reduction of 40 percent in biochemical oxygen demand, nutrients, and sediment oxygen demand loads applies during both wet and dry weather conditions. As noted in the Evaluation Report for the post-construction site runoff requirements, the unit processes typically associated with green infrastructure with its focus on bioretention involving processes such as sedimentation, adsorption, filtration, and plant uptake are effective for reducing the loading of a variety of stormwater pollutants including impairments associated with nutrients and pollutant discharge increasing BOD and SOD.

7.1.3.8 Water Quality Management Plan for the Willamette Basin TMDLs for Bacteria and Mercury (Springfield, Lane County, Corvallis, Philomath, Benton County, Albany, Millersburg, Linn County, Turner, Keizer, Marion County, and Polk County)

DEQ describes TMDL implementation requirements that are unique to the Willamette Basin TMDLs. These requirements include expectations related to stormwater management to address bacteria and mercury in Part 2 (TMDL-Specific Implementation Requirements) of Chapter 14. Chapter 14 covers the Water Quality Management Plan for this TMDL. The WQMP notes that stormwater discharges can be a significant source of bacteria, mercury, other 303(d) listed, and non-listed pollutants found in surface waters. As a result, DEQ established stormwater management requirements mirroring the six minimum control measures in the 1999 NPDES Phase II rule for municipalities covered by a MS4 Permit and for those not covered by this permit. The specific requirements in this condition as well as in the condition for post-construction site runoff are designed to implement these TMDL-specific requirements in the WQMP.

For example, in the listing of source categories in Appendix 14.B of the WQMP, DEQ provides management strategies permit registrants can use to fulfill OAR 340-042-0040 (4)(I)(C). This rule requires designated management agencies such as permit registrants to include strategies to meet WLA and LA in the TMDL. This requirement includes a categorization of sources and a description of the strategy proposed for each source. Categories of sources in this WQMP applicable to the jurisdictional authority of permit registrants include for existing urban development: the implementation of programs to reduce runoff pollutant concentrations and volumes from existing development and redevelopment; the preparation of a stormwater management plan to ensure that runoff from existing development is treated prior to discharge to a receiving water using controls that promote infiltration, filtration, retention, and detention of runoff; maintenance or re-establishment of the natural hydrology by maintaining pre-development peak runoff rate and average volume; and, and the identification and elimination of illicit discharges and cross connections. These examples are consistent with and summarize the intent of this condition as well as the specific requirements in the post-construction site runoff and IDDE conditions of this permit.

Similarly, for new development, categories of sources applicable to the jurisdictional authority of permit registrants include: the development and implementation of non-structural controls to reduce or eliminate the discharge of pollutants in runoff; the establishment of requirements to ensure no net increase of off-site runoff; the establishment of treatment standards for post-construction stormwater prior to its discharge to receiving waters;

the allowance for site designs that cluster homes into a smaller portion of a site; the allowance of site design techniques using existing open space and landscape areas for stormwater retention and treatment rather than the collection of stormwater; the development of an erosion and sediment control plan; the reduction of erosion and retention of sediment on-site during and after construction; limiting land disturbance of natural drainage features including buffers and vegetation; and, limiting land disturbance activities, such as clearing and grading and cut-and-fill. These examples are consistent with and summarize the intent of this condition as well as the specific requirements in the post-construction site runoff, construction site runoff, and IDDE conditions of this permit.

7.1.3.9 Pollutants Causing 303(d) Listings of Waterbodies in Subbasins of the Willamette Basin (Springfield, Lane County, Corvallis, Philomath, Benton County, Albany, Millersburg, Linn County, Turner, Keizer, Marion County, and Polk County)

In addition to the TMDLs noted above, several pollutants noted in Table 2.6 cause the water quality impairment of waterbodies in subbasins of the Willamette Basin. The MS4s of Springfield, Lane County, Corvallis, Philomath, Albany, Millersburg, Benton County, Turner, Keizer, Linn County, Marion County, and Polk County are located in these subbasins. A search of the [2010 Integrated Report Assessment Database and 303\(d\) List](#) will provide these permit registrants with detailed information to determine if a waterbody receiving their MS4 discharge is water quality impaired by the pollutants noted this table.

This condition and the post-construction and IDDE requirements referenced in it requiring stormwater volume reduction will also reduce the loading of pollutants contributing to these water quality impairments in these subbasins. In addition, the permit registrants’ action to implement the other minimum control measures required in this permit will also reduce the loading of these 303(d) listed pollutants. If the standard for stormwater retention cannot be achieved completely on-site in a development, the requirement to prioritize the application of green infrastructure in the development of structural stormwater controls will help reduce these 303(d) listed pollutants and protect base flows important to water quality. As noted in this Evaluation Report for post-construction site runoff requirements, the unit processes typically associated with green infrastructure with its focus on bioretention involving processes such as sedimentation, adsorption, filtration, and plant uptake are effective for reducing the loading of a variety of stormwater pollutants.

Table 2.6: 303(d) Listed Pollutants in the Willamette Basin (Source: 2010 Integrated Report and 303(d) Listings)

Pollutant	Subbasin	Status	Beneficial Use
Aquatic Weeds or Algae, including Harmful Algae Blooms	Lower Upper	303(d)	Water Contact Recreation, Aesthetic Quality, Fishing and Fish Consumption, Drinking Water Supply
Biological Criteria	Lower McKenzie Middle Upper	303(d)	Resident Fish and Aquatic Life
Chlordane	Lower	303(d)	Human Health
Chlorophyll a	Middle	303(d)	Water Contact Recreation, Aesthetic Quality, Fishing, Water Supply, Livestock Watering
Cyanide	Lower	303(d)	Human Health

Dieldrin	Middle	303(d)	Resident Fish and Aquatic Life, Fishing and Fish Consumption, Drinking Water Supply
Dissolved Oxygen	Upper	TMDL	Resident Fish and Aquatic Life, Salmonid Fish Spawning and Rearing
Hexachlorobenzene	Lower	303(d)	Resident Fish and Aquatic Life, Fishing and Fish Consumption, Drinking Water Supply
Nitrates	Lower	303(d)	Drinking Water
pH	Lower	303(d)	Water contact recreation; Resident fish and aquatic life
Sedimentation	McKenzie	303(d)	Resident Fish and Aquatic Life, Salmonid Fish Spawning and Rearing; Drinking Water

7.1.3.10 Molalla-Pudding 303(d) Listings for Other Parameters (Marion County)

The 303(d) listings in the Molalla-Pudding Subbasin that may apply to urban stormwater discharged from Marion County are summarized in Table 2.7 below. As noted in the Evaluation Report for the post-construction site runoff requirements and referenced in this condition, the unit processes typically associated with green infrastructure with its focus on bioretention involving processes such as sedimentation, adsorption, filtration, and plant uptake are effective for reducing the loading of a variety of stormwater pollutants.

Table 2.7: 303(d) Listings in the Molalla-Pudding Subbasin

Waterbody	River Miles	Parameter	Season	Beneficial Uses	Status
Abiqua Creek	3.3 to 20.3	Dissolved Oxygen	September 1 - June 15	Aquatic life	303(d) list
Beaver Creek	0 to 6.1	Biological Criteria	Year Around	Aquatic life	303(d) list
Bochsler Creek	0 to 0.6	Chlorpyrifos	Year Around	Aquatic life	303(d) list
Bochsler Creek	0 to 4.6	Dissolved Oxygen	January 1 - May 15	Aquatic life	303(d) list
Brush Creek	0 to 2	Dissolved Oxygen	October 15 - May 15	Aquatic life	303(d) list
Brush Creek	1.1 to 4.6	Dissolved Oxygen	Year Around	Aquatic life	303(d) list
Butte Creek	0 to 19	Biological Criteria	Year Around	Aquatic life	303(d) list
Butte Creek	0 to 6.8	Dissolved Oxygen	January 1 - May 15	Aquatic life	303(d) list
Butte Creek	11.9 to 16.9	Dissolved Oxygen	September 1 - June 15	Aquatic life	303(d) list
Little Abiqua Creek	0 to 4	Dissolved Oxygen	October 15 - June 15	Aquatic life	303(d) list
Little Pudding River	0 to 19.1	Chlorpyrifos	Year Around	Aquatic life	303(d) list
Mill Creek	0 to 12.5	Arsenic	Year Around	Human health; Aquatic life	303(d) list

Mill Creek	0 to 12.5	Biological Criteria	Year Around	Aquatic life	303(d) list
North Fork Silver Creek	0 to 10.4	Dissolved Oxygen	January 1 - May 15	Aquatic life	303(d) list
Pudding River	0 to 61.8	Biological Criteria	Year Around	Aquatic life	303(d) list
Pudding River	0 to 61.8	Guthion	Year Around	Aquatic life	303(d) list
Silver Creek	0.9 to 16.2	Dissolved Oxygen	October 15 - May 15	Aquatic life	303(d) list
Silver Creek	2 to 16.2	Dissolved Oxygen	Year Around	Aquatic life	303(d) list
South Fork Pudding River	0 to 6	Dissolved Oxygen	January 1 - May 15	Aquatic life	303(d) list
South Fork Pudding River	0 to 6	Dissolved Oxygen	Year Around	Aquatic life	303(d) list
Table Rock Fork Molalla River	0 to 12	Sedimentation	Year Around	Aquatic life	303(d) list
Teasel Creek	0 to 6.3	Biological Criteria	Year Around	Aquatic life	303(d) list
Unnamed Stream	0 to 3.7	Biological Criteria	Year Around	Aquatic life	303(d) list
West Fork Little Pudding River	0 to 5.1	Dissolved Oxygen	January 1 - May 15	Resident trout spawning	303(d) list
Zollner Creek	0 to 7.8	Chlorpyrifos	Year Around	Aquatic life	303(d) list
Zollner Creek	0 to 7.8	Endosulfan	Year Around	Aquatic life; Human health	303(d) list
Zollner Creek	0 to 7.8	Guthion	Year Around	Aquatic life	303(d) list
Abiqua Creek	3.3 to 20.3	Dissolved Oxygen	September 1 - June 15	Aquatic life	303(d) list

7.1.3.11 *Sandy Basin TMDL for Bacteria (Troutdale)*

The Sandy Basin TMDL for bacteria applies to urban stormwater discharged from the City of Troutdale. Since the MS4 for Troutdale was not covered by the NPDES MS4 Phase II Permits when this TMDL was issued as an order, this MS4 was considered as a nonpoint source during the development of TMDL allocations, and a LA was applied to its discharge as is allowable according to a November 22, 2002 EPA Memorandum on establishing WLAs for stormwater sources noted above. This TMDL notes stormwater discharged to the lower portions of Beaver Creek partly via Troutdale’s MS4 has the potential to discharge significant bacteria loads. This conclusion is based, in part, on the load duration curves indicating violations of water quality standards during wintertime runoff events. As noted in this TMDL and discussed above, this corresponds to the fact that urban stormwater is known to contain high bacteria concentrations and to be a significant source of in-stream bacteria. Moreover, this TMDL notes that summer/dry period bacteria violations suggest other sources such as sanitary sewer cross connections creating illicit discharge of sanitary waste and failing septic tanks. The LA in this TMDL is calculated as a percent reduction in the bacteria loading from identified sources compared to levels measured in

2001 to 2003. The load allocation in this TMDL for all land uses including urban land uses is an 86 percent reduction in bacteria loading.

The TMDL Water Quality Management Plan chapter of the Sandy Basin TMDL identifies potential source categories with associated proposed management strategies. Implementing these strategies would help the City of Troutdale meet of this Permit condition as well as the post-construction site runoff and IDDE Permit conditions. For example, applicable management strategies for stormwater management in the new development and construction category are planning procedures, permitting/design, and inspection as well as enforcement. For existing residential/commercial/urban development, applicable management strategies include management of storm drain systems and identification of illicit connections and illicit discharges.

7.1.3.12 Lower Columbia Slough TMDLs for Bacteria, Dissolved Oxygen, Phosphorus, Lead, DDE/DDT, PCBs, Dieldrin, and 2,3,7,8-TCDD (Dioxin) (Wood Village)

The Lower Columbia Slough TMDL for bacteria, dissolved oxygen, pH, phosphorus, DDE/DDT, PCBs, Pb, Dieldrin, and 2,3,7,8 TCDD applies to the stormwater discharge from the City of Wood Village.

Bacteria TMDL: In developing the WLAs for this TMDL, stormwater pollutant sources were estimated to contribute 10 percent of the bacteria load. Sources such as the City of Wood Village's MS4 are required to develop a bacteria management plan identifying specific technologies and BMPs to limit bacteria loads. The WLAs for combined sewer overflows is zero at all flow levels noted except during storms greater than or equal to a storm with a ten-year return frequency from May 1 through Oct. 31. For point sources such as MS4s, the bacteria management plan will be implemented through designated management agencies' NPDES permits as noted in the TMDL. These bacteria management plans must include the detection and removal of illicit discharges, control of bacteria from stormwater, and removal of sources of raw human waste, and monitoring to demonstrate compliance with the bacteria criteria. Specifically, Wood Village's bacteria management plan must include the following three strategies: detect and eliminate illicit discharges to the Slough, establish adequate monitoring to demonstrate compliance with *E. coli* criteria including measuring *E. coli* concentrations and distributions, and implement BMPs to control anthropogenic sources of bacteria in stormwater. As noted in the Evaluation Report for the post-construction site runoff requirements referenced in this condition, the numeric stormwater retention standard and the unit processes typically associated with green infrastructure with its focus on bioretention involving processes such as sedimentation, adsorption, filtration, and plant uptake are effective for reducing the loading of a variety of stormwater pollutants including bacteria will assist Wood Village with meeting its WLA.

Dissolved Oxygen TMDL: When developing the WLAs for this TMDL, DEQ determined the loading capacity for DO using the loading of biological oxygen demanding materials. DEQ found that the dominant sources of BOD to be urban runoff and airport de-icing. As noted in the TMDL, the designated management agencies were to address the WLA when complying with their MS4 permits. Under this TMDL, DMAs were required to conduct monitoring of stormwater BOD5 loads and the instream response to these loads. The monitoring was used to calibrate a water quality model to simulate the Slough's response to stormwater and de-icing fluid. Additionally, all DMAs were required to implement a BOD Control Strategy involving two to five BMPs and to demonstrate these BMPs achieve the WLA. Specifically, Wood Village is required to implement the following BMPs: provide DEQ with a description of the program designed to reduce BOD5 to the Slough and implement a program of BMPs that will reduce overall BOD5 load to achieve its WLAs. This Permit and specifically this condition are designed to assist Wood Village in meeting the WLA. As noted in the Evaluation Report for the post-construction site runoff requirements referenced in this condition, the numeric stormwater retention standard and the unit processes typically associated with green infrastructure with its focus on bioretention involving processes such as sedimentation, adsorption, filtration, and plant uptake are effective for reducing the loading of a variety of stormwater pollutants including oxygen to assist Wood Village with meeting its WLAs.

Phosphate TMDL: Although modeling indicated that a major source of nutrients to the upper slough, such as orthophosphate came from groundwater, the TMDL's loading capacity also included an allocation for stormwater. This TMDL requires the implementation of BMPs to control stormwater phosphate loading. The phosphate WLA for stormwater is dependent on flow. In this TMDL, DEQ has established 7.7 kg/day for 1.98 m³/second, 11.1 kg/day for 2.83 m³/second, and 22.1 kg/day for 5.66 m³/second. To achieve these loads, DEQ requires Wood Village to monitor water quality and implement BMPs to control phosphate loading. Specifically, in this TMDL, DEQ requires Wood Village working with other DMAs to identify a representative site in Fairview Lake (Reach 4) and Fairview Creek (Reach 5) to characterize water quality in these waterbodies to determine the effectiveness of control strategies, to identify BMPs in MS4 permit which may reduce contributions of phosphate via stormwater, and to include phosphate in the assessment of BMP effectiveness by measurement of influent and effluent dissolved orthophosphate concentrations and total phosphate concentrations. As noted in the Evaluation Report for the post-construction site runoff requirements referenced in this condition, the numeric stormwater retention standard and the unit processes typically associated with green infrastructure with its focus on bioretention involving processes such as sedimentation, adsorption, filtration, and plant uptake are effective for reducing the loading of a variety of stormwater pollutants including phosphate to assist Wood Village with meeting its WLAs.

Lead TMDL: In the development of the WLAs for this TMDL, allocations to other sources such as CSOs, groundwater, St. John's landfill, NuWay Oil Site, and the margin of safety were subtracted from the loading capacity for lead to derive the remaining allocation that was partitioned between stormwater and future growth. As noted in the TMDL, the WLAs for lead are flow based and, for stormwater, are 0.065 kg/day for 1.98 m³/second, 0.114 kg/day for 2.83 m³/second, 0.2765 kg/day for 5.66 m³/second, and 0.4397 kg/day for 8.50 m³/second. To achieve these WLAs, DEQ requires controls to reduce lead loading in stormwater. Specifically, Wood Village is required to identify and implement BMPs during compliance with this Permit to reduce lead loading and to estimate the effectiveness of BMPs to remove Total Suspended Solids. As noted in the Evaluation Report for the post-construction site runoff requirements referenced in this condition, the numeric stormwater retention standard and the unit processes typically associated with green infrastructure with its focus on bioretention involving processes such as sedimentation, adsorption, filtration, and plant uptake are effective for reducing the loading of a variety of stormwater pollutants including lead to assist Wood Village with meeting its lead WLAs.

Toxics TMDL: DEQ determined the water quality impairment of the Slough using fish tissue screening values that are used as criteria for the water quality standard for PCB, DDT/DDE, dieldrin, and dioxin (2,3,7,8-TCDD). Exceedances of fish tissue screening levels lead to the placement of the Slough on the 303(d) list for impaired waterbodies. This, in turn, prompted DEQ to develop a TMDL to address these pollutants. In developing this TMDL, DEQ determined WLA for stormwater to achieve water quality standards is 3.24×10^{-6} kg/day for DDT/DDE, 9.6×10^{-6} kg/day for dieldrin, 1.31×10^{-9} kg/day for dioxin, and 5.3×10^{-6} kg/day for PCBs. For Wood Village's MS4, the TMDL strategy for complying with these WLAs focuses on implementation of controls to reduce erosion in the Slough's basin. Specifically, in Reach 5, Wood Village must identify and implement controls as listed in the municipal NPDES permit given data suggesting sediment carried in stormwater as a source of these organic toxics. As noted in the Evaluation Report for the post-construction site runoff requirements referenced in this condition, the numeric stormwater retention standard and the unit processes typically associated with green infrastructure with its focus on bioretention involving processes such as sedimentation, adsorption, filtration, and plant uptake are effective for reducing the loading of a variety of stormwater pollutants including these toxics to assist Wood Village with meeting these WLAs.

7.1.3.13 *Pollutants Causing 303(d) Listings of Waterbodies in the Deschutes Basin (Bend)*

There are no TMDLs developed for to address sources of water quality impairment in the Deschutes Basin. However, the City of Bend's stormwater discharges to sections of the Deschutes River that are on DEQ's 2010 303(d) list for several pollutants noted in Table 2.8 below. As noted in the Evaluation Report for the post-construction site runoff requirements referenced in this condition, the numeric stormwater retention standard and

the unit processes typically associated with green infrastructure with its focus on bioretention involving processes such as sedimentation, adsorption, filtration, and plant uptake are effective for reducing the loading of a variety of stormwater pollutants including those pollutants in Table 2.8 to assist the City of Bend with reducing pollutant loads to address these water quality impairments.

Table 2.8: 303(d) Listings for the Deschutes River Receiving the City of Bend's MS4 Discharge

River Mile	Impairment
168.2 – 189.4	Turbidity
168.2 – 189.4	Sedimentation
168.2 – 189.4	Chlorophyll a
168.2 – 189.4	Dissolved Oxygen
162.6 – 168.2	pH

7.2 Definitions

The definitions provided in this permit condition provide additional clarification related to MS4-related terms, and generally reflect commonly understood and agreed upon descriptions to municipal stormwater concepts.

8.0 SCHEDULE F - General Conditions

The general conditions that are applicable to all NPDES permits are included in this section. They address operation and maintenance, monitoring and record-keeping, and reporting requirements. DEQ recognizes that some of these conditions do not readily apply to municipal stormwater discharges. However, the stormwater permits are NPDES permits, and these conditions are required for all such permits. Where a conflict exists, the general conditions included in this section are superseded by the conditions in Schedules A and D.