



State of Oregon
Department of
Environmental
Quality

Permit Evaluation Report for National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System City of Bend Phase II Individual Permit

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Final Action

Issuance of National Pollutant Discharge Elimination System (NPDES) individual permit for stormwater discharges from the City of Bend's municipal separate storm sewer system (MS4) to surface waters of the state.

Permit Category

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

Activities Covered Under the Permit

The permit covers the regulated Phase II MS4 of the City of Bend for all existing and new discharges of stormwater from the MS4 to surface waters of the state. It includes all road and street systems, maintenance yards, and other permittee-owned and/or operated facilities for the City of Bend.

Source Location

The jurisdictional boundaries and properties owned or operated by the City of Bend.

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Public Notice Summary

DEQ took public comments on the draft permit from October 20, 2021 to November 29, 2021. DEQ received 3 unique written letters and no oral comments on the draft permit.

Summary of Key Changes

This permit is the City of Bends's first MS4 Phase II individual permit issued after EPA's revision to the Phase II Stormwater Rule in 2016. The permit meets 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 original final permit:

- **Requirement to Reduce the Discharge of Pollutants** - DEQ added the following condition to the permit:

Pursuant to 40 CFR §122.34(a), the permittee 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** - DEQ modified the permit condition to include the following language: *A permittee in compliance with a National Pollution Discharge Elimination System (NPDES) permit during its term is considered to be in compliance for purposes of enforcement, with Sections 301, 302, 306, 307, 318, 403 and 405(a)-(b) of the federal Clean Water Act (CWA) and ORS 468B.030, 468B.035 and 468B.048, and implementing rules, applicable to effluent limitations, including effluent limitations based on water quality basin standards, and treatment systems operations requirements.*

- **Construction Site Runoff Control** - The 1 acre threshold was modified to:
5,000 square feet or more.

- **Post-Construction Site Runoff for New Development and Redevelopment** - *Threshold modified to 5,000 square feet or more.*

1.0 Introduction

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

DEQ issued this NPDES individual permit for stormwater discharges from the City of Bend's MS4 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 the permittee. Specifically, Bend 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 Bend's MS4 located within the urbanized area 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

1.1 Stakeholder Engagement

The draft permit was posted for comment from October 20, 2021 to November 29, 2021. Before issuing the final permit, DEQ considered and responded to all comments received and modified the proposed permit based on comments. DEQ gives equal weight to written and oral comments. The final permit will incorporate the concerns and recommendations of the stakeholders when possible.

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>

1.2 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 increased 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 a 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 regulations 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 permittee 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

⁴ DEQ’s 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).

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 System (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 this MS4 Phase II individual 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 permit, and how small MS4s obtain coverage under an available 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

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).

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 permittee's MS4 to protect water quality and establishes the MS4 permit standard. In some cases, this may mean that permit conditions are expressed in more specific terms than in the previous MS4 individual permit. These modifications are necessary to comply with the Remand Rule's requirement to use terms and conditions that are clear, specific, and measurable.

***“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.¹⁰*

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

The City of Bend owns and/or operates a storm sewer system that serves a population of 92,840, an area of approximately 33 square miles and associated facilities and maintenance yards.

The permit area is located within the Deschutes River Subbasin. The major receiving waterbody that accept stormwater drainage from the permit area is the Deschutes River.

In February 2007, DEQ issued an individual NPDES MS4 phase II permit to the permittee based on the requirement to obtain coverage from the results of the 2000 Census. The initial permit was issued on February 26, 2007 and expired on January 31, 2012. The permit has been administratively extended since its expiration on January 31, 2012. The permittee submitted a complete permit renewal application prior to their 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. The permittee submitted an updated renewal application on December 9, 2019, which aided in the formation of this permit. In addition, the Department of Environmental Quality (DEQ) coordinated with the permittee and other stakeholders in preparation for this permit.

This permit renews the permittee's February 26, 2007 NPDES MS4 Phase II permit. This is the second iteration of the permittee's municipal NPDES MS4 Phase II permit. The permit is issued pursuant to state law and implements applicable federal and state law. The federal requirements specific to NPDES permits for municipal stormwater systems are set out in 33 USC § 1342(p)(3)(B) and 40 CFR § 122.26. ORS 468.065 and ORS 468B.050 provide specific state authority for the permits. In addition, ORS 468B.035 authorizes the implementation of the federal Clean Water Act and regulations adopted under the Act.

1.4 Permit Development

The population of Bend was approximately 52,029 in 2000 and increased to 77,780 in 2007¹¹. The City was initially classified as a regulated phase II MS4 based on being designated as a United States Census Bureau “Urbanized Area” during the 2000 Census. The current population of Bend based on 2020 PSU

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

¹¹ 2007 Oregon Population Report Portland State University. Population Research Center

data is 92,840¹². The City is quickly encroaching on the population estimates required for initial designation as a phase I MS4. Phase I permittee's in Oregon have increased permit requirements as a result of urbanization's increased negative impacts on surface water quality. However, the current federal regulations do not allow designated phase II MS4s to be classified as phase I MS4s at any future point. As a result, DEQ chose to include many of the phase I requirements in this phase II permit to account for the increased population and development. Current phase I permittees were designated based on 1990 United States Census results and are included in the appendices in 40CFR122¹³.

Furthermore, 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. 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 MS4 phase II permittee including the following:

- Review of the individual MS4 Phase I and II permits in Oregon
- Review of the existing Stormwater Management Program control measures implemented by MS4 Phase I permittees and II registrants in Oregon
- Review of Annual Reports submitted by Phase I and II permittees and 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 permit (public notice November 27, 2017 – February 20, 2018)
- Comments received during the public notice of the City of Bend's MS4 Phase II individual permit (public notice October 20, 2021 – November 29, 2021)
- Comments received during the public notice of the MS4 Phase I permits for the Clackamas Group, Portland Group, Multnomah County, Gresham Group, City of Salem and City of Eugene (public notice October 23, 2020 – December 16, 2020)
- Review of Bend's current Integrated Stormwater Management Plan

The permit contains the narrative requirements applicable to the MS4 permittee 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 the permittee, 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).

1.5 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

¹² Portland State University (PSU) preliminary 2021 population estimate is 100,922. PSU Population Research Center website. Accessed on December 10, 2021. <https://www.pdx.edu/population-research/population-estimate-reports>.

¹³ See 40 CFR § 122 Subpart D Appendices F-I

Act. At a minimum, MS4 permit terms and conditions must satisfy the requirements set forth in the federal regulations at 40 CFR § 122.34(a) through (e).¹⁴

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; the permittee implementing the required actions as part of a comprehensive program; and the permittee 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.¹⁵

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 permits 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”...¹⁶

...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”¹⁷

1.6 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

¹⁴ NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016).

¹⁵ 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

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

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

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 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.¹⁸

This permit requires the permittee 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 reduction. In its broadest sense, a BMP means any type of structural or non-structural control measure or activity undertaken by the permittee in the course of implementing its SWMP.¹⁹ 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.

The permittee’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 permittee 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.

1.7 Antibacksliding Review

This NPDES permit, like its previous iterations, requires the permittee to control pollutants discharged through their MS4 to the MEP, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. This permit requires the permittee to implement a comprehensive Stormwater Management Program (SWMP) Document as the primary mechanism to achieve the MEP standard required to reduce pollutants in their respective MS4 discharges²⁰.

This 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, given the nature and scope of new and/or enhanced conditions included in the permit for each program element.

¹⁸ NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016).

¹⁹ 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).

²⁰ See 40 CFR § 122.44(k).

1.8 Antidegradation Review

Under Oregon's Antidegradation Policy for Surface Waters in Oregon Administrative Rule (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. 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.

The controls required in this MS4 Phase I permit are expected to result in discharges to the permittee's MS4s that reduce pollutants to the maximum extent practicable. The Clean Water Act provides that the level of pollutant reduction for MS4s is limited to the "maximum extent practicable" because federal law recognizes the unique nature of municipal stormwater runoff²¹.

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 permittee will implement and/or enhance an identified range of stormwater management control programs to minimize stormwater pollution discharges in stormwater runoff to and from the MS4s, including from existing and new residential, commercial, and industrial developments and permittee owned and/or operated facilities.

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, subject to the MEP standard described above. 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.

DEQ has 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 the permittee's stormwater-related conveyance system and facilities. DEQ expects the pollution reduction measures implemented by the permittee in accordance with this permit to offset any expansion of stormwater conveyance 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. In short, this permit is expected to reduce the current level of pollution discharged from the permittee's stormwater-related facilities at a level greater than projections for growth impacts. Therefore, the issuance of this permit will protect and improve existing water quality and is consistent with DEQ's antidegradation policy.

²¹ See Clean Water Act § 402(p), 33.U.S.C. §1342(p), the U.S. EPA's regulations permitting municipal stormwater discharges at 40 CFR § 122.28, and 64 FR 68722 [Dec. 8, 1999]

1.8.1 Protection of Existing and Designated Uses

The stormwater controls required in this individual 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.

1.8.2 Protection of Existing Water Quality

DEQ determined that existing water quality will 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 Bend's MS4. DEQ expects the pollution reduction measures implemented by Bend to offset any expansion of stormwater conveyance systems and outfalls. These permit requirements to implement a broad range of pollution reduction measures, including measures to address impacts from new development and significant redevelopment are expected to reduce the amount of pollution discharged. 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 loading over the five-year permit term. Over the five-year permit term, the permittee 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 Water Quality Limited Waters and Total Maximum Daily Loads

Section 303(d) of the CWA requires states to identify their impaired waterbodies. Impaired waterbodies are water quality limited and do not meet water quality standards. In Oregon, the responsibility to delegate water quality limited waterbodies rests with DEQ. The list of these waterbodies is referred to as the 303(d) list.

DEQ is also responsible for developing pollutant reduction plans for water quality limited waterbodies. Total Maximum Daily Loads (TMDLs) are pollutant load reduction plans that define WLAs for point sources and load allocations (LAs) for non-point sources of pollutants. TMDLs also specify how much of a particular pollutant can be discharged to a specific stream or segment and still meet water quality standards. Oregon's 2018/2020 Integrated Report and 303(d) list contain the water quality limited waterbodies with and without a TMDL²². The 2018/2020 Integrated Report was approved by the U.S. Environmental Protection Agency on Nov. 12, 2020 and is now current and in effect.

For MS4 discharges to waterbodies subject to a TMDL and/or listed on DEQ's 303(d) list, the permittee 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).

²² Oregon DEQ's 2018/2020 Integrated Report is available online at: <https://www.oregon.gov/deq/wq/Pages/2018-Integrated-Report.aspx>

1.10 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, 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 program elements must be documented, described, or referenced in the SWMP Document as described in Schedule A.2 of the permit.

2.0 Permit Coverage and Exclusions

This section of the permit identifies the permittee, 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 permittee, 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 January 1, 2022.

2.1.1 Receiving Water Information

The cover page also includes information about the receiving waters to which the permittee'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 permittee's jurisdiction. This reference is designed to acknowledge the existence of the TMDL as a WLA or LA. The methods by which the permittee is required to address TMDL WLAs and other allocations such as LA benchmarks identified for MS4s are described in Schedule D of the permit. There are no Total Maximum Daily Loads (TMDLs) that include Waste Load Allocations for urban stormwater for the Deschutes Subbasin at the time of permit issuance

DEQ authorizes municipal stormwater discharges to surface waters of the state from regulated small MS4s owned and/or operated by the permittee 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

This permit covers all existing and new discharges of stormwater from the Municipal Separate Storm Sewer System (MS4) to waters of the state within the City of Bend, in accordance with the requirements, limitations and conditions set forth. The permit covers stormwater discharge to rivers, streams and other surface waters of the state.

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 Eligibility for Coverage

This MS4 Phase II individual permit authorizes stormwater discharges only from Bend's MS4. This MS4 meets the MS4 definition located at 40 CFR § 122.26(b)(16) and is located in an Urbanized Area as determined by a Decennial Census.

On March 26, 2012, the Census Bureau published the final listing of Urbanized Areas based on the 2010 Census.²³ 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 method the Census Bureau uses to calculate the boundaries for Urbanized Areas differs over time and there are differences in the 2000 Urbanized Areas relative to the 2010 Urbanized Areas. Any regulated small MS4 designated into the NPDES program based on an Urbanized Area calculation for any given Census year remains a regulated small MS4, unless the MS4 requests and DEQ grants a waiver pursuant to 40 CFR § 122.32.30

3.2 Permit Coverage Area

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

3.3 Renewal Requirements

To continue permit coverage, the permittee 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.

²³ 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>.

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

3.4 Electronic System Use Requirement

Permittee must submit all required documents and payments using DEQ's electronic reporting system (Your DEQ Online) when directed to do so.

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

4.1 Condition A.1 - Authorized Discharges

This MS4 Phase II Individual 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 Individual 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. The permittee must control pollutants in the 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

A permittee in compliance with a National Pollution Discharge Elimination System (NPDES) permit during its term is considered to be in compliance for purposes of enforcement, with Sections 301, 302, 306, 307, 318, 403 and 405(a)-(b) of the federal Clean Water Act (CWA) and ORS 468B.030, 468B.035 and 468B.048, and implementing rules, applicable to effluent limitations, including effluent limitations based on water quality basin standards, and treatment systems operations requirements. The permit includes a framework for documenting, communicating, developing and submitting a plan with corrective actions for circumstances when DEQ or the permittee determines that a pollutant in the MS4 discharge is causing or contributing to an exceedance of an applicable water quality standard not already addressed by the illicit discharge and elimination (IDDE) program. This framework is appropriate to ensure any MS4 discharges that are causing or contributing to an exceedance of an applicable water quality standard are documented, investigated and managed appropriately. The actions implemented by the permittee will be based on the specifics of each situation that causes the exceedance. If a required notification pertains to an existing known long-term issue wherein corrective actions are scheduled or underway and a report has already been produced, the City may provide DEQ with the existing report to maximize efficiency. This permit does not require compliance with water quality standards. However, DEQ retains authority to require compliance with water quality standards in future permits.

4.1.3 Condition A.1.c - Limitations of Coverage

The permit limits the permittee'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.

DEQ encourages infiltration of stormwater. This permit does not authorize the discharge of stormwater to a underground injection control (UIC) system. Any owner or operator of any type of Class V UIC system must permit through Rule Authorization, a General Permit, or through a Water Pollution Control Facility 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.1d, are conditionally allowed to enter into and thus discharge from the MS4s. Such allowable non-stormwater discharges cannot be sources of pollution to the waters of the state. The permittee is 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*), the permittee must 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 permittee should refer to *Schedule A.3.c.vi* for further description of how they can determine whether a detected dry weather discharge from the MS4 is an allowable discharge.

4.2 Condition A.2 – Permittee's Responsibilities

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

The permittee is responsible for compliance with the terms and conditions outlined in the MS4 Phase II Individual Permit related to their MS4 and associated discharges. Implementation of the permit can be shared with other entities. For instance, a county government 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 as a record of accountability.

The permittee 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 the permittee to maintain adequate legal authority to implement and enforce the required SWMP control measures as allowed and authorized pursuant to applicable state law.²⁴ Without

²⁴ 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.

adequate legal authority or other mechanisms to control what enters or discharges from the MS4, the permittee 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 permittee does not have formal ordinance authority under state law, the permittee 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 permittee to exercise their legal authority in six specific ways:

1. The permittee must effectively prohibit and eliminate pollutants to the MS4 from illicit discharges and connections.
2. The permittee must effectively control spills, dumping or disposal of non-stormwater materials into the MS4.
3. The permittee must have the ability to control pollutants discharged into the MS4 from land disturbance and development activities occurring within their jurisdiction.
4. The permittee must control the contribution of pollutants from one MS4 into another, through interagency agreements as necessary or appropriate.
5. The permittee must require compliance with applicable rules within their jurisdiction.
6. The permittee must have authority to carry out inspections, surveillance, and monitoring procedures necessary to determine compliance with the permit.

The permittee must summarize their legal authorities to control pollutants in their SWMP Document as required by *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.

The permittee is required to develop, and update as necessary, a written Stormwater Management Program (SWMP) Document.²⁵ The SWMP Document summarizes the physical characteristics of the MS4 and describes how the small MS4 operator conducts the required SWMP control measures within its jurisdiction. The SWMP Document should also describe the permittee'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 permittee as an internal planning or briefing document.*

²⁵ 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."*

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

The requirement for the permittee 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 permittee may create and revise the SWMP Document as necessary to describe how the permittee 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.²⁶

The first iteration of the permittee's SWMP Document(s) must be developed with opportunity for public input, and submitted to DEQ and posted on their publicly available website no later than November 1, 2023. The SWMP Document must be updated as needed with changes submitted for review by DEQ with the Annual Report. DEQ will make every effort to review and respond to the permittee's SWMP Document submission within 60 days of submission, whenever that occurs, and the permittee may begin implementation upon approval.

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

The permittee is required to track indicator metrics and information to document and report on SWMP implementation progress. Additionally, the permit requires the permittee to establish financial support and staff capabilities to implement the SWMP control measures and other permit requirements. The permittee must 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 permittee to adopt the most efficient methods to comply with the permit requirements. DEQ encourages the permittee to establish stable funding sources to support ongoing SWMP implementation, and enter into cooperative working relationships with other permittees 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 measures 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 the City of Bend's MS4 is unique, and that each MS4 operator has different circumstances for stormwater management and pollutant control. To address these unique circumstances, the permit allows implementation flexibility while establishing clear, specific, and measurable permit requirements.

²⁶ NPDES Municipal Separate Storm Sewer System General Permit Remand, Final Rule (81 FR 89320, Dec. 9, 2016).

The permittee 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 identified the implementation deadlines.

Table 1 below summarizes program implementation schedule for the permittee.

Table 1. SWMP Control Measures Implementation Schedule

SWMP Control Measures	Implementation Deadline
Public Education and Outreach	November 1, 2023
Public Involvement and Participation	November 1, 2023
Illicit Discharge Detection and Elimination	November 1, 2023
Construction Site Runoff Control	November 1, 2024
Post-Construction Site Runoff for New Development and Redevelopment	November 1, 2025
Pollution Prevention and Good Housekeeping for Municipal Operations	November 1, 2024

The permittee must continue to implement their current SWMP controls. Upon the permit effective date, the permittee is expected to begin to integrate/develop the conditions of the permit. The permittee must fully comply with this permit no later than 180 days prior to the permit expiration date.

The mandatory SWMP control measures are:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- 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 expectations of what constitutes an adequate level of effort necessary to reduce pollutants from small regulated MS4s and meet the MS4 permit standard. Through the permit, DEQ has established consistent and appropriate stormwater management expectations for all small regulated MS4s throughout Oregon.

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

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

The permittee is required to address the public education and outreach requirements consistent with 40 CFR § 122.34(b)(1).

The permittee has conducted public education and outreach program, as part of their compliance efforts with their individual permits. The permittee has put in tremendous efforts in developing public education and outreach. DEQ encourages the permittee to continue their efforts, 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. - Implementation Dates

This condition establishes the implementation deadline of two years from the permit effective date (i.e., November 1, 2023) for the permittee.

4.3.1.2 Condition A.3.a.i,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. Where appropriate for the permittee’s community demographics and the presence of community based organizations that serve diverse audiences and/or work on environmental justice²⁷, outreach should include messaging in languages and communication methodologies used in the community to ensure diversity, equity, and inclusion in the permittee’s programs²⁸.

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

DEQ understands that not all priority groups can be engaged at the same depth and does not have an expectation that all will receive the same amount of outreach. The permittee is expected to use the flexibility afforded by the SWMP Document to prioritize outreach based on an understanding of their own community, and to shift priorities, conduct pilot testing, and engage in adaptive management as the permit cycle proceeds to make the most effective use of their budget capacity

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.

²⁷ Recommended readings on Environmental Justice are available at <https://www.epa.gov/environmentaljustice>

²⁸ DEQ Recommends EPA’s EJSCREEN Tool for reports and maps combining environmental and demographic indicators that would be of use to co-/permittees in evaluating how to organize targeting of public education & outreach efforts

4.3.1.3 Condition A.3.iii.a.B.10 - Education on Construction Site Control Measures

The permittee is required to provide educational opportunities related to the Construction Site Runoff SWMP control measures at least twice during the permit term. The permittee 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.

4.3.1.4 Condition A.3.a.iv - Tracking and Assessment

The permit does not require the permittee to conduct a formal effectiveness evaluation to measure the success of public education activities during the permit term. However, the annual report form outlines an assessment section to document whether the desired changes in targeted behavior occurred due to the education and outreach programs, and should provide information that can be incorporated in the permittee's future events. Further, DEQ acknowledges that conducting an evaluation may be difficult, particularly when considering the factors that may influence the effectiveness of an education and outreach program. The intent of this measurable goal is to document and evaluate the success of the program, by both the permittee and by DEQ, to better focus future education and outreach in subsequent permits.

The permittee 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 that small MS4 permittees comply with State, Tribal and local public notice requirements when implementing a public involvement/participation program.²⁹ 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. - Implementation Dates

This condition establishes the implementation deadline of one year from the permit effective date (i.e., November 1, 2023) for the permittee.

4.3.2.2 Condition A.3.b.ii - Publicly Accessible Website

The permittee 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 permittee'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.

²⁹ 40 CFR § 122.34 (b)(2)

4.3.2.3 Condition A.3.b.ii – Stewardship Opportunity

The permittee must continue to create a stewardship opportunity at least twice during the permit term. The permittee may partner with one or more locally relevant agencies/groups to fulfill this requirement.

4.3.2.4 Condition A.3.b.iii - Tracking and Assessment

The permittee 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 permittee 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.³⁰

The permittee has implemented an Illicit Discharge Detection and Elimination program since receiving coverage under an individual permit in 2007. As a current permittee, full implementation of this permit measure will be required by November 1, 2023

The permit prohibits the discharge of non-precipitation flows (“illicit” or “non-stormwater” flows) to the MS4s. The permittee must conduct aggressive, thorough, and systematic illicit discharge investigations and removal of illicit connections. The permittee is 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, conducting 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 measures, and the names of all waters receiving
- Prohibit through ordinance or other regulatory mechanism unauthorized non-stormwater discharges into the permittee’s MS4
- Develop and implement a plan to detect and address unauthorized non-stormwater discharges including illegal dumping into the permittee’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

³⁰ From <http://www.ecy.wa.gov/programs/wq/stormwater/municipal/phaseIww/5YR/2014mod/WWAPhaseII-Permit-2014Final.pdf>

4.3.3.1 Condition A.3.c. - Implementation Dates

This condition establishes the implementation deadline of two years from the permit effective date (November 1, 2023) for the permittee. The permittee must update their existing illicit discharge program activities to include new program components.

4.3.3.2 Condition A.3.c.i - Mapping of the MS4

The permittee is 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 MS4 map and digital inventory includes the outfall inventory, conveyance system and stormwater control locations, and the locations of chronic discharges. This purpose of this MS4 map and digital inventory is to record and verify descriptive characteristics of the MS4 system. DEQ expects that the permittee know the locations and characteristics of all outfalls that it owns/operates through mapping their infrastructure and associated assets.

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.i.A-C. While the permittee must maintain a current MS4 map and a digital inventory, the permit does not specify their required format. DEQ encourages the permittee to utilize a digital MS4 mapping system, such as an electronic geographic information system (GIS) format.

The permittee is encouraged to couple this mapping requirement with other control measures, such as the Dry Weather Screening Program and associated investigative requirements in the *Schedule A.3.c.v*.

Additionally, the MS4 map must include the location of any chronic illicit discharges. If the permittee performs on-site or septic system investigations, DEQ recommends that the permittee map this investigation and use the Center for Watershed Protection Manual to guide their on-site and/or septic system investigations.³¹

The permittee must submit their MS4 map(s) with the second Annual Report. Before this date, all maps (including GIS data layers) must be shared with DEQ upon request.

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

The permittee 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 the permittee to be able to enforce within its jurisdiction, if necessary.

The ordinance/legal mechanism does not need to cite each individual prohibition, provided the permittee'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 the permittee will leverage their existing activities such as building inspections for sanitary cross-connections, on-going stormwater and sanitary conveyance system

³¹ The permit permittee 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.

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.iii – Enforcement Procedures

This permit condition requires the permittee 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 for an effective enforcement program.

4.3.3.5 Condition A.3.c.iv.A - Illicit Discharge Complaint Response

This condition establishes DEQ's expectations for the permittee's minimum requirements related to their Program to Detect and Eliminate Illicit Discharges. The permittee 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. The permittee must respond to all complaints or reports of illicit discharges to the permitted MS4, as soon as possible, or within an average of two working days from the initial time of the permittee's knowledge of the complaint or report, unless there is a threat to human health, welfare, or the environment. For discharges, including spills, which constitute a threat to human health, welfare, or the environment, the permittee must respond within 24 hours of the permittee's knowledge of the threat. This condition also establishes timelines for the permittee 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.

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 the permittee's screening activities). Specific timelines are needed to prioritize swift investigation of actions to reduce or fully eliminate a known or newly identified problem.

The permittee is 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.

The permittee currently has 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.c.v - Dry Weather Screening Program

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

The permittee is required to continue to conduct dry weather screening to identify illicit non-stormwater flows. Permit condition A.3.c.v establishes a minimum system evaluation and dry weather screening requirement to comply with this section of the permit. As science continues to evolve, new research has emerged in the time since the last permit was issued.³² This is why the permit requires an update to the criteria for dry weather screening location selection, and sharing of information with those who perform the routine inspection, maintenance, and cleaning schedule required in Schedule A.3.f.ii (Inspection, Maintenance, and Cleaning, in Pollution Prevention for Municipal Operations), assuming different departments or staff are utilized. The SWMP Document should describe how dry weather screening location selection is based in mapped data. This information will help the permittee make informed program enhancement decisions related to potential risks posed by factors such as land use, density, impervious area, and age of infrastructure.

The permit includes the permit condition to identify or develop dry-weather field screening pollutant parameter ‘action levels’ that, if exceeded, will trigger the permittee to conduct further investigation to identify sources of illicit discharges. In identifying or developing the ‘action levels’, DEQ suggests the permittee 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 permittee’s 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 permittee locate and map the occurrences of chronic illicit discharges on their MS4 map(s).

The permittee is 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 permittee. 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 permittee. 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 permittee.

³² See, for example, *Development of Effective Procedures for Illicit-Discharge Risk Mapping* by P.R. Bender, et al. (2016), available at [https://ascelibrary.org/doi/abs/10.1061/\(ASCE\)WR.1943-5452.0000747](https://ascelibrary.org/doi/abs/10.1061/(ASCE)WR.1943-5452.0000747) ; *A low cost method to detect polluted surface water outfalls and misconnected drainage* by D.M. Chandler and D.N. Lerner (2015), available at <https://onlinelibrary.wiley.com/doi/abs/10.1111/wej.12112> ; and *Analysis and determination of optimum risk factors to prioritize illegal discharge potential in urban catchments*, by Y. Owusu-Asante (2019), available at <https://doi.org/10.1016/j.pce.2019.04.007>

Additionally, the permittee 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.vi - IDDE Training and Education

This permit condition requires the permittee 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 permittee's IDDE Program must be maintained.

4.3.3.8 Condition A.3.c.vii - Tracking and Assessment

The permittee is also required to maintain records of its IDDE program and summarize 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).

The permittee has implemented a Construction Site Runoff Program since receiving coverage under their individual permit in 2007. Previously, the permittee was required to develop a program to control stormwater runoff from construction activity through ordinances or other mechanisms 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 permittee specify erosion, sediment, and water management controls for active construction sites that result in land disturbance of less than one acre. The permit establishes the threshold of 5,000 square feet or more.

The permit further defines minimum expectations for the permittee 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 5,000 square feet or more.

To address concerns associated with the cost of plan reviews, inspections, and enforcement of controls at a greater number of sites, the permit only requires the permittee to review plans, inspect or actively enforce erosion, sediment and waste management control requirements on sites resulting in land disturbance of 5,000 square feet or more unless sediment is visible in stormwater discharge or if a complaint or report is received for that construction site. DEQ expects that the permittee will use its

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 acre 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 throughout the state 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 waste management control expectations at most active construction sites within these urban areas is an 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 MS4.³³ 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 help control pollutant loading, maintain consistency with statewide TMDLs and/or pollution prevention principles for discharges to surface waters.
- It is reasonable for the permittee 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. The permittee is 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 the permittee 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

³³ 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.

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.
- Using only a “one or more acres” site size threshold to trigger the permittee’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 between 41 and 46 percent of the single-family residential lots in the Western United States are 7,000 square feet or less.³⁴ Census data also confirms that proportionally more local building permits are issued to construction projects on small lots in urban areas.³⁵
- 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, active construction sites contribute up to 75 times more sediment than a similarly sized site either before or after construction.³⁶ In order to comprehensively prevent pollutants from the wide variety of construction activities occurring within the permit coverage areas, it is necessary that the permittee 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, three years from the permit effective date (November 1, 2024) for the permittee to update their existing program, if needed, and to impose any new program components within the coverage area.

³⁴ U.S. Census: <http://www.census.gov/construction/chars/pdf/lotsize>.

³⁵ U.S. Census: Building Permits Survey, Permits by Metropolitan Area, <https://www.census.gov/construction/bps/msamonthly.html>

³⁶ 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.

The permittee already imposes appropriately scaled erosion and sediment control requirements on construction sites that disturb less than one acre.³⁷ If the permittee must revise their existing program to specify an appropriate level of erosion and sediment control requirements for a smaller disturbance area, 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. DEQ recommends that MS4s within the same Urbanized Area 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.i - Ordinance and/or Other Regulatory Mechanism

This permit condition outlines the expected scope of the permittee's legal mechanism to reduce and prevent runoff from construction sites in its jurisdiction that disturb at least 5,000 square feet; the legal mechanism must allow the permittee to review site plans and enforce the requirements at construction sites that will result in land disturbance of 5,000 square feet.

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

These permit conditions ensure that the construction site owner/operator is informed of additional permitting requirements. As the permittee 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 permittee can work together to minimize the discharge of pollutants from construction sites.

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

This permit condition outlines written specifications to define the appropriate site level controls for construction activities within the permittee's coverage area. DEQ also establishes the requirement that the permittee develop or adopt a template 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 sites that disturb at least 5,000 ft².³⁸

The permittee is required to develop/modify a written specification, including an Erosion and Sediment Control Plan. The ESCP template, worksheet or similar document is used by construction site operators 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. It must be updated as site conditions change, must be kept on site or electronically accessible on site for reference and updating as needed during operations, maintenance of controls, and inspections. and must be made available for review by the permittee, 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 permittee has the discretion to determine how best to control sediment and other pollutants in runoff from these small sites.

³⁷ See Response to Comments document for a tabulated data.

³⁸ 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.

4.3.4.5 Condition A.3.d.iv - 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 5,000 square feet. This review can be conducted using a checklist or similar process to consider and address potential water quality impacts from the site activities.

4.3.4.6 Condition A.3.d.v - Construction Site Inspections

At a minimum, the permittee must inspect and enforce their requirements at construction sites occurring in their permit coverage area that will result in land disturbance of 5,000 square feet or more.

4.3.4.7 Condition A.3.d.vi - Enforcement Procedures

The previous permit allowed the permittee wide flexibility in developing and implementing procedures for the enforcement of control measures. This permit condition requires the permittee 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 enforcement program must be able to obtain proactive compliance from chronic violators of the construction site's program requirements. The program must also include sanctions adequate to obtain compliance from recalcitrant violators. All of these elements are essential to effectively enforcing and ensuring that erosion and sediment controls are implemented and maintained.

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

This condition requires the permittee 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 permittee's Construction Site Runoff program.

4.3.4.9 Condition A.3.d.viii - Tracking and Assessment

The permittee 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 the permittee to control post-construction stormwater pollutant discharges into their MS4. 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 permits 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.

The permittee has implemented a Post-Construction Site Runoff Control program since receiving coverage under their individual permit 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. The permittee must establish a site performance standard with a Numeric Stormwater Retention Requirement (NSRR) to target natural surface or predevelopment hydrologic function to retain rainfall on-site and minimize the offsite discharge of precipitation utilizing structural stormwater controls that infiltrate, capture and/or evapotranspire stormwater. This condition requires the permittee 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 the permittee 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 the permittee 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.³⁹ Many of these Co-Permittees are smaller than the Phase II permittee, yet they have demonstrated the capacity to administer this requirement. Specifically, DEQ requires the permittee 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 the permittee's stormwater discharge. The waterbody receiving Bend's stormwater discharge is on the 303(d) list for several water quality impairments requiring the need for the development of a TMDL. The 303(d) water quality impairments are summarized in this document, see *Section 7.1.3, TMDLs Applied to Permittee's Stormwater Discharge and 303(d) Listed Waterbodies Receiving Permittee's Stormwater Discharges*. DEQ has established the lower threshold for post-construction stormwater controls to reduce stormwater volume and to treat stormwater discharges to ensure the permittee's stormwater management efforts will contribute significantly to collective efforts to attain water quality standards as a permittee's community experiences further urbanization.

Urbanization's impact on water quality with its creation of impervious surfaces is well established.⁴⁰ 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 issues permits for stormwater, transportation, and utility projects which result in the creation of 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.

DEQ recognizes that time and resources will be necessary to update, refine, and enact post-construction site requirements within the permittee's jurisdictional boundaries in response to this permit condition. As a result, this condition requires the permittee 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. - Implementation Deadline

This condition establishes the implementation deadline of four years from the permit effective date (i.e., November 1, 2025). The permittee must update their existing program, if needed, to impose any new program components within the coverage area.

³⁹ The Clackamas County Co-Permittees are a Phase I permittee.

⁴⁰ U.S. EPA. The Causal Analysis/Diagnosis Decision Information System Volume 2: Sources, Stressors and Responses.

The permittee already imposes appropriately scaled post-construction runoff control requirements on project sites that disturb less than one acre. DEQ recommends that if Deschutes County is designated as an MS4 in the future, the two MS4s 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.i - Ordinance and/or Other Regulatory Mechanism

This permit condition outlines the expected scope of the permittee’s legal mechanism to reduce discharges of pollutants and address stormwater runoff from new development and redevelopment sites within its jurisdiction that create or replace 5,000 square feet or more of impervious area.

4.3.5.3 Condition A.3.e.ii – Prioritization of Low Impact Development and Green Infrastructure

To meet the Numeric Stormwater Retention Requirement (NSRR) intended to target predevelopment hydrologic function while conserving limited resources, the condition specifically requires the permittee to prioritize low impact development (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 minimizing 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 the permittee 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.⁴¹ Concerning its broad applicability, the National Menu of Stormwater BMPs cites - among other resources for the permittee - 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.^{42 43} 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.

4.3.5.4 Condition A.3.e.iii - 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.⁴⁴ 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 the permittee 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 the practices and that it would finalize guidance to implement this performance standard in expanded TMDL Implementation Plans addressing post-construction elements for stormwater management.^{45,46} Given the TMDLs issued and 303(d) listings for waterbodies receiving the permittee's

⁴¹ Battiata, Joseph, Kelly Collins, David Hirschman, and Greg Hoffmann. 2010. *The Runoff Reduction Method*. Journal of Contemporary Water Research & Education, Issue 146

⁴² EPA. 2005. *Using Smart Growth Techniques as Stormwater Best Management Practices* (EPA 231-B-05-002)

⁴³ 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.

⁴⁴ 68722 Federal Register/Vol. 64, No. 235/Wednesday, December 8, 1999

⁴⁵ *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.⁴⁵

⁴⁶ Oregon DEQ. *TMDL Implementation Guidance: Guidance for Including Post-Construction Elements in TMDL Implementation Plans*. March 20, 2014

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 as 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 from the City of Salem'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.⁴⁷

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 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.

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

Permit condition A.3.e.iii.A outlines the options for developing site performance standards. The first option, building on the approach established in the previous Phase I and II permits, requires that the permittee establish a numeric site performance standard with an on-site stormwater retention requirement, referred to in Schedule A.3.e.iii.A of the permit as the Numeric Stormwater Retention Requirement (NSRR). 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 intent is to establish an appropriate retention requirement methodology, so that the permittee may add a compatible and practicable retention requirement to their existing post-construction program if one is not already in place, tailor their program to better accommodate local conditions and watershed priorities, and reduce discharges of pollutants and control stormwater runoff from new development and redevelopment project

⁴⁷ City of Salem NPDES MS4 *Permit Evaluation Report & Fact Sheet*. December 30, 2010.

sites. The permittee may include evapotranspiration and reuse of stormwater in accounting for retention volumes, but are not required to exhaust those options prior to allowing treatment or offsite options. The permittee may collaborate with other entities to implement this condition in an effort to leverage their collective resources and establish uniform requirements in a region for the regional development community. Further guidance for leveraging limited resources to develop post-construction site runoff requirements in compliance with this condition may also be found in the *Western Oregon Low Impact Development Guidance Manual*, in the EPA publication of the Center for Watershed Protection's *Managing Stormwater in Your Community; a Guide for Building An Effective Post-Construction Program*, and in sources cited on the previous page.^{48 49}

When site constraints prevent the on-site retention of the stormwater volume specified in the NSRR, the permittee should treat the runoff volume up to a specified water quality design storm prior to its discharge off-site using one or more structural stormwater controls. Discharge offsite should target natural surface or predevelopment hydrologic function as much as practical using one of several methods. Given the requirement to retain a portion of the stormwater from a rain event on-site, the size of the treatment structural stormwater control(s) will be reduced, generating cost savings in material and the space needed for this control. 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.⁵⁰

4.3.5.4.2 Condition A.3.e.iii.B.1 - Treatment Standard

Compliance with the stormwater treatment requirement is necessary when designing a structural stormwater control to treat the stormwater runoff volume specified in the permittee's design standards prior to its discharge off-site. Specifically, this condition requires that the permittee establish treatment standards for structural stormwater controls in order to ensure effective removal of total suspended solids (TSS) prior to discharge, and the permittee may include an upper and lower bound to their treatment requirements that reflect the practical limitation of an engineered control (e.g., 80% removal of TSS for typical influent concentrations ranging from 100 mg/L to greater than 200 mg/L). The permittee should establish treatment requirements that target the equivalent water quality benefits as onsite retention of stormwater from new development or redevelopment sites using a model, such as a continuous simulation model or other evaluation tool. The permittee should encourage the use of treatment trains of structural post-construction stormwater controls, and must give priority to implementing green infrastructure before considering hardscaped structural stormwater controls for stormwater treatment. Detention ponds are not a sufficient stand-alone treatment method and must be combined with other structural stormwater controls. Treating the volume of water that would otherwise be retained under the NSRR satisfies the retention requirement. The runoff discharged off-site should target predevelopment hydrologic function in terms of rate, duration, and volume in order to minimize the potential for hydromodification impacts off-site. The permittee 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 for other pollutants. Pollutants such as mercury and nutrients will likely be captured when using the TSS treatment standard.⁵¹ More importantly, when evaluating options for a structural stormwater control, this condition requires the permittee to prioritize the use of green

⁴⁸ <https://www.oregon.gov/deq/wq/tmdls/Pages/TMDLs-LID.aspx>

⁴⁹ EPA. 2008. *Managing Stormwater in Your Community; a Guide for Building An Effective Post-Construction Program* (EPA 833-R-08-001)

⁵⁰ U.S. EPA Green Infrastructure Cost-Benefit Resources Webpage <https://www.epa.gov/green-infrastructure/green-infrastructure-cost-benefit-resources>

⁵¹ National Research Council. 2009. *Urban Stormwater Management in the United States*. The National Academies Press, Washington, D.C.

infrastructure (GI), because research emphasizes the value to urban stream ecology of treatment, even with simple and inexpensive soil columns, especially in terms of the survivability of salmon and invertebrate populations in urban streams.⁵² ⁵³In addition, 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 permittee's discharge⁵⁴ ⁵⁵. 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.

This permit condition's 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 review of trends in stormwater management in the previous decade.⁵⁶ The Minnesota review noted shifts in statewide post-construction stormwater managements reflected in the stormwater requirements in Wisconsin, Pennsylvania, New York, Vermont, Maryland, and Washington. These shifts 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 used a numeric retention standard, 28 percent use a narrative retention standard, and 22 percent used numeric treatment standards to address specific pollutants.⁵⁷ This is a 32 percent increase from the number of states using a numeric retention standard in 2014.⁵⁸ The site performance standard in this condition brings Oregon's permit in line with standards across the country and EPA's guidance.

4.3.5.4.3 Condition A.3.e.iii.B.2 - Structural Stormwater Control Design and Specifications

For sites that utilize the treatment option to satisfy the NSRR, this permit condition requires the permittee 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 permittee must identify conditions where the implementation of Green Infrastructure or equivalent approaches may be impracticable.

The permittee may adopt specifications created by another entity that complies with this requirement.

⁵² McIntyre, J. K., Edmunds, R. C., Redig, M. G., Mudrock, E. M., Davis, J. W., Incardona, J. P., Stark, J. D., and Scholz, N. L. (2016). Confirmation of Stormwater Bioretention Treatment Effectiveness Using Molecular Indicators of Cardiovascular Toxicity in Developing Fish. *Environmental Science & Technology*, 50(3), 1561–1569. <https://doi.org/10.1021/acs.est.5b04786>

⁵³ Spromberg, J. A., Baldwin, D. H., Damm, S. E., McIntyre, J. K., Huff, M., Sloan, C. A., Scholz, N. L. (2016). Coho salmon spawner mortality in western US urban watersheds: Bioinfiltration prevents lethal storm water impacts. *Journal of Applied Ecology*, 53(2), 398–407. <https://doi.org/10.1111/1365-2664.12534>

⁵⁴ Urban Waterways – Bioretention Performance, Design, Construction and Maintenance. North Carolina State and AT&T State University Cooperative Extension.

⁵⁵ EPA. 1999. Storm Water Technology Fact Sheet: Bioretention (EPA 832-F-99-012)

⁵⁶ Minnesota Stormwater Manual. 2005. Issue Paper D: *Unified Stormwater Sizing Criteria for Minnesota V.6 Final*

⁵⁷ Association of Clean Water Administrators. March 21, 2016. *The Weekly Wrap*. Volume VII., Issue 10

⁵⁸ 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

4.3.5.4.4 Condition A.3.e.iii.C – Offsite Mitigation Alternative Compliance

The permit condition allows for offsite mitigation or for projects unable to fully meet the NSRR and/or treatment standard alternative.

The permittee may choose to allow offsite alternatives for projects based on factors of technical infeasibility or site constraints. The determination that the NSRR and/or treatment standards cannot be achieved at the project site must be based on review criteria and cannot be based solely on increased cost. The offsite alternatives must account for retention or treatment at least equal to the NSRR volume not met onsite.

For project sites requesting alternative compliance, the permittee must require and subsequently evaluate the written technical justification documenting the infeasibility or site constraints, which prevent the onsite management of the runoff amount stipulated in the NSRR. The written technical justification must be in the form of a site-specific hydrologic or design analysis conducted and endorsed by an Oregon registered Professional Engineer or Oregon Certified Engineering Geologist.

If the permittee agrees that alternative compliance with the retention requirement is necessary, meaning retention of or treatment up to the NSRR volume is not feasible, the permittee must require that the site operator use one or more of the stormwater mitigation options outlined in the Offsite Stormwater Mitigation Options below for any portion of the NSRR not retained or treated.

4.3.5.4.5 Condition A.3.e.iii.D – Offsite 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 permittee with multiple pathways to mitigate the water quality impacts associated with the increase in stormwater arising from urban development.

In this condition, the permittee is required, at minimum, to offer one of the mitigation options to site operators. DEQ has concluded that providing more options will give the permittee 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 increases the flexibility in reducing pollutant loading. This approach is also consistent with trends in the Phase II post-construction stormwater requirements as demonstrated by other states such as West Virginia and Tennessee.⁵⁹ In considering stormwater mitigation options, the permittee 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)*⁶⁰

⁵⁹ U.S. EPA. 2015. *MS4 General Permit and the Six Minimum Control Measures – A Compendium of Permit Requirements*. (Draft)

⁶⁰ 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*

- *Creating Clean Water Cash Flows – Developing Private Market for Green Stormwater Infrastructure in Philadelphia*⁶¹

Along with providing flexibility for permit compliance, this stormwater mitigation requirement will also support the permittee’s efforts to reduce the amount of pollutants entering the MS4. This is achieved by placing emphasis on the more reliable and cost-effective approaches to pollutant load reduction including measures to reduce stormwater volume. Stormwater mitigation will, therefore, better support the permittee’s efforts to comply with water quality standards.

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

- Off-site mitigation
- Groundwater replenishment projects

The option of off-site mitigation at another site offers the permittee 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 permittee 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 permittee. The permittee 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 permittee’s stormwater system. Moreover, to minimize additional administrative costs, the O&M tracking mechanism should be used by the permittee to record performance mitigation projects and water quality impacts of development at another location.

This condition offers other off-site mitigation options that, if utilized by the permittee, 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 permittee. 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 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. As a larger permittee with greater administrative capacity and a greater pool of potential mitigation sites, the permittee should 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 permittee 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

⁶¹ 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*

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 permittee 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 the permittee develops a payment-in-lieu program, the permittee 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 permittee'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 the 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 permittee 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 permittee'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 stormwater volume credits within the permittee's jurisdiction. The opportunity to generate these credits by maximizing the stormwater retained on a site, in turn, creates an incentive for the permittee or developer to pursue groundwater replenishment projects. This requirement will also help support the permittee's 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.⁶²

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

This condition requires the permittee 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, that result from the creation or replacement of 5,000 square feet or more of impervious surface. 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 permittee must have the authority to deny projects when it determines

⁶² Water Environment Research Foundation. 2015. *Pathways to One Water – A Guide for Institutional Innovation*

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 the permittee 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 permittee's post-construction site runoff plan submittal requirements should include as an initial step prioritizing non-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.⁶³

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

The permittee must ensure the long-term operation and maintenance of structural stormwater controls installed in compliance with this permit. In addition, the permittee must implement a strategy that includes documented efforts to obtain legal authority allowing the permittee to inspect and require effective operation and maintenance of privately owned and operated structural stormwater controls that discharge to the MS4, to the extent allowable under state and federal law. The permit requires the permittee 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 structural stormwater 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, and can become a nuisance and/or pose safety problems.⁶⁴ The permittee must track those permanent structural stormwater controls installed in compliance with this permit beginning no later than the permit effective date.

⁶³ Prince George's County, Maryland. 1999. *Low-Impact Development-An Integrated Design Approach*

⁶⁴ Hirschman & Kosco 2008; see Chapter 9.

4.3.5.7 Condition A.3.e.vi - Training and Education

This permit condition requires the permittee 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.vii - Tracking and Assessment

The permittee 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. - Implementation Date

This condition establishes the implementation deadline of three years from the permit effective date (i.e., November 1, 2024) The permittee must update their existing program including their existing runoff control program(s) and impose any new program components, within the permit coverage area. This timeframe is justified to allow the permittee 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.i - Operation and Maintenance Strategy for Existing Structural Stormwater Controls

This permit condition outlines the requirements for the permittee to inventory, track and maintain both permittee-owned controls and controls owned and operated by other non-MS4 entities discharging to the permittee's MS4. The permit condition applies to existing structural stormwater controls installed or permitted by the permittee prior to the effective date of this permit. Additionally, the permittee must establish and implement maintenance schedules and inspection frequencies. The O&M strategy for existing structural stormwater controls must meet the long term O&M requirements in Schedule A.3.e.vi but not the site performance standards outlined in Schedule A.3.e.iv.

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

Permit condition A.3.f.ii requires the permittee to establish a program for the systematic inspection, maintenance, and cleaning of the permittee's MS4, designed to maximize debris and pollutant removal, and verify proper operation of all its municipal structural treatment controls designed to reduce pollutants (including floatables) in stormwater discharges to or from its MS4s and related drainage structures. An Asset Management strategy that supports permittee-determined cleaning frequencies, based on our levels-

of-service and other relevant factors, must be included or referenced in the SWMP. DEQ encourages the use of integrated asset management and field data collection software, such as GIS applications for use in phones that import field updates back to the permittee's database, for tracking and adaptive management purposes. Keeping accurate records of maintenance, cleaning, and inspection activities is a vital part of such a program, and many options exist to facilitate record keeping such as ESRI Collector, Survey123, and Explorer. Such recordkeeping allows for flexibility in adaptive management, such that the permittee may change the inspection process every year to complement or reflect the findings of the previous year's inspections. The permittee may establish an inspection prioritization system for catch basins and other structural MS4 elements, and establish alternate inspection frequency every year, provided the permittee describes all relevant factors it uses to target and prioritize its inspections to specific areas of its MS4 in the SWMP Document or another document cited/referenced therein. DEQ recognizes that it may not be feasible to inspect all catch basins in a system within the permit term, which is why the permit allows for the permittee to prioritize appropriate levels of service, which may be based on a multitude of factors (e.g., "hot spots," land use, equity metrics, age of infrastructure, etc.), so long as the permittee describes or includes by reference its rationale in the SWMP Document.

4.3.6.4 Condition A.3.f.iii-iv - Pollution Prevention in Facilities and Operations and Permittee-owned NPDES Industrial Stormwater Permit

This condition requires the permittee to review and update their operation and maintenance procedures for other municipal activities it conducts, to ensure such procedures protect water quality and reduce the discharge of pollutants through the MS4. Permittee-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.

4.3.6.5 Condition A.3.f.v – Winter Operations and Maintenance Program

Schedule A.3.f.v requires controls for winter maintenance activities. As climate conditions continue to change, so must the approaches taken to ensure the safety and security of people and the environment. The permittee will continue to implement a winter maintenance program to provide safe roadways for commuters. DEQ is establishing reporting requirements for winter maintenance material use and storage, as a way to begin to understand if, how and where they impact water resources in Oregon. The permittee must ensure that materials used for winter maintenance activities in municipal operations are stored and used appropriately, and develop a Winter Maintenance Strategy specifically for maintenance of roads and streets if one does not already exist.

DEQ recognizes that the use of de-icers and anti-icing materials is not restricted to municipalities, and that as with pesticides, private use of de-icing and anti-icing materials may outweigh the amounts used by the MS4 permittee. The goal of the winter maintenance condition in the permit is to document how the permittee uses and stores materials for winter management. As more information is available, DEQ will be able to analyze trends and impacts as it relates to road maintenance programs. DEQ will use that information to make future policy decisions about this activity and/or assess related impacts to surface waters.

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

The permittee is required to ensure that their staff, and others operating in public areas owned or operated by the permittee, 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*.

The permit requires the permittee to reduce the discharge of pollutants from permittee owned or operated streets, roads and highways and in the management of operating or closed municipal landfills or other treatment, storage or disposal facilities for municipal waste. In addition, controls for application of pesticides, herbicides and fertilizers in public rights-of-way and at permittee-owned facilities are required. DEQ encourages the adoption of Integrated Pest Management (IPM)⁶⁵ approaches through policy or ordinance as well as SOPs for permittee staff and contractors.

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

4.3.6.7 Condition A.3.f.ix – Flood Control, Transportation and other Infrastructure

The permittee must continue to assess flood control, transportation, and other infrastructure projects during planning stages in order to identify and mitigate potential negative impacts on or to enhance benefits for the water quality of receiving water bodies. This permit does not require the permittee to take action with respect to flood control itself and does not seek to impose flood control responsibility on the permittee.

4.3.6.8 Condition A.3.f.x. Stormwater Quality Retrofit Strategy

The historic focus of stormwater management in urban areas in Oregon was generally related to drainage problems and flooding. As a result, water quality impacts caused by urbanization and the related stormwater quality management issues have increasingly been documented. Stormwater retrofits help improve water quality by providing stormwater treatment in locations where practices previously did not exist or were ineffective. DEQ acknowledges that it may take decades or longer to address the water quality impacts from existing infrastructure, and the application of strategies based on new research can speed progress.

Recent research, for example, has suggested that despite much lower impervious surface area, roads with a higher volume of traffic are more closely correlated than other land uses with higher pollutant loads and with Coho salmon mortality regardless of antecedent dry period duration, indicating that motor vehicles may be more a source than impervious areas, and that Coho in more urbanized areas are more vulnerable

⁶⁵ IPM is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment. IPM techniques could include biological controls (e.g., ladybugs and other natural enemies or predators); physical or mechanical controls (e.g., hand labor or mowing, caulking entry points to buildings); cultural controls (e.g., mulching, alternative plant type selection, and enhanced cleaning and containment of food sources in buildings); and reduced risk chemical controls (e.g., soaps or oils). For more information on IPM in Oregon, visit <https://agsci.oregonstate.edu/oipmc/resources>.

to nonpoint source pollution irrespective of the timing, intensity, or frequency of storms⁶⁶. Other work found that although untreated highway runoff was often lethal to salmon and invertebrates, this lethality was eliminated when the runoff was filtered through soil media in bioretention columns⁶⁷. Additional research has shown that even the car tire derived chemical 6PPD-quinone can be removed effectively using these Green Stormwater Infrastructure (GSI) approaches which include infiltration⁶⁸. Findings like these may inform shifts in strategies and priorities for retrofits in the future, so it is important to evaluate retrofit and hydromodification strategies periodically, and to share with DEQ and the municipal stormwater community how priorities have already shifted to improve effectiveness.

This permit condition requires the permittee to begin developing a stormwater retrofit strategy, including objectives and rationale. In addition, the permit requirements direct the permittee to develop a Stormwater Retrofit Strategy Document to summarize current efforts evaluate new stormwater control measures to improve water quality. The information that is identified in the Stormwater Retrofit Strategy Document will be used in the development of requirements in subsequent permits.

4.3.6.9 Condition A.3.f.ix - Stormwater Infrastructure Staff Training

This permit condition requires the permittee 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 – Tracking and Assessment

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

⁶⁶ Feist, B. E., Buhle, E. R., Baldwin, D. H., Spromberg, J. A., Damm, S. E., Davis, J. W., & Scholz, N. L. (2017). Roads to ruin: Conservation threats to a sentinel species across an urban gradient. *Ecological Applications*, 27(8), 2382–2396. <https://doi.org/10.1002/eap.1615>

⁶⁷ McIntyre, J. K., Davis, J. W., Hinman, C., Macneale, K. H., Anulacion, B. F., Scholz, N. L., & Stark, J. D. (2015). Soil bioretention protects juvenile salmon and their prey from the toxic impacts of urban stormwater runoff. *Chemosphere*, 132, 213–219. <https://doi.org/10.1016/j.chemosphere.2014.12.052>

⁶⁸ Committee on Natural Resources, Subcommittee on Oversight and Investigations U.S. House of Representatives. (July 15, 2021). Written Testimony of Jenifer McIntyre, Ph.D.

5.0 SCHEDULE B - Monitoring and Reporting Requirements

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

The permittee is 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 the permittee to use for this compliance evaluation.

At a minimum, the permittee 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. and must include a hard copy cover letter that identifies the permittee's name, unique permit identification number, staff contact information, content of the submittal, and the permittee's certification and signature as required by Schedule F.D.8 (Signatory Requirements).

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

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

DEQ may extend the due date for the annual report in the event of extraordinary circumstances including, but not limited to, pandemic, wildfire, earthquake, flood, or other natural disaster provided the permittee requests an extension in writing and provides all documentation available regarding the specific impacts as to why the November 1 deadline cannot be met. In that circumstance, DEQ will respond to the extension request in writing and will document any revised annual report due date when applicable.

5.2 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.

5.3 Condition B.4,5 - Submissions and Recordkeeping

The permittee 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.

The permittee are required to keep all records required by the permit for a period of at least five years from the start of the permit compliance action date or for the term of this permit, whichever is longer. This period may be extended at the request of DEQ at any time. The permittee must submit such records only when requested by DEQ. The permittee'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, *Condition A.3.b* also requires the permittee 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.⁶⁹ 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 340-041-0130 (Deschutes Basin-Specific Criteria)

7.1.2 Condition D.1.b - Performance Measures

Based on input from the MS4 Advisory Committee received during MS4 phase II general permit development, DEQ integrated performance measures in *Schedule A.3.c.v (Illicit Discharge Detection and Elimination)* and *Schedule A.3.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 the permittee 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.

For the permittee, there are no specific monitoring requirements during this permit term.

7.1.3 TMDLs Applied to Permittee’s Stormwater Discharge and 303(d) Listed Waterbodies Receiving Permittee’s Stormwater Discharge

There are no TMDLs developed to address sources of water quality impairment in the Deschutes Basin.

⁶⁹ Oregon Administrative Rule 340-041-0002(70)

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

There are no TMDLs developed 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 2018/2020 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

Assessment Unit	Impairment
OR SR 1707030104 05 102628	Turbidity and Sedimentation
OR SR 1707030108 02 102627	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.