Oregon
Tina Kotek, Governor

Department of Environmental Quality
Northwest Region Portland Office/Water Quality
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May 4, 2023

Greg Geist
Water Environment Services
150 Beavercreek Rd Ste 430
Oregon City, OR 97045

CERTIFIED MAIL 7021 1970 0001 7502 8761
RETURN RECEIPT REQUESTED

RE: Major modification to NPDES MS4 Permit no. 101348
File no. 108016
Permit no. 101348
EPA no. ORS108016
Facility: WES (Clackamas Co. Service District #1) Municipal Stormwater MS4
Multnomah County

DEQ has made the following corrections to the Water Environment Services' National Pollutant Discharge Elimination System Permit no. 101348

The addition of language related to pesticide requirements in Schedule B.1 is a major modification subject to public notice as detailed in OAR 340-045-0055(2). DEQ received comments during the public notice period. Changes were made to the proposed permit modification based on comments received. DEQ response to comments memorandum is attached with your permit modification.

Pursuant to OAR 340-045-0055(4), this modification will become effective May 5, 2023 unless WES requests a hearing within 20 days. A request for a hearing must be made to the DEQ director in writing and state the grounds for the request. Any hearing will be conducted as a contested case hearing in accordance with ORS 183.413 through 183.470 and OAR 340-011. If a hearing is requested, the existing permit continues in effect until a final order is issued.

If you have any questions, please contact Ryan Johnson at ryan.a.johnson@deq.oregon.gov. I may also be reached at 503-229-6991.

Sincerely,

Christine SVETKOVICH

Christine Svetkovich
Northwest Region Administrator

W/Enc: corrected permit modification, fact sheet modification and response to comments
ec: Source File, Portland Office, DEQ
Ryan Johnson, DEQ
WQ Data Crew, DEQ
ORMS

Individual Permit

National Pollutant Discharge Elimination System
Municipal Separate Storm Sewer Systems
Phase I Individual Permit
Modification #1

State of Oregon Department of Environmental Quality

www.oregon.gov/DEQ; Search "MS4"

Oregon Department of Environmental Quality
Stormwater Program
700 NE Multnomah St., Suite 600
Portland, OR 97232

DEQ initiated major permit modification of Schedule B.1 to modify the monitoring required for pesticides.

Issued pursuant to Oregon Revised Statute 468B.050 and Section 402 of the Federal Clean Water Act

Issued to:

Clackamas County	City of Gladstone
City of Happy Valley	City of Johnson City
City of Lake Oswego	City of Milwaukie
City of Oregon City	City of Rivergrove
City of West Linn	City of Wilsonville
Oak Lodge Water Services District	Water Environment Services

Permit No.: 101348
File No.: 108016

Major Receiving Streams:

Basins Willamette River
Sub-basins Lower Willamette River, Clackamas River, Tualatin River
Streams Abernathy Creek, Barlow Creek, Beaver Creek, Boardman Creek, Carli Creek, Clackamas River, Cow Creek, Deer Creek, Fanno Creek, Johnson Creek, Kellogg Creek, Livesay Creek, Mt. Scott Creek, Newell Creek, Oswego Lake, Park Place Creek, Pecan Creek, Phillips Creek, Richardson Creek, River Forest Creek, Rock Creek, Sieben Creek, Springbrook Creek, Tanner Creek, Trillium Creek, Tryon Creek, Tualatin River, Willamette River, and other creeks and tributaries, named and unnamed, to which the co-permittees' MS4s discharge.

Wasteload Allocations (if any):

A Total Maximum Daily Load (TMDL) that includes waste load allocations (WLAs) for urban stormwater has been established for the Willamette River Basin, including the Lower Willamette River, Clackamas River and Tualatin River subbasins, Springbrook Creek, and Oswego Lake. Waste load allocations are listed on the next page and addressed in Schedule D of this permit.

Sources Covered By This Permit

This permit covers all existing and new discharges of stormwater from the Municipal Separate Storm Sewer Systems (MS4s) within the services boundaries of the incorporated cities or within the service areas of Water Environment Services (WES), and Oak Lodge Water Services District that are within the Portland Metro Area's Urban Growth Boundary (UGB), in accordance with the requirements, limitations and conditions set forth.

Christine SVETKOVICH

Christine Svetkovich Northwest Region Administrator	May 4, 2023 Issuance Date	May 5, 2023 Effective Date

WLAs Per Co-Permittee Under This Permit

DMA/Permittee Name	Final Revised Willamette Basin Mercury TMDL/WQMP (2019-DEQ)	TMDL for Mercury in the Willamette Basin, OR (2019-EPA)	Willamette Basin Mainstem Bacteria TMDL (2006)	Willamette Basin TMDL: Lower Willamette Subbasin (2006)	Tualatin TMDL (2012)	Sandy Basin TMDL (2005)
Gladstone	Total mercury	Total mercury	E.coli	E.coli		
Johnson City	Total mercury	Total mercury	E.coli	E.coli		
Lake Oswego	Total mercury	Total mercury	E.coli	E.coli	Bacteria, Chlorophyll a (Total Phosphorous), Dissolved Oxygen, pH	
Milwaukie	Total mercury	Total mercury	E.coli	E.coli, DDT		
Oak Lodge Water Services District	Total mercury	Total mercury	E.coli	E.coli		
Oregon City	Total mercury	Total mercury	E.coli	E.coli		
Rivergrove (WES)	Total mercury	Total mercury			Bacteria, Chlorophyll a (Total Phosphorous), Dissolved Oxygen, pH	
Clackamas County	Total mercury	Total mercury	E.coli	E.coli, DDT		E.coli
Happy Valley	Total mercury	Total mercury	E.coli	E.coli, DDT		
Water Environment Services	Total mercury	Total mercury	E.coli	E.coli		
West Linn	Total mercury	Total mercury	E.coli		Bacteria, Chlorophyll a (Total Phosphorous), Dissolved Oxygen, pH	
Wilsonville	Total mercury	Total mercury	E.coli			

More information on TMDLs in Oregon is available at https://www.oregon.gov/deq/wq/tmdls/Pages/default.aspx

PERMITTED ACTIVITIES

Until this permit expires, is modified or revoked, the co-permittees are authorized to discharge municipal stormwater to surface waters of the state only in conformance with the requirements, limitations and conditions set forth in the following schedules. Where conflict exists between specific conditions (found in Schedules A-D) and general conditions (Schedule F), the specific conditions supersede the general conditions.

Unless specifically authorized by this permit, another National Pollutant Discharge Elimination System permit, or other applicable state or federal permit, any other direct or indirect discharges to waters of the state is prohibited, including discharges to an underground injection control system.

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SCHEDULE A - CONDITIONS FOR MUNICIPAL STORMWATER DISCHARGES

1. Authorized Discharges

Subject to the terms and conditions of this permit, the co-permittees are authorized to discharge municipal stormwater to surface waters of the state from their MS4, within the defined permit coverage area.

This permit also conditionally authorizes discharges from the co-permittees' MS4s, which are categorized as allowable non-stormwater discharges in Schedule A.1.d.

a. Requirement to Reduce the Discharge of Pollutants

The co-permittees must continue to implement, adaptively manage, 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 requirements of the Clean Water Act. Compliance with this permit and implementation of the DEQ-approved SWMP Document in accordance with Schedule A.2, establishes the MEP requirement, unless DEQ modifies the permit as provided in Oregon Administrative Rule (OAR) 340-045-0055 to require additional controls.

The co-permittees are responsible for compliance within their respective jurisdictions as identified in this permit, and are not responsible for compliance outside of their jurisdictions.

b. Water Quality Standards

Compliance with all permit requirements constitutes compliance with applicable water quality standards as established in OAR 340-041.

If a co-permittee or DEQ determines that a pollutant in a co-permittee's MS4 discharge is causing or contributing to an exceedance of an applicable water quality standard based on site-specific credible evidence, the co-permittees must take the following corrective actions:

i. Within 48 hours of becoming aware of or being notified of the exceedance, the co-permittee must begin to investigate the cause of the exceedance;

ii. Within 30 days of becoming aware of the exceedance, the co-permittee must notify DEQ in writing of the exceedance (for on-going or continuing exceedances, a single written notification will fulfill this requirement); and

iii. Within 60 days of becoming aware of or being notified of the exceedance, the co-permittee must submit a report to DEQ that documents the following:

(A) The results of the investigation, including the date the exceedance was discovered or the date that the co-permittee was notified by DEQ;

(B) A description of the conditions that are known or suspected to have caused or contributed to the exceedance; and

(C) Corrective actions taken or planned, if any, including the date corrective action was completed or is expected to be completed.

DEQ will review the report submitted and either approve it or require modifications. The co-permittees must implement the corrective action(s) in accordance with the schedule approved by DEQ. DEQ may require a timeline and enforceable milestones for completion of the corrective actions. The details of all corrective actions implemented associated with Schedule A.1.b.iii must be included in the subsequent annual report.

If the exceedance is due to an illicit discharge and the co-permittee confirms that the required response per Schedule A.3.c has occurred, the requirements listed in Schedule A.1.b.i., ii, and iii are not required, though the details of the illicit discharge and response must be included in the subsequent annual report in the illicit discharge section.

If the co-permittee determines that the exceedance is already being addressed by actions associated with implementation of a DEQ-approved Total Maximum Daily Load (TMDL) Implementation Plan, the co-permittee shall submit a report to DEQ with the next annual report that documents the following:

iv. The results of the investigation, including the date the exceedance was discovered;
v. A description of the conditions that are known or suspected to have caused or contributed to the exceedance; and
vi. The applicable actions of the co-permittee's DEQ-approved TMDL Implementation Plan that were or are being implemented.

c. Limitations of Coverage

The permit does not authorize:

i. Stormwater discharges associated with industrial activities [as defined in 40 CFR §122.26(b)(14)] or stormwater associated with construction activities [as defined in 40 CFR §122.26(b)(14)(x) and (b)(15)]. Such discharges are regulated through DEQ's NPDES Industrial Stormwater General Permits and DEQ's NPDES Construction Stormwater General Permits; or another appropriate NPDES permit.
ii. Stormwater discharges to underground injection control (UIC) systems.

d. Allowable Non-Stormwater Discharges

The co-permittees must effectively prohibit non-stormwater discharges into the MS4s unless such discharges are otherwise permitted under this subsection, another NPDES permit or other applicable state or federal permit, or are otherwise exempted or authorized by DEQ. The permit does not authorize the discharge of non-stormwater from the MS4, except where such discharges satisfy one of the following conditions:

i. The non-stormwater discharge is regulated under a separate NPDES permit.

ii. The non-stormwater discharge is categorized as an authorized or allowable non-stormwater discharge listed below:
   (A) Uncontaminated water line flushing.
   (B) Landscape irrigation. For co-permittee owned or operated areas landscape irrigation will be considered allowable only if pesticides and fertilizers are applied in accordance with manufacturer's instructions.
   (C) Diverted stream flows.
   (D) Uncontaminated groundwater infiltration (as defined at 40 CFR § 35.2005(20)) to separate storm sewers.
   (E) Rising groundwaters.
   (F) Uncontaminated pumped ground water.
   (G) Potable water sources (including potable groundwater monitoring wells and draining and flushing of municipal potable water storage reservoirs).
   (H) Startup flushing of groundwater wells.
   (I) Foundation, footing and crawlspace drains (where flows are not contaminated).
   (J) Uncontaminated air conditioning or compressor condensate.
   (K) Irrigation water.

(L) Springs.
(M) Lawn watering.
(N) Individual residential car washing.
(O) Charity car washing (provided that steam, and heated water are not used, and that washing is restricted to the outside of the vehicle with no rinsing or washing of engines, transmissions, or undercarriages). Co-permittees should consider requiring that only phosphate-free soaps/detergents are used and provide educational materials on the harmful effects that other chemicals, soaps, detergents, and heated water or steam can cause.
(P) Flows from riparian habitats and wetlands.
(Q) Dechlorinated swimming pool discharges including hot tubs (heated water must be cooled for at least 12 hours prior to discharge). Swimming pool and hot tub discharges with other pollutants such as bromine and copper may not be discharged to the MS4.
(R) Fire hydrant flushing and emergency firefighting activities.
(S) Street and pavement washwaters, including for bridges or pedestrian bridges (provided that chemicals, soaps, detergents, steam, or heated water are not used). Co-/permittees should also consider requiring that areas to be washed first be swept prior to washing, and sweepings collected for proper disposal outside the MS4 system.
(T) Routine external building wash-down (provided that chemicals, soaps, detergents, steam or heated water are not used).
(U) Water associated with dye testing activity.
(V) Discharges of treated water from investigation, removal and remedial actions selected or approved by DEQ pursuant to Oregon Revised Statute (ORS) Chapter 465.
(W) Any other discharge deemed as *de minimis* by DEQ.

If any of these allowable non-stormwater discharges are or becomes a significant source of pollutants, the co-permittee must prohibit that discharge or require implementation of appropriate best management practices (BMPs) to reduce the discharge of pollutants associated with the source before discharge to the MS4.

2. Permittee's Responsibilities

Each co-permittee is responsible for permit compliance related to its permit coverage area, or where this permit requires the specific co-permittees to take an action.

a. Coordination Among Other Public Entities and Joint Agreements

i. A co-permittee may work with or delegate implementation of one or more stormwater management program control measure to other regulated MS4's or entities. The co-permittees are responsible for compliance with any permit conditions that another entity fails to implement.
ii. If a co-permittee elects to work with or delegate implementation of one or more SWMP control measures to another co-permittee or entity, there must be a written agreement between the co-permittee and the other entity memorializing the delegation. This agreement must be made available to DEQ upon request.

b. Maintain Adequate Legal Authority

No later than December 1, 2024 the co-permittees must adopt, update, and maintain adequate legal authority through ordinance(s), code(s), interagency agreement(s), contract(s), and/or other mechanisms to control pollutant discharges into and discharges from its MS4 and to implement and enforce the conditions of this permit, to the extent allowable pursuant to the respective authority granted under state law.

If existing ordinances or regulatory mechanisms are insufficient to meet the criteria required by this permit, the co-permittees must adopt new ordinances. If a co-permittee does not have the authority to adopt ordinances, the co-permittee must utilize all relevant regulatory mechanisms available to it as allowed pursuant to applicable state law.

c. SWMP Document

The co-permittees must develop and maintain written Stormwater Management Program Documents (referred to as SWMP Documents), which describe in detail how the co-permittees implement the required control measures in this permit and reduce the discharge of pollutants. The SWMP Document (whether shared by co-permittees or separate) must be maintained over the course of the permit term and must describe programs and BMPs or refer to publicly available documents detailing the co-permittees' schedules for implementation of any control measure components to be developed during the term of this permit. The SWMP Document is subject to approval by DEQ, and is a requirement of this permit.

Documentation of the actions or activities required by this Permit or described in the SWMP Document must be submitted to DEQ upon request. If any requirement of this permit is being fulfilled by an agreement with another entity in accordance with Schedule A.2.a, the SWMP Document must describe how the requirement is being fulfilled and refer to or include any written agreements describing each party's role.

The co-permittees must make the first iteration of the SWMP Document(s) available for public review prior to submission to DEQ, by at a minimum, posting to the publicly accessible website required in Schedule A.3.b.i. The SWMP Document is due to DEQ on December 1, 2022, after which DEQ will review and approve the submission or require modification(s) of it. The final approved version of the SWMP Document must thereafter be made available to the public through the co-permittees' websites. If DEQ notifies a co-permittee that changes to the SWMP Document are necessary pursuant to Schedule A.2.c or A.2.f, the notification will offer the co-permittees an opportunity to propose alternative program changes to meet the objectives of the requested modification. The co-permittees must implement the approved SWMP Document(s).

The DEQ-approved Stormwater Management Plan currently in effect at the time of this permit renewal should continue to be implemented until the SWMP Document has been approved by DEQ.

d. SWMP Information and Metrics

The co-permittees must track activities and document program implementation of the SWMP control measures (e.g., the number of inspections, enforcement actions, and/or types of public education actions, etc.), and cite relevant information and metrics, reflecting the specific reporting period, in each Annual Report. These metrics should be used by the co-permittees for adaptive management purposes, and where they indicate a trend of reduced effectiveness or performance (e.g., fewer citizens engaged by outreach efforts) the co-permittees are required to consider whether programmatic improvements can be made to reverse the trend.

e. SWMP Resources

Each co-permittee must provide adequate finances, staff, equipment, and other support capabilities to implement the control measures and other requirements outlined in this permit.

f. Review and Modification of the SWMP Document

The co-permittees must continue to follow an adaptive management approach developed under the previous permit iteration in order to assess and modify, as necessary, any or all existing SWMP components and adopt new or revised SWMP components to achieve reductions in

stormwater pollutants to the MEP. In addition to elements required on particular schedules by this permit (i.e., Schedules A.3.c.v, A.3.d.v, and A.3.e.ii) co-permittees may update actions and/or activities described in the approved SWMP Document for adaptive management purposes in accordance with the following procedures:

i. Modifications that add elements to the approved SWMP Document may be made by the co-permittees at any time. A description of any modifications shall be included in the Annual Report for that year.

ii. Modifications to delete, adjust, or replace elements in the approved SWMP Document with an alternate action or activity may be made by the co-permittees at any time. Modification must be supported by documentation to be submitted to DEQ with the subsequent annual report, which must include:

(A) An analysis of why the new action is an appropriate alternative from the standpoint of effectiveness, feasibility and/or cost; and,

(B) Expectations on the effectiveness of the replacement action or activity.

3. Stormwater Management Program Control Measures

Until the SWMP Document required per Schedule A.2.c. is approved by DEQ, the co-permittees must continue to implement all existing SWMP control measures appropriate to their jurisdictions, and, after the effective date of the permit, must begin to revise their SWMP control measures, as needed, in order to implement any new control measure components required by this permit.

Table 1 identifies required due dates for new program control measures. DEQ may extend the due date(s) or implementation date(s) for any individual stormwater management plan control measure in the event of any extraordinary circumstances including but not limited to pandemic, wildfire, earthquake, flood or other natural disaster provided that the co-permittee requests an extension in advance and provides all documentation available regarding the specific impacts as to why the deadline cannot be met. In that circumstance, DEQ will respond to the extension request and will document any revised due date(s) when applicable.

a. Public Education and Outreach

The co-permittees must continue to implement a documented public education and outreach strategy to inform the public about the impacts of stormwater discharges on receiving waterbodies and the actions that they can take to reduce pollutants in stormwater runoff. The education and outreach strategy must identify pollutants of concern, the priority audience(s), specific education and/or activities, the entity or individual responsible for implementation, and be designed to address pollution from municipal stormwater within the co-permittees' communities. The strategy may incorporate elements of cooperative efforts undertaken with other regulated MS4s or efforts by other groups or organizations and must be included in the SWMP Document directly or by reference and be prepared to initiate implementation upon DEQ's approval of the SWMP Document.

i. Education and Outreach Program

The co-permittees' public education and outreach programs must include educational materials, activities and/or actions for the community. At a minimum, educational efforts should prioritize and focus on audience groups listed in Schedule A.3.a.iii, as applicable to the co-permittees' community and water quality concerns. The goal of the education and outreach program is to change the behaviors and practices by the public and the business community that cause or contribute to adverse stormwater impacts on receiving waters and

to identify and remove barriers to adopting alternative behaviors and practices, if possible. The program should promote information and specific actions to:

(A) Increase audience understanding of specific stormwater quality issues in the waterways of the community and which pollutants, products, and behaviors contribute to the problems;

(B) Communicate and demonstrate how to reduce pollutant discharges in stormwater runoff;

(C) Encourage participation by the public in the protection and enhancement of local waterways and wildlife, as well as responsibility in behaviors to prevent illicit discharge from entering the MS4 or impacting receiving waters; and,

(D) Promote, publicize, and facilitate reporting of illicit discharges.

To be considered adequate, the public education and outreach program must at a minimum include the activities in Schedule A.3.a.ii-iv below.

ii. Stormwater Education Activities

The co-permittees must contribute to, distribute, or offer educational messages and/or activities to or for the public at similar levels of effort as those associated with the previous permit.

Educational messages or activities may include printed materials (e.g., brochures or newsletters); electronic materials (e.g., social media, websites, or e-newsletters); mass media (e.g., utility bill inserts, transit advertisements or signage in highly trafficked corridors, newspaper articles or public service announcements); workshops, or other educational events or formats.

The co-permittees may use existing materials if applicable. Giving consideration to the community's overall demographics and the prioritized audiences' demographics, the co-permittees must consider delivering messages in other languages and using other culturally relevant information and techniques to ensure diversity, equity, and inclusion, as applicable.

iii. Priority Audiences and Topics

The co-permittees must at minimum, conduct, participate in, and/or contribute to education and outreach to the priority audiences identified below, as applicable to the community and water quality concerns. The co-permittees must focus efforts on conveying relevant messages using the priority topics identified below or stormwater issues of significance in their community.

(A) Priority Audiences:
1. General public (e.g., renters, homeowners, homeowner associations, youth, and other groups);
2. Local elected officials, land use planners, engineers, developers, and/or employees of the co-permittees responsible for implementing the SWMP, as appropriate;
3. Construction site operators (See Schedule A.3.iii.B.10 below);
4. Businesses (including industrial and commercial facilities); and,
5. Any other groups/entities as appropriate.

(B) Pollution Reduction Topics:
1. Impacts of illicit discharges on receiving waters and how to report them.
2. Appropriate practices or techniques to avoid adverse water quality impacts due to impervious surfaces.

3. BMPs for proper use, application, storage, and disposal of pesticides, herbicides, fertilizers, and other household chemicals.
4. BMPs to avoid or reduce discharge of litter and trash to the MS4 or surface waters.
5. BMPs for recycling programs.
6. BMPs to avoid discharges from power washing, carpet cleaning, and auto repair and maintenance.
7. Low-impact development and green infrastructure approaches.
8. Watershed awareness education, including how storm drains lead to local creeks and rivers, and potential impacts to fish and other wildlife.
9. Operation & Maintenance practices for privately owned stormwater quality management facilities.
10. Construction site control measures and BMPs, including information on where in-depth training on erosion prevention and sediment control can be obtained
11. Stormwater issues of significance identified by co-permittees.

iv. Tracking and Assessment

The co-permittees must describe the program in the SWMP Document and document implementation of the Public Education and Outreach requirements in each Annual Report. In each Annual Report, the co-permittees must summarize or report on metrics and/or tracking measures related to their implementation of the program (e.g., estimated number of members of each priority audience reached with each educational activity or type of educational activity, measurable goals reached, etc.), and plans for the following year.

b. Public Involvement and Participation

The co-permittees must continue to implement a public involvement and participation program that provides opportunities for effective public participation in the maintenance, further development, and/or adaptive management of each co-permittee's stormwater program. The co-permittees must comply with their public notice requirements, if any, when implementing a public involvement participation process.

i. Publicly Accessible Website

The co-permittees must each maintain and promote a publicly accessible website with information on the co-permittee's SWMP implementation, the SWMP Document, contact information, and educational materials. The website must be maintained with current information, and be reviewed for accuracy at least annually and kept updated. The co-permittee's website must incorporate the following:

(A) Illicit discharge complaint or report requirements (see Schedule A.3.c.v).

(B) Drafts of documents listed in this permit as requiring public comment (i.e., the SWMP Document in Schedule A.2.c, the Industrial/Commercial Facilities Strategy in Schedule A.3.g.ii, and the Monitoring Plan in Schedule B.1.c) must be posted and available for public comment for a minimum of 30 days, and comments must be considered prior to final issuance. Final reports, plans and other documents relevant to the MS4 programs must also be posted, as appropriate.

(C) Links to ordinances, policies and/or guidance documents related to the construction, post-construction, and commercial/industrial stormwater management control programs, including education, training, licensing, and permitting.

(D) Contact information for relevant staff, including phone numbers, mailing addresses and email addresses.

ii. Stewardship Opportunity

The co-permittees must continue to create or partner in the development and/or implementation of stewardship opportunities to foster public involvement. The co-permittees shall provide at least one of the following stewardship opportunities or develop a more locally relevant equivalent:

(A) Community watershed restoration or cleanup activities,

(B) Storm drain marking or stenciling,

(C) Volunteer monitoring,

(D) Riparian plantings/facility enhancement,

(E) Neighborhood low-impact development activities,

(F) Adopt-A-Road or similar programs aimed at green infrastructure vegetation management,

(G) Clean up events associated with waterways,

(H) Community advisory committee, or

(I) Other locally relevant opportunities.

iii. Tracking and Assessment

The co-permittees must describe the programs in the SWMP Document(s) and document implementation in each Annual Report. In each corresponding Annual Report, the co-permittees must summarize or report on metrics or tracking measures related to implementation of the program.

c. Illicit Discharge Detection and Elimination

The co-permittees must continue to implement and enforce a comprehensive program to detect and eliminate illicit discharges into the MS4, to the extent allowable by state laws. In addition, co-permittees must continue to implement procedures to prevent, contain, and respond to spills, as well as seepage from sanitary sewer system, which may discharge into the MS4 in accordance with all applicable federal and state laws, including proper notification to the Oregon Emergency Response System (OERS). An illicit discharge is any discharge to an MS4 that is not composed entirely of stormwater. Conditional exceptions are identified in Schedule A.1.d. Procedures and processes required below must be documented or referenced in the SWMP Document.

i. MS4 Map

(A) MS4 Map and Digital Inventory

The co-permittees must continue to maintain and update a current map of their MS4. The MS4 map may be in the form of a web-based or digital inventory, and must include the location of outfalls and an outfall inventory, conveyance system and structural stormwater control locations, and chronic illicit discharges as applicable (see Schedule A.3.c.i.B-D, below), as well as annual dry-weather priority screening sites as designated under Schedule A.3.c.v (Dry Weather Screening Program). The co-permittees must delineate their MS4s by storm sewer drainage basin or catchment area, as appropriate, and identify the location and characteristics of any ongoing dry weather flows.

(B) Outfall Inventory

The co-permittees must maintain inventories of all the known outfall locations, owned or operated by the co-permittees. The outfall location must include a unique identifier (e.g., alphanumeric code identifier), any geographic information (e.g., streets, manholes, or milepost markers) necessary to locate these outfalls in the field, and the name(s) of the receiving water(s). To the extent data are available, co-permittees should include outfall characteristics such as presence of dry weather flows and details of the collection area for each (e.g., approximate acreage and relative proportions of land uses contributing to the outfall, impervious area contributing stormwater, tree cover, etc.).

(C) Conveyance System and Stormwater Control Locations

The co-permittees must continue to maintain maps of the MS4 collection system and all known structural stormwater controls. Where applicable, features must include a unique identifier (e.g., alphanumeric code identifier) and any geographic information (e.g., streets, manholes, or milepost markers) necessary to locate these features in the field.

(D) Chronic Illicit Discharges

The co-permittees must include the location(s) of any known chronic illicit discharge(s), as necessary for ongoing investigations or repeat/recurring issues in dense areas or commercial districts, for example, as applicable.

Co-permittees must submit or provide access to their updated MS4 map that includes the appropriate descriptions with the initial SWMP Document No later than December 1, 2022, and thereafter must make map(s) and digital inventories available to DEQ upon request.

ii. Ordinance and/or Other Regulatory Mechanisms

The co-permittees must continue to prohibit non-stormwater discharges into the MS4 (except those conditionally allowed by Schedule A.1.d) through enforcement of an ordinance or other regulatory mechanism, to the extent allowable under state law. The co-permittees must implement appropriate enforcement procedures and actions to ensure compliance.

iii. Enforcement Procedures

The co-permittees must continue to implement their enforcement and response procedures as developed under the previous permit. The SWMP Document must describe or reference the enforcement and response procedures. The procedures should describe how repeat violations are addressed; the timelines for compliance; specifically address commercial and industrial facilities or activities as described in Schedule A.3.g of this permit; and consider factors such as the amount and type of pollutant discharged, and whether the discharge was intentional or accidental, if known, and whether the discharge could have been prevented.

iv. Program to Detect and Eliminate Illicit Discharges

At a minimum, the co-permittees' programs to detect and eliminate illicit discharges must include the following activities:

(A) Illicit Discharge Complaints or Reports

The co-permittees must publicize a phone number, webpage, and/or other communication channel that the public can use to report illicit discharges. The complaint/reporting communication channel must be answered or responded to by trained staff during normal business hours and must include a system to record or capture incoming complaints or reports during non-business hours.

(B) Response to Complaints or Reports

The co-permittees must respond to all complaints or reports of illicit discharges that have the potential to impact receiving waters through the MS4s. For discharges, including spills, which constitute a threat to human health, welfare, or the environment, the co-permittees must respond within 24 hours or as soon as possible after becoming aware of it if notified during weekends or after hours. Spills, or other illicit discharges, that may endanger human health or the environment must be reported in accordance with all applicable federal and state laws, including notification to the OERS (at 800-452-0311). For all other reports of illicit discharges, the co-permittees must respond within an average of two working days, and no greater than four working days.

The co-permittees' complaint response and the associated investigation must at minimum, use the following timelines:

1. Initial Investigation or Evaluation

   Conduct an initial investigation or evaluation within five working days or refer the complaint to the appropriate agency.

2. Ongoing Illicit Discharges

   If the elimination of the illicit discharge will take more than 15 working days due to technical, logistical, or other reasonable issues, the co-permittees must, within 20 working days of source identification, develop and begin implementation of an action plan to eliminate the illicit discharge in an expeditious manner.

   Upon confirmation of an illicit connection, the co-permittees must use the Enforcement Procedures in a documented effort to eliminate the illicit connection within six months, unless otherwise approved by DEQ, to the extent allowable under state law. All known illicit connections to the MS4 must be eliminated.

3. Ongoing Illicit Discharges involving Capital Improvements

   If the elimination of the illicit discharge involves the repair or replacement of the co-permittees' wastewater or storm sewer conveyance systems or other capital improvements, the co-permittee must remove the source of the illicit discharge within three years of the date of its identification.

(C) Notification of Other Authorities

If the illicit discharge originates from or discharges to outside the co-permittees' jurisdictional authority, the co-permittee must notify the proper jurisdictional authority as soon as practicable, and at least within one working day of becoming aware of the illicit discharge.

(D) Complaints Tracking

The co-permittees must continue to maintain a procedure or system to document all complaints or reports of illicit discharges into and from the MS4, and all associated investigation activities. The tracking system must be described in the SWMP Document, and complaint tracking information from each prior year must be summarized in each Annual Report.

v. Dry Weather Screening Program

At a minimum, the co-permittees must continue to implement a Dry Weather Screening Program at priority MS4 locations. The co-permittees must review and update the prioritization criteria for dry weather screening locations as described below by the due date of the Annual Report for the 2022-2023 reporting year (December 1, 2023). If necessary, as

specified in Schedule A.2.f, changes to criteria and procedures must be reported on in an update to the SWMP Document. The annual field screening must include a portion or all of the co-permittees' identified priority locations and include a process for information sharing with maintenance staff responsible for the programs required under Schedule A.3.f.iii (Pollution Prevention and Good Housekeeping for Municipal Operations: Inspection, Maintenance, and Cleaning of the MS4 System).

The dry-weather field screening activities should occur after an antecedent dry period of at least 72-hours. The dry-weather field screening activities must be documented and include:

(A) Annual Field Screening of Priority Locations

Priority locations must, when possible, be located at an accessible location downstream of any source of suspected illegal or illicit activity or location as identified by the co-permittees. Priority location designations must be based on analyses of risk of potential for illicit discharge(s), accounting for factors such as hydrological conditions, percent of impervious surface area, total drainage area of the location, population density of the location, infrastructure access density, traffic density, development age (age of the infrastructure and 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 co-permittees. Priority field screening locations must also be identified on the MS4 mapping and digital inventory when the assessment is complete, and may change based on the above criteria if new information comes to light or if a new analysis is conducted.

(B) General Observations

General observations must include visual presence of flow, turbidity, oil sheen, trash, debris or scum, condition of conveyance system or outfall, color, odor, and any other relevant observations related to the potential presence of non-storm water or illicit discharges.

(C) Field Screening and Analysis

If flow is observed, and the source is unknown, a field investigation must be conducted to determine the cause of the dry-weather flow. The field investigation procedures must consider sampling for pollutant parameters that are likely to be found based upon the suspected source of discharge or by other effective investigatory approaches or means to identify the source or cause of the suspected illicit discharge. Field screening pollutant parameter action levels, identified by the co-permittees in response to previous permit requirements and updated as necessary, must be considered where appropriate.

(D) Pollutant Parameter Action Levels

The co-permittees must continue to utilize pollutant parameter action levels as part of the field screening. The pollutant parameter action levels and rationale must be documented in an enforcement response plan (or similar document) and included or linked/referred to in the SWMP Document. Indicator constituents used by the co-permittees' procedures may include but need not be limited to the following: pH, total chlorine, turbidity, temperature, conductivity, easily tested-for indicators of human waste, and sensory indicators (odor, color, sheen, visible suds or other floatables, etc.).

The co-permittees must include the Pollutant Parameter Action levels or associated Monitoring Plan by inclusion or reference in the SWMP Document.

(E) Laboratory Analysis

If general observations and field screening indicate an illicit discharge and the presence of a suspected illicit discharge cannot be identified through other investigatory methods, co-permittees must collect a water quality sample for laboratory analyses for ongoing discharges. The water quality sample must be analyzed for pollutant parameters or identifiers that will aid in the determination of the source of the illicit discharge. The types of pollutant parameters or identifiers may include, but are not limited to genetic markers, industry-specific toxic pollutants, or other pollutant parameters that may be specifically associated with a source type.

vi. Illicit Discharge Detection and Elimination Training and Education

The co-permittees must ensure that all persons responsible for investigating and eliminating illicit discharges and illicit connections into the MS4 are appropriately trained to conduct such activities. All staff directly responsible for conducting dry weather screening activities or responding to reports of illicit discharges and spills into the MS4 must be properly trained to conduct such activities, and training strategies and frequencies for staff must be documented and described or referenced in the SWMP Document.

vii. Tracking and Assessment

The co-permittees must track implementation of the IDDE program requirements. In each corresponding Annual Report, the co-permittees must summarize or report on metrics or tracking measures related to implementation of the program. The Annual Report should include updates regarding any capital improvements needed or implemented associated with the IDDE program.

d. Construction Site Runoff Control

The co-permittees must continue to implement and enforce a construction site runoff control program to reduce discharges of pollutants from construction sites in its coverage area. The co-permittees must continue to implement their existing construction site runoff program as the new requirements are developed and implemented.

i. Ordinance and/or Other Regulatory Mechanism

Through ordinance or other regulatory mechanism, and to the extent allowable under state law, the co-permittees must continue to require erosion, sediment, and waste materials management controls to be used and maintained at all qualifying construction projects from initial clearing through final stabilization to reduce pollutants in stormwater discharges to the MS4 from construction sites.

The co-permittees must require construction site operators to document site specific erosion and sediment controls for construction project sites that results in a minimum land disturbance of equal to or greater than 1,000 square feet.

The co-permittees must use appropriate enforcement procedures and actions to ensure compliance with Schedule A.3.d.ii-vi, below.

ii. Erosion and Sediment Control Plans (ESCPs)

The co-permittees must continue to maintain written specifications that address the proper installation and maintenance of erosion and sediment controls during all phases of construction activity occurring in their coverage area. The written specifications must include an ESCP template, worksheet, checklist, or similar document for construction site operators to document how erosion, sediment, and waste material management controls for non-stormwater wastes (e.g., discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste) will be implemented and maintained at the construction

project site. At a minimum, through ordinance or other regulatory mechanism the co-permittees must:

(A) Require construction site operator to complete a site-specific Erosion and Sediment Control Plan or other documentation of site-specific controls prior to beginning construction/land disturbance;

(B) Require the Erosion and Sediment Control Plan be maintained and updated as site conditions change, or as specified by the co-permittees;

(C) Require Erosion and Sediment Control Plans to be kept on site and made available for review by the co-permittees, DEQ, or another administrating entity during site inspections or upon request; and,

(D) Continue to ensure that ESCPs for construction sites disturbing one acre or greater are consistent with the substantive requirements of the State of Oregon's 1200-C NPDES permit ESCPs.

Co-permittees may require or issue a simplified ESCP or a list of expected outcomes with prescribed BMPs for small or low-risk construction sites, provided that the co-permittees' criteria and specifications are clear and documented or referenced in the SWMP Document, and provided that construction operators are required to meet expectations and keep documentation of how they meet those expectations on site for reference during operations, maintenance activities, and inspections. The co-permittees must include or refer to a description of all Erosion and Sediment Control Plan requirements in the SWMP Document.

iii. Erosion and Sediment Control Plans Review

At a minimum, the co-permittees must continue to implement procedures to review Erosion and Sediment Control Plans from construction projects that will result in land disturbance of equal to or greater than 1,000 square feet using a checklist or similar document to determine compliance with the ordinance or other regulatory mechanism required.

Erosion and Sediment Control Plan review procedures must include consideration of the construction activities' potential water quality impacts, and remain in accordance with applicable state and local public notice requirements.

iv. Construction Site Inspections

The co-permittees must continue to perform inspections of construction sites to ensure that the approved ESCP or other documented set of controls is properly implemented. The SWMP Document must describe or reference procedures, including:

(A) Minimum Triggers for Inspection

At a minimum, the co-permittees must inspect construction sites if:

1. Sediment and/or turbidity is visible in reported stormwater discharge or dewatering activities from the construction site;
2. A complaint or report is received; or
3. A site meets any other minimum triggers established under the co-permittees' already established inspection program.

(B) Minimum Inspection & Documentation Requirements

Co-permittee inspections of construction sites must follow standardized procedures for inspection and documentation of inspections. Procedures and requirements for inspection and documentation must be detailed in a manual referenced or linked to in the SWMP Document, and include minimum required outcomes, criteria, and/or BMPs for disturbed areas of the site, as well as locations of material and waste storage

areas, stockpile areas, construction site entrances and exits, sensitive areas, and points of discharge to the MS4 or receiving waters. The co-permittees must include or reference in the SWMP Document a description of how the co-permittees site inspection procedures ensure, accomplish, or generate the following:

1. A review and evaluation of the ESCP or other documented set of site-specific controls and the operator's records of maintenance or operation of BMPs where applicable, to determine if the described control measures were installed, implemented, and maintained properly.
2. An assessment of the site's compliance with the co-permittees' ordinances or requirements.
3. Documentation of visual observations and of any existing or potential non-stormwater discharges, illicit connections, and/or discharge of pollutants from the site, as well as of recommendations to the construction site operator for follow-up.
4. A written or electronic inspection report, with photographs as necessary, including documentation of all necessary follow-up actions (e.g., re-inspection, enforcement) to ensure compliance with their applicable requirements.
5. Follow up to verify proper implementation of corrective measures in cases where a co-permittee-employed or contracted inspector finds evidence of erosion or of deficiencies in BMP maintenance or in adherence to ordinances or other regulations, as well as documentation of the corrective action.

v. Enforcement Procedures

The co-permittees must continue to implement and maintain a written escalating enforcement and response procedure for all qualifying construction sites and summarize or reference in the SWMP Document. The procedure must address repeat violations through progressively stricter response, as needed, to achieve compliance. The escalating enforcement and response procedure must describe how the co-permittees will use enforcement techniques to ensure compliance. The enforcement procedures must include timelines for compliance and, when formulating response procedures and penalties should consider factors (or multipliers) such as the type and severity of pollutant discharge, and whether the discharge was intentional or accidental. If the escalating enforcement procedure already in place does not meet these requirements, a revision or update may be submitted with the Annual Report due December 1, 2023, and, if necessary as specified under Schedule A.2.f, added to the SWMP Document at that time.

vi. Construction Runoff Control Training and Education

The co-permittees must ensure that all staff responsible for ESCP reviews, site inspections, and enforcement of the co-permittees' requirements are trained or otherwise qualified to conduct such activities, and training strategies and frequencies must be described or referenced in the SWMP Document.

vii. Tracking and Assessment

The co-permittees must routinely or continuously track all construction sites that result in a total land disturbance of equal to or greater than 1,000 square feet. The inventory must include relevant contact information for each project (e.g., name, address, phone, etc.), the size of the project including area and/or volume of disturbance, the date the co-permittees approved the ESCP in accordance with Schedule A.4.d.iii or in accordance with coverage under the 1200-CN permit as applicable, and whether any complaints have been received or inspections made.

The co-permittees must also track implementation of activities required by the Construction Site Runoff program. In each corresponding Annual Report, the co-permittees must summarize metrics or tracking measures related to implementation of the program, which may include but is not limited to number of regulated construction projects, number of inspections, and number of enforcement actions.

e. Post-Construction Site Runoff for New Development and Redevelopment

The co-permittees must continue to implement their post-construction stormwater pollutant and runoff control program as they develop, implement, and enforce the requirements of Schedule A.3.e to control stormwater runoff from new development and redevelopment project sites in its coverage area and reduce the discharge of pollutants. The co-permittees must describe or refer to full documentation of its programs in the SWMP Document.

i. Ordinance and/or Other Regulatory Mechanism

Through ordinance or other regulatory mechanism, to the extent allowable under state law and within the constraints of land use and zoning regulations, the co-permittees must require the following for project sites discharging stormwater to the MS4 that create or replace impervious surface area at or above the threshold area indicated for each co-permittee in Table 1:

(A) The use of stormwater controls at all qualifying sites.

(B) A site-specific stormwater management approach that targets natural surface or predevelopment hydrological function through the installation and long-term operation and maintenance of stormwater controls, with focus on management of quantity and quality of stormwater discharge.

(C) Long-term operation and maintenance of stormwater controls at project sites that are under the ownership of a private entity.

The co-permittees must use appropriate enforcement procedures and actions to ensure compliance with Schedule A.3.e.v. The local ordinance or other regulatory mechanism adopted must meet the requirements of Schedule A.3.e.ii-vi.

Table 1. Clackamas Group Co-Permittee Post-Construction Thresholds

Co-Permittee	Project Threshold (ft^2)
Clackamas County	5,000
Water Environment Services	5,000
City of Gladstone	5,000
City of Happy Valley	5,000
City of Johnson City	5,000
City of Lake Oswego	3,000
City of Milwaukie	1,000
City of Oregon City	5,000
City of River Grove	5,000
City of West Linn	1,000

City of Wilsonville	5,000
Oak Lodge Water Services District	1,000

ii. Prioritization of Low Impact Development & Green Infrastructure

The co-permittees must, by December 1, 2023, review and update or develop and begin implementation of a strategy to require to the maximum extent feasible, the use of Low Impact Development and Green Infrastructure (LID/GI) design, planning, and engineering strategies intended to minimize effective impervious area or surfaces, and reduce the volume of stormwater discharge and the discharge of pollutants in stormwater runoff from development and redevelopment projects. This LID/GI strategy must be documented in the subsequent Annual Report and incorporated into or referenced in the SWMP Document after completion and DEQ approval. In development of this strategy, the co-permittees must review ordinance and development code for opportunities to reduce the volume of discharge by design, engineering, and planning methods that prioritize onsite retention, infiltration, and evapotranspiration and the option of reuse where feasible, in order to make LID/GI the preferred and commonly used approach to site development. The co-permittees 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 as described below. Where LID/GI controls that infiltrate or otherwise retain stormwater onsite are infeasible, extended filtration shall be required.

iii. Post-Construction Stormwater Management Requirements

The co-permittees must by December 1, 2024 develop and implement enforceable post-construction stormwater management requirements in ordinance or other regulatory mechanism that, at a minimum, prioritize onsite retention of stormwater and pollutant removal, and include technical standards according to either of the following options:

(A) Numeric Stormwater Retention Requirement Site Performance & Treatment Standards

If this option is selected, the co-permittee must establish a site performance standard with a Numeric Stormwater Retention Requirement (NSRR) that retains stormwater onsite and minimizes the offsite discharge of pollutants in runoff by utilizing stormwater controls that infiltrate and facilitate evapotranspiration. The NSRR volume must be determined using one of the following methods:

1. Volume-based method (e.g., retain volume created from the first inch of rainfall).
2. Storm event percentile-based method (e.g., retain the 95th percentile storm event-95% of the time the data is below this value).
3. Annual average runoff-based method (e.g., retain 85% of annual average runoff).

The NSRR is met when the NSRR runoff volume (as determined by the method chosen above) from new and/or replaced impervious surfaces is managed by one or more structural stormwater controls with sufficient capacity to retain the stormwater runoff onsite without adversely impacting groundwater quality per DEQ's groundwater protection requirements (OAR 340-40). Permittees may require retention or detention in excess of the NSRR in order to prevent hydromodification or other capacity issues that might result from stormwater runoff discharging from the site.

The first priority of this option is onsite retention, but at sites where the NSRR cannot be met due to technical infeasibility and/or site constraints (including zoning or land use regulations), the co-permittee must require treatment of the runoff volume up to a specified water quality design storm, or at least 80% of average annual runoff, in

structural or extended filtration stormwater control prior to discharge. The evaluation of technical infeasibility or site constraints should be based on justification provided in the site plan (see Schedule A.3.e.iv and v.).

The procedures for allowing treatment of a portion of the NSRR (as opposed to 100% retention of the NSRR, in situations where 100% retention of the NSRR is infeasible or impracticable) should include a description of allowable structural stormwater controls that are designed to target the removal of TSS. The description of allowable structural stormwater controls must include site-specific design requirements, design requirements that do not inhibit maintenance, conditions where each control applies, and the operation and maintenance standards for each type of control. The co-permittee may include an upper and lower bound on the effluent TSS concentration that reflects the practical limitation of an engineered control (e.g., 80% removal of TSS for typical influent concentrations ranging from 20 mg/L to greater than 200 mg/L). The co-permittee must give priority to implementing green infrastructure before considering hardscaped structural stormwater controls (such as concrete vaults and piping, proprietary technologies, or other static non-GI facilities) for stormwater treatment. The co-permittee may adopt specifications created by another entity that comply with these requirements.

All stormwater discharged offsite from new and/or replaced impervious surfaces, at least up to the NSRR volume must target natural surface or predevelopment hydrology (in terms of rate, duration, and/or volume) to minimize the potential for hydromodification impacts offsite except in circumstances where the co-permittee can demonstrate that the risk of hydromodification impacts is negligible, (e.g., large tidally-influenced waterways or flow-managed waterways). The use of treatment trains of post-construction stormwater controls should be encouraged where appropriate for treating stormwater runoff that is managed offsite before discharging to receiving waters, to improve stormwater runoff quality and reduce discharge quantity.

(B) Alternative Site Performance Standards

As an alternative or in addition to Option A in Schedule A.3.e.iii, the co-permittees may establish design requirements including site performance standards determined to generate water quality benefits comparable to the NSRR approach for new development and redevelopment. The alternative site performance standards shall be included in ordinances or other enforceable documents adopted by the co-permittee. Such local requirements and thresholds shall provide equal or similar protection of receiving waters and equal or similar levels of treatment as the NSRR approach.

Co-permittees must demonstrate how alternative compliance approaches prioritize infiltration and LID/GI, include pollutant removal performance goals, target natural surface or pre-development site hydrology, and reduce the discharge of pollutants from new and/or replaced impervious surfaces.

The co-permittees shall set requirements for site layout plans and a minimum set of specific onsite stormwater controls (collectively “site design measures”) based on the GI approach of emphasizing infiltration, evapotranspiration and/or harvesting/reuse of stormwater. Site design measures shall be used to reduce the amount of runoff, comparable to the NSRR, to the extent technically feasible and not prohibited by other constraints such as land use regulations or other state or federal regulations. Any remaining runoff from impervious drainage management areas may be directed to one

or more LID/GI facilities, extended filtration facilities, or other area. Site planning procedures shall require projects to consider site layout options that optimize retention of stormwater.

At sites where retention is infeasible due to technical and/or site constraints, the co-permittees must develop a process whereby at least 80% of average annual runoff from new and/or replaced impervious surfaces, must be treated with an extended filtration stormwater control prior to discharge, to target removal of TSS. Stormwater discharged offsite must target natural surface or predevelopment hydrology (as measured by rate, duration, and/or volume of discharge) to minimize the potential for hydromodification impacts, except in circumstances where the co-permittees can demonstrate that the risk of hydromodification impacts is negligible, (e.g., large tidally influenced waterways or flow-managed waterways).

More stringent requirements may be used, and/or certain requirements may be tailored to local circumstances through the use of sub-basin plans or other similar stormwater management planning efforts.

iv. Water Quality Benefit Offset Programs

The co-permittees may develop water quality benefit offset programs as options for sites that, under Option A of Schedule A.3.e.iii, cannot meet the NSRR and for which full treatment of the NSRR design storm event is impracticable, or for sites under Option B that require special consideration for other reasons, or for sites unable to meet other stormwater requirements established by the co-permittees. Economic considerations alone are insufficient reason for not requiring adherence to the retention or treatment standards above. The options may include, but are not limited to stormwater mitigation options, a payment-in lieu program, groundwater replenishment program, or another option that matches the water quality goals of retaining or treating stormwater at any given site. If co-permittees choose to provide one or more water quality benefit offset programs, the co-permittees must develop and document how the alternative option works and what the standards and management systems are to value, estimate, and/or account for the ecological impact of untreated stormwater at qualifying sites. All programs developed should implement mitigation or other projects in the same sub-watershed (as defined in Schedule D) as the proposed project, to the degree possible. Exceptions should be documented with appropriate rationale.

v. Post-Construction Site Runoff Plan Review

The co-permittees must have documented, standardized procedures for the review and approval of structural stormwater control plans for new development and redevelopment projects, and procedures must be detailed or referenced in the SWMP Document.

At a minimum, the co-permittees must review and approve or disapprove plans for structural stormwater control at new development and redevelopment sites that result from the creation or replacement of impervious surface equal to or greater than the co-permittee's assigned post-construction threshold in Table 1; and sites that use alternative compliance to meet the retention requirement, before construction permits are issued. The co-permittees must review plans for consistency with the ordinance/regulatory mechanism and specifications required by Schedule A.3.e.i.

The co-permittees must require and subsequently review and approve or disapprove the written technical justification to evaluate any technical infeasibility or site constraints which prevent the onsite management of the runoff amount stipulated in the NSRR or the site's ability to meet the alternative site performance standard. The written technical justification

must be in the form of a site-specific hydrologic or technical analysis. The co-permittees must establish criteria or circumstances under which such analysis must be conducted, and the results of the co-permittee's review must be documented. Such infeasibility or constraint factors may include, but are not limited to, low infiltration rates, shallow bedrock, high groundwater, groundwater contamination, soil instability as documented by geotechnical analysis, or land use or zoning constraints. The determination that the NSRR or Alternative Site Performance Standard cannot be achieved at a project site must be based on documented infeasibility criteria or constraints considering multiple technical factors.

vi. Long-Term Operation and Maintenance (O&M)

The co-permittees must continue to maintain an inventory and implement a strategy to ensure that all public and private stormwater controls that discharge to the MS4 are operated and maintained to the maximum extent practicable. This strategy must, at minimum, include the following:

(A) Legal authority allowing the co-permittees to inspect and require effective operation and maintenance of privately owned and operated stormwater controls that discharge to the MS4.

(B) Continued maintenance of the inventory and mapping developed under the previous permit term for all public stormwater facilities, as well as private facilities which discharge to the MS4 and which have been either constructed since January 15, 2012, used to estimate pollutant load reduction as part of the TMDL benchmark evaluation, or otherwise determined by the co-permittees to be major stormwater facilities or controls.

(C) Maintenance and inspection criteria, rationale, priorities, frequency, and procedures, and an inspection schedule ensuring compliance with the O&M requirements of each type of stormwater control operated by the co-permittees and by other private entities.

(D) Tracking mechanism(s) for documenting inspections, as well as verification that site owners are prepared to meet the O&M requirements for private stormwater controls. The tracking mechanism(s) must document enforcement actions and compliance response. For stormwater controls that include vegetation, the O&M requirements must at minimum include requirements to remove sediment accumulation and manage the vegetation community to ensure the functionality of the control. For stormwater controls that include soils in the treatment process, O&M requirements must at minimum include requirements for practices to maintain soil permeability. For manufactured stormwater technology, O&M requirements must include, as applicable, documentation of the model number, manufacturer, or equivalent identifiers where available, information about suppliers and/or vendors, and schedules for replacement at regular intervals, as well as plans or contracts for an appropriate supply of such components to ensure proper treatment function and timely maintenance.

(E) Required training or appropriate qualifications to inspect private stormwater facilities

(F) Reporting requirements, where appropriate as determined by the co-permittee, for privately owned and operated stormwater controls.

(G) The location of all public and private stormwater controls installed in compliance with this permit must be included with the MS4 Map and Digital Inventory described in Schedule A.3.c.i.

vii. Training and Education

The co-permittees must ensure that staff responsible for performing post-construction runoff site plan reviews, administering the post-construction program requirements, and performing O&M practices or evaluating compliance with long-term O&M requirements, are trained or otherwise qualified to conduct such activities, and training strategies and frequencies for staff must be described or referenced in the SWMP Document.

viii. Tracking and Assessment

The co-permittees must maintain records for activities conducted to meet the requirements of the Post-Construction Site Runoff program, and include a descriptive summary of their activities and report on metrics or tracking measures related to implementation of the program in the corresponding Annual Report.

f. Pollution Prevention and Good Housekeeping for Municipal Operations

Each co-permittee must properly operate and maintain its facilities, using pollution prevention and good housekeeping to reduce the discharge of pollutants through the MS4 to waters of the state.

i. Operation and Maintenance Strategy for Existing Controls

For existing structural stormwater controls installed or permitted by the co-permittees prior to the effective date of this permit, the co-permittees must develop and implement an operation and maintenance strategy for both co-permittee-owned controls and controls owned and operated by other non-MS4 and non-NPDES entities discharging to the MS4.The O&M strategy for stormwater controls must include, at minimum, the long-term O&M requirements in Schedule A.3.e.vi.

ii. Inspection, Maintenance, and Cleaning of the MS4

The co-permittees must develop and implement a process for the inspection, maintenance, and cleaning of their MS4 and related structures (including, but not limited to, catch basins, storm drain inlets, water quality facilities, pipes, etc.) to maximize debris and pollutant removal, and verify proper operation of all its municipal structural treatment controls designed to reduce pollutants (including floatables) in storm water discharges to or from its MS4s and related drainage structures. Operation and maintenance activities may include, but are not limited to, the following:

(A) Inspections of the MS4 and related structures;

(B) Cleaning of the MS4 and related structures as needed; and

(C) Proper disposal of materials removed from cleaning of the MS4.

The co-permittees must maintain records of inspection and cleaning activities to facilitate adaptive management, including but not limited to such metrics as an estimated volume of debris removed during O&M activities as a total or by category or type of activity, if known, number of structures of each category inspected, number of structures of each category cleaned, and linear feet of pipe cleaned.

The inspection, maintenance, and cleaning schedule must ensure inspection of the co-permittee-owned or operated catch basins and inlets within the MS4 at least once every five years, unless an alternate schedule is established in the SWMP Document and approved by DEQ, and take all appropriate maintenance or cleaning action based on those inspections to ensure the catch basins and inlets continue to function as designed. The co-permittees may establish an inspection prioritization system for its catch basins and other structural MS4 elements, and adjust inspection frequency as needed for adaptive management, provided the co-permittee describes all relevant factors it uses to prioritize its inspections to specific

geographic or land use areas of the MS4 in the SWMP Document or another document cited/referenced therein.

iii. Pollution Prevention in Facilities and Operations

The co-permittees must continue to conduct municipal O&M activities in a manner that reduces the discharge of pollutants through the MS4 to protect water quality. The co-permittees must review and update existing procedures and schedules for inspection and maintenance of the MS4, and describe or reference in the SWMP Document pollution prevention and good housekeeping related to:

(A) Operation and maintenance of public streets, roads, and highways, and associated stormwater controls, ditches, and pipes over which the co-permittee has authority;

(B) Operation, repair, and maintenance of bridges or other over-water infrastructure over which the co-permittee has authority

(C) Control and minimization of the use and application of pesticides, herbicides, and fertilizers on co-permittee-owned properties and facilities;

(D) Control or minimization of stormwater runoff from municipal facilities that treat, store or transport municipal waste, such as yard waste or other municipal waste and are not already covered under an NPDES permit, a DEQ solid waste, or other permit designed to reduce the discharge of pollutants;

(E) Control measures to limit or eliminate infiltration of seepage from the municipal sanitary sewer system to the MS4; and

(F) Management practices that prevent or control the release of materials related to fire-fighting training activities.

iv. Co-permittee-owned NPDES Industrial Stormwater Permit Facilities

Co-permittee-owned or operated facilities with industrial activity as defined in 40 CFR §122.26(b)(14) discharging stormwater to the waters of the state must continue to maintain coverage under DEQ's NPDES Industrial Stormwater General Permit. The co-permittees may use the actions required in the NPDES Industrial Stormwater Permit to address the applicable facility requirements in Schedule A.3.f.viii.

v. Winter Operations and Maintenance Program

The co-permittees must document and include with or reference in the SWMP Document the jurisdiction's Winter Maintenance and Operations Program that limits impacts to water quality to the degree practicable.

(A) Winter Management Materials

The co-permittees must ensure that all winter materials utilized by the co-permittees on roads for anti-icing and de-icing purposes (e.g., abrasives, sand, deicers including but not limited to MgCl2, solid salt, etc.) are utilized and stored properly, according to most updated and accepted practices.

(B) Winter Maintenance Strategy

The co-permittees must provide or reference a Winter Maintenance Strategy with the SWMP Document. This document must describe how the co-permittees manage rights-of-way owned or operated by the co-permittees during inclement weather and what Best Management Practices are implemented.

(C) Winter Maintenance Tracking and Reporting

Winter Maintenance activities for streets and roads must be included as an element of the MS4 Annual Report required by this permit beginning in the Annual Report due

December 1, 2022, or no later than upon DEQ's approval of the SWMP Document. The information for each year must include but need not be limited to: a list of materials used, number of winter weather events where winter maintenance materials are used, quantities and general location of each material used in relation to distance (e.g., pounds per mile), and any other actions taken to protect waters of the state for areas where that data is available or becomes available during the permit term.

The co-permittees must implement these requirements in accordance with the O&M strategy for stormwater controls.

vi. Requirements for Pesticide and Fertilizer Applications

Each co-permittee must develop or continue to implement practices based on integrated pest management principles to the extent practicable in order to reduce the discharge of pollutants to the MS4 associated with the application and storage of pesticides and fertilizers. At a minimum, such areas include the co-permittees' public rights-of-way, parks, recreational facilities, golf courses, and any other publicly owned landscaped areas owned or managed by the co-permittee. All employees or contractors of the co-permittees applying pesticides must follow all label requirements, including those regarding application methods, rates, number of applications allowed, and disposal of the pesticide, fertilizer and rinsate.

vii. Litter Control

The co-permittees must continue to implement methods to reduce litter within their jurisdictions. The co-permittees must work cooperatively with other departments, organizations, and/or other entities to control litter on a regular basis and after major public events, in order to reduce the discharge of pollutants and litter to the MS4.

viii. Materials Disposal

All collected material or pollutants removed in the course of maintenance, treatment, control of stormwater, or other wastewaters must be managed and disposed of in a manner such as to prevent such pollutants from entering the waters of the state in accordance with state regulations.

ix. Flood Control, Transportation, and Other Infrastructure

The co-permittees 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 co-permittees to take action with respect to flood control itself and does not seek to impose flood control responsibility on any co-permittee.

x. Operations & Maintenance Staff Training

The co-permittees must continue to ensure that staff responsible for evaluating O&M practices, evaluating compliance with long-term O&M requirements, or ensuring pollution prevention at facilities and during operations are trained or otherwise qualified to conduct such activities. Training strategies and frequencies for staff must be described in the SWMP Document.

xi. Tracking and Assessment

The co-permittees must maintain records for activities undertaken to meet the requirements of the Pollution Prevention for Municipal Operations program requirements and include a descriptive summary of their activities in the corresponding Annual Report, as well as relevant metrics or tracking measures.

g. Industrial and Commercial Facilities

The co-permittees must continue to implement a program to reduce pollutants in stormwater discharges to the MS4 from industrial and commercial facilities including, at a minimum: sites the co-permittees have identified as being subject to the DEQ-issued 1200-Z industrial stormwater NPDES general permit; hazardous waste treatment, disposal and recovery facilities; industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986; facilities subject to Section 313 of the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. 11023; sites flagged by a pretreatment program or Industrial User Survey as potentially contributing, or housing activities that may contribute, pollutants to the MS4; and facilities or activities that have been identified by the co-permittee as potentially contributing a significant pollutant load to the MS4. Screening for industrial and commercial sites and activities may be conducted in conjunction with industrial pretreatment program activities or a business licensure program as long as stormwater and MS4 considerations are added to the Industrial User Survey or other questionnaire, or may be conducted separately under a program developed solely for MS4 purposes.

i. Screening for Industrial Stormwater Permitting

The co-permittees must continue to screen existing and new industrial facilities to assess whether they may be subject to the DEQ-issued 1200-Z industrial stormwater NPDES general permit or have the potential to contribute a significant pollutant load to the MS4. The screening must be done on a routine basis, and in no case may screening for new facilities take place less often than once a year. Within 30 days after determining a facility may be subject to a DEQ-issued industrial stormwater permit, the co-permittees must notify the industrial facility and DEQ.

ii. Strategy to Reduce Pollutants from Industrial and Commercial Facilities

The co-permittees must by December 1, 2023, at minimum, review and update as appropriate the Industrial/Commercial Facilities Strategy developed under the previous permit term and include it in the SWMP Document directly or by reference. The Strategy must be posted on the co-permittees' websites for public comment for a minimum of 30 days prior to submission to DEQ for approval and incorporation into the SWMP Document. If the Strategy Document is completed early, wholly incorporated into the SWMP Document, and submitted to public review with the initial SWMP Document, this suffices for the public review requirement. The Strategy document must include, at a minimum:

(A) The facility types or activities, rationale, and priorities for entities that the co-permittee has determined may have high potential to discharge pollutants of concern to the MS4,

(B) Inspection procedures, documentation standards, and frequency of inspections; and

(C) Description of the assessment and tracking of compliance with municipal ordinances related to discharges to the MS4 at industrial and commercial facilities that are potential sources of pollutants in stormwater runoff.

iii. Commercial & Industrial Facility Inspection Staff Training

The co-permittees must ensure that staff responsible for inspecting and evaluating Commercial and Industrial facilities, evaluating compliance with municipal ordinances related to discharges to the MS4, or ensuring pollution prevention at facilities through inspections and/or provision of educational materials on stormwater management, are trained or otherwise qualified to conduct such activities, and training strategies, and frequencies for staff must be described in the SWMP Document.

iv. Tracking and Assessment

The co-permittees must maintain records of activities conducted to meet the requirements of the Commercial & Industrial Facilities program requirements and include a descriptive summary of their activities in the corresponding Annual Report, as well as relevant metrics or tracking measures. Each annual report should include a list of entities referred to DEQ based on co-permittee screening activities, a list of categories of facilities inspected, and an overview of the results of inspections.

h. Infrastructure Retrofit and Hydromodification Assessment Update

The co-permittees must continue to consider the impacts of policy, capital improvements, and retrofit projects on MS4 discharges to receiving waters, considering the goals and proposed actions described in the previous permit's Hydromodification Assessment and Stormwater Retrofit Strategy reports.

i. Documentation

The co-permittees are required to include in the third Annual Report of this permit term, an assessment of any outcomes related to the Hydromodification Assessment and Stormwater Retrofit Strategy reports. This update may be an appendix or a subsection of the report, and must include, at a minimum:

(A) An assessment of how the Hydromodification Assessment and Stormwater Retrofit Strategy have been used, considered, or implemented since the time the reports were completed;

(B) Progress toward or completion of projects identified in the Retrofit Strategy priority list, and a qualitative assessment of the benefits of those projects;

(C) Description of any further actions taken as a result of the Hydromodification Assessment, and a rationale for those actions since the writing of the reports;

(D) Narrative describing progress toward addressing gaps in hydromodification information or data related to waterbodies within the co-permittees' jurisdiction as identified in the Hydromodification Assessment; and,

(E) New goals, tools, priorities, and planned or potential projects for addressing ongoing hydromodification and/or water quality impacts resulting from historical development/infrastructure, and for improving retrofit planning, considering information gathered in the time since the completion of the reports.

i. Summary of SWMP Document Requirements and Deadlines

The following Table 2 summarizes the elements required to be included in, or documented elsewhere and referenced in, the SWMP Document, and may serve as an outline for the SWMP document. Table 2 also includes deadlines for completion of each element, unless a later date is approved in writing by DEQ as outlined in Schedule A.3.

Table 2. SWMP Document Requirements and Schedule A Implementation Deadlines

PERMIT CONDITION	SUMMARY OF REQUIRED ELEMENTS	DUE DATE
A.2.b – Legal Authority	Adopt or update all ordinances as necessary to fulfill the requirements of the permit.	December 1, 2024
A.2.c – SWMP Document	Submit SWMP Document	December 1, 2022

PERMIT CONDITION	SUMMARY OF REQUIRED ELEMENTS	DUE DATE
A.3.a – Education & Outreach	Continue to implement and develop as required by Schedule A.3.a, and fully describe or reference in the SWMP Document, an Education & Outreach Program, including: • Program description for education & outreach activities • Priority Audiences & Topics • Tracking & Assessment	Complete description of proposed program no later than December 1, 2022
A.3.b – Public Involvement & Participation	Continue to implement and develop as required by Schedule A.3.b, and fully describe or reference in the SWMP Document, a Public Involvement & Participation Program, including: • Publicly Accessible Website ○ IDDE Reporting ○ Draft Documents posted for public comment ○ Links to ordinances, policies, and guidance documents ○ Contact info for relevant staff • Stewardship Opportunity • Tracking & Assessment procedures/goals/metrics	Complete description of proposed program no later than December 1, 2022
A.3.c – Illicit Discharge Detection & Elimination	Continue to implement and develop as required by Schedule A.3.c, and fully describe or reference in the SWMP Document, an Illicit Discharge Detection & Elimination Program, including: • Ordinance or other regulatory mechanism updated as necessary and referred to or included in SWMP Document • MS4 Map with: ○ Outfall Inventory ○ Conveyance system and stormwater control facility locations ○ Any known chronic illicit discharges ○ Dry-Weather Priority Screening Sites mapped per Schedule A.3.c.v • Established, documented enforcement procedures • Program to detect and eliminate Illicit Discharges, including procedures for tracking and investigation of complaints and reports and reporting to other authorities • Dry Weather Screening Program including: ○ Designation of field screening priority locations ○ Criteria for general observations ○ Field screening & analysis guidelines ○ Pollutant parameter action levels ○ Laboratory analysis procedures • Training program strategy for all staff involved in IDDE, as appropriate • Tracking & Assessment procedures/goals/metrics	Complete description of proposed program no later than December 1, 2022
Schedule A.3.d – Construction Site Runoff Control	Continue to implement and develop as required by Schedule A.3.d, and describe or reference in the SWMP Document, a	Complete description of

PERMIT CONDITION	SUMMARY OF REQUIRED ELEMENTS	DUE DATE
	program to prevent & control construction site runoff, including: • Ordinance or other regulatory mechanism updated as necessary and referred to or included in SWMP Document • ESCP guidelines and requirements for construction site operators • ESCP plan review procedures • Construction site inspection triggers, guidelines, documentation requirements, and follow-up procedures • Enforcement procedures • Training program strategy for all staff involved in construction site runoff control, as appropriate	proposed program no later than December 1, 2022
Schedule A.3.e – Post-Construction Site Runoff Control	Continue to implement and develop as required by Schedule A.3.e, and fully describe or reference in the SWMP Document, a program to control post-construction site runoff, including: • Ordinance or other regulatory mechanism updated as necessary and referred to or included in SWMP Document • LID/GI Prioritization Strategy • Development of technical Post-Construction Stormwater Management Requirements (Site Performance Standards, Treatment Standards, and alternative compliance options) • Plan Review procedures update • Long Term O&M requirements • Training program strategy for all staff involved in post-construction runoff control, as appropriate • Tracking & Assessment procedures/goals/metrics	LID/GI Strategy and program description by December 1, 2023,ordinance as needed to support program no later than December 1, 2024
Schedule A.3.f – Pollution Prevention and Good Housekeeping for Municipal Operations	Continue to implement and develop as required by Schedule A.3.f, and fully describe or reference in the SWMP Document, a program to control pollution from municipal operations, including: • O&M strategy for existing publicly owned stormwater controls • Inspection, Maintenance, and Cleaning program for MS4 systems and structures • Pollution prevention program for facilities & operations • Winter Operations & Maintenance Program • Controls for pesticide & fertilizer application on public land • Litter controls • Materials disposal • Stormwater quality related adjustments as relevant to flood control facilities, transportation, & other infrastructure projects • Training program schedule for all staff involved in pollution prevention for municipal operations, as appropriate	Complete description of proposed program no later than December 1, 2022

PERMIT CONDITION	SUMMARY OF REQUIRED ELEMENTS	DUE DATE
	• Tracking & Assessment procedures/goals/metrics	
Schedule A.3.g – Industrial & Commercial Facilities	Continue to implement and develop as required by Schedule A.3.g, and fully describe or reference in the SWMP Document, a program to control pollution in stormwater from industrial & commercial facilities, including: • Designation, inventory, and inspection of businesses with potentially significant stormwater pollutant sources not already permitted and inspected by DEQ, and enforcement actions per IDDE procedures where necessary • Provision of education for operators of commercial and industrial facilities • Screening & notification for industrial sites that may require an industrial NPDES permit • Training program schedule for all staff involved in the above program areas, as appropriate • Tracking & Assessment procedures/goals/metrics	Complete description of proposed program no later than December 1, 2022, updated Strategy document by December 1, 2023
Schedule A.3.h – Infrastructure Retrofit and Hydromodification Assessment Update	Report on progress related to the Hydromodification Assessment and Retrofit Strategy reports submitted during the previous permit term	Submission in or attached to Annual Report due December 1, 2023

SCHEDULE B - MONITORING AND REPORTING REQUIREMENTS

1. Monitoring Program

The co-permittees must continue to implement a monitoring program to support adaptive stormwater management and the evaluation of stormwater management program effectiveness in reducing the discharge of pollutants from the MS4.

a. Monitoring Objectives

The monitoring program must incorporate the following objectives:

i. Evaluate the source(s) of and means for reducing the pollutants of concern applicable to the co-permittees' permit area, including 2018/2020 303(d) listed pollutants, as applicable;

ii. Evaluate the effectiveness of Best Management Practices (BMPs) in order to help determine BMP implementation priorities;

iii. Characterize stormwater based on land use type, seasonality, geography, or other catchment characteristics;

iv. Evaluate status and long-term trends in receiving waters associated with MS4 stormwater discharges;

v. Assess the chemical, biological, and physical effects of MS4 stormwater discharges on receiving waters; and,

vi. Assess progress towards reducing TMDL pollutant loads.

b. Monitoring Requirements Table

The monitoring program must incorporate the requirements identified in Table 3. The requirements in Table 3 become effective no later than 60 days after the approval of the Monitoring Plan by DEQ in accordance with Schedule B.1.c.

Table 3. Clackamas Group Environmental Monitoring Requirements

Monitoring Type	Monitoring Location(s)	Monitoring Frequency	Pollutant Parameter Analyte(s)
Clackamas Group Collective Mercury Monitoring Requirement			
Instream Mercury Monitoring	Two (2) Locations in the Lower Willamette Basin	Four (4) events/year	Mercury (Total Recoverable)
	Two (2) locations in the Middle Willamette Basin		
	Two (2) Location in the Tualatin River Basin		
	Two (2) Locations in the Clackamas River Basin		
Stormwater Mercury Monitoring	Four (4) sites	Three (3) events/year	Mercury (Total Recoverable)

Monitoring Type	Monitoring Location(s)	Monitoring Frequency	Pollutant Parameter Analyte(s)
Gladstone			
Instream Monitoring	One (1) site	Three (3) events/year	Field; Conventional; Metals; Nutrients
Instream Biological Monitoring	Conduct or contribute to an instream biological monitoring project/task.		
Johnson City			
Instream Monitoring	One (1) Site	Five (5) events/permit term	Field; Conventional; Metals; Nutrients
Lake Oswego			
Instream Monitoring	Six (6) monitoring sites	Twelve (12) events/year	Field; Conventional; Metals; Nutrients
Stormwater Monitoring – Wet Weather	Two (2) sites	Two (2) events/year	Field; Conventional; Metals; Nutrients; Flow
Stormwater Monitoring - Pesticides	One (1) site	Six (6) events/permit term	Pesticides
Instream Biological Monitoring	Ten (10) monitoring sites	One (1) event/permit term	N/A
Milwaukie			
Instream Monitoring	One (1) site	Four (4) events/year	Field; Conventional; Metals; Nutrients
Continuous Instream Monitoring	One (1) monitoring station	Ongoing	Temperature Conductivity Dissolved Oxygen Total Dissolved Solids pH
Stormwater Monitoring – Wet Weather	One (1) site	Three (3) events/year	Field; Conventional; Metals; Nutrients
Stormwater Monitoring - Pesticides	One (1) site	Six (6) events/permit term	Pesticides
Instream Biological Monitoring	Conduct or contribute to an instream biological monitoring project/task.		

Monitoring Type	Monitoring Location(s)	Monitoring Frequency	Pollutant Parameter Analyte(s)
Oregon City			
Instream Monitoring	Six (6) Sites	Four (4) events/year	Field; Conventional; Metals; Nutrients
Stormwater Monitoring – Wet Weather	Two (2) sites	Three (3) events/year	Field; Conventional; Metals; Nutrients;
Stormwater Monitoring - Pesticides	One (1) site	Six (6) events/permit term	Pesticides
Instream Biological Monitoring	Conduct or contribute to an instream biological monitoring project/task.		
West Linn			
Instream Monitoring	Three (3) sites	Five (5) events/year	Field; Conventional; Metals; Nutrients
Stormwater Monitoring – Wet Weather	One (1) site	Three (3) events/year	Field; Conventional; Metals; Nutrients
Stormwater Monitoring - Pesticides	One (1) site	Six (6) events/permit term	Pesticides
Instream Biological Monitoring	Conduct or contribute to an instream biological monitoring project/task.		
Wilsonville			
Instream Monitoring	Two (2) sites	Four (4) events/year	Field; Conventional; Metals; Nutrients
Stormwater Monitoring – Wet Weather	One (1) site	Three (3) events/year	Field; Conventional; Metals; Nutrients
Stormwater Monitoring - Pesticides	One (1) site	Six (6) events/permit term	Pesticides
Instream Biological Monitoring	Conduct or contribute to an instream biological monitoring project/task.		
Clackamas County, Water Environment Services, City of Happy Valley, and City of Rivergrove			
Instream Monitoring	Four (4) sites	Nine (9) events/year	Field; Conventional; Metals; Nutrients
Instream Biological Monitoring	Eight (8) sites	One (1) event/permit term	N/A

Monitoring Type	Monitoring Location(s)	Monitoring Frequency	Pollutant Parameter Analyte(s)
Stormwater Monitoring – Wet Weather	Five (5) sites	Three (3) events/year	Field; Conventional; Metals; Nutrients; flow or rainfall
Stormwater Monitoring - Pesticides	Two (2) sites	Three (3) events/permit term	Pesticides
Oak Lodge Water Services District			
Instream Monitoring	Three (3) sites	Four (4) events/year	Field; Conventional; Metals; Nutrients
Stormwater Monitoring – Wet Weather	One (1) site	Three (3) events/year	Field; Conventional; Metals; Nutrients
Stormwater Monitoring - Pesticides	One (1) site	Six (6) events/permit term	Pesticides
Instream Biological Monitoring	Conduct or contribute to an instream biological monitoring project/task.		

Monitoring Type	Monitoring Location(s)	Monitoring Frequency	Pollutant Parameter Analyte(s)

Special Conditions:

1) The monitoring frequency reflects the number of required sample events per monitoring location.
2) If after 18 Instream Monitoring events at a given sampling location a pollutant parameter analyte value is reported as a non-detect greater than 90% of the samples, or was during the previous permit term, the pollutant parameter analyte may be eliminated from routine monitoring there.
3) If after 9 Stormwater Monitoring events at a given sampling location a pollutant parameter analyte value is reported as a non-detect greater than 90% of the samples, or was during the previous permit term, the pollutant parameter analyte may be eliminated from routine monitoring there.
4) Field pollutant parameters for Stormwater Monitoring activities include flow rate or rainfall data.
5) Pesticide pollutant parameters that must be considered for purposes of the pesticide monitoring requirement include any pesticides used by the co-permittees within their jurisdictions, and the following: Insecticides: Bifenthrin, Chlorpyrifos, Imidacloprid, Fipronil; Herbicides: Atrazine, Simazine, Sulfometuron methyl, Diuron, 2,4-D, Glyphosate & degradate (AMPA), and 2,6-dichlorobenzamide (dichlobenil degradate). Legacy pesticide monitoring (DDT, Dieldrin) must be conducted for streams where an established TMDL requires it.
6) The Macroinvertebrate monitoring must follow a generally accepted macroinvertebrate monitoring methodology (e.g., DEQ Benthic Macroinvertebrate Protocol for Wadeable Rivers and Streams). The methodology must be documented in the monitoring plan.
7) Monitoring and analysis for Mercury (Total Recoverable) must be conducted in accordance with US EPA method 1631E, with a quantitation limit of 0.5 ng/L. EPA Method 1669 ultra clean sampling protocol is to be used to collect samples, unless another method is approved by DEQ per Schedule B.1.d.iii. Total Mercury sampling is required per the requirements of the Willamette Basin Mercury TMDL, and must be paired with TSS sampling.

Pollutant parameter(s) identified in each analyte category in Table 3 are as follows:

Field	Conventional	Nutrients	Metals (Total Recoverable & Dissolved)
Dissolved Oxygen	*Escherichia coli* (E. coli)	Nitrate (NO_3)	Copper
pH	Hardness	Ammonia Nitrogen (NH_3-N)	Lead
Temperature	Total Alkalinity	Total Phosphorus (TP)	Zinc
Conductivity	Dissolved Organic Carbon (DOC)	Ortho-Phosphorus (O-PO_4)	
	Total Suspended Solids (TSS)		

c. Monitoring Plan

The co-permittees must update their monitoring plan(s) by December 1, 2022 and begin implementation starting July 1, 2023. Prior to submission of the monitoring plan to DEQ, the co-permittees must provide an opportunity to receive comments from the public by posting to the publicly accessible website(s) required in Schedule A.3.b.i for a minimum of 30 days. The monitoring plan(s) may be prepared by a collective group of co-permittees and/or by individual co-permittees, in accordance with Schedule B.1.e. The monitoring plan(s) must incorporate the following elements:

i. Identifies how each monitoring objective identified in Schedule B.1.a is addressed and the sources of information used. The co-permittees may use Stormwater Management Plan measurable goals, environmental monitoring activities, historical monitoring data, stormwater modeling, national stormwater monitoring data, stormwater research, or other applicable information to address the monitoring objectives.

ii. Describes the role of the monitoring program in the adaptive management of the storm water program.

iii. Describes the relationship between environmental monitoring and a long-term monitoring program strategy.

iv. Describes in detail or includes by reference to external documents the following information for each environmental monitoring project/task:
   (A) Project/task organization
   (B) Monitoring objectives, including monitoring question and background, data analysis methodology and quality criteria, and assumptions and rationale;
   (C) Documentation and record-keeping procedures;
   (D) Monitoring process/study design, including monitoring location, description of sampling event or storm selection criteria, monitoring frequency and duration, and responsible sampling coordinator;
   (E) Sample collection methods and handling/custody procedures;
   (F) Analytical methods for each water quality parameter to be analyzed;
   (G) Quality control procedures, including quality assurance, the testing, inspection, maintenance, calibration of instrumentation and equipment; and,
   (H) Data management, review, validation, and verification.

v. The monitoring plan may be modified without prior DEQ approval if the following conditions (A) or (B) are met. For conditions not covered in this section, the co-permittees must provide DEQ with the proposed modification to the monitoring plan, and receive written approval from DEQ prior to implementation of the proposed modification. The conditions are as follows:
   (A) The modification does not reduce the minimum number of data points, which is a product of the number of monitoring locations, frequency, duration, and pollutant parameters identified in Table 3; or,
   (B) The modification is the result of including elements of another permit, such as a WPCF UIC permit.

vi. Modifications to the monitoring plan in accordance with Schedule B.1.c.v. must be documented in the subsequent annual report by describing the rationale for the modification, and how the modification will allow the monitoring program to remain compliant with the permit conditions.

d. Sampling and Analysis

The co-permittees must continue to exercise due diligence in collecting and analyzing all environmental monitoring samples required by this permit. All monitoring must be conducted in accordance with the design and procedures identified in Schedule B.1.c.iv. If the co-permittees are unable to collect or analyze any sample, pollutant parameter, or information due to circumstances beyond the co-permittees' reasonable control, DEQ must be notified in writing with the submission of the data. These circumstances may include, but are not limited to, abnormal climatic conditions, unsafe or impracticable sampling conditions, equipment vandalism or equipment failures that occur despite proper operations and maintenance.

i. In-stream monitoring:
   (A) A minimum of 50 percent of the water quality sample events must be collected during the wet season (September 1 to April 30),
   (B) Each unique sample event must occur at a minimum of 72 hours apart.

ii. Stormwater and Structural BMP Monitoring
   (A) All water quality samples must be collected during a storm event that is predicted to be greater than 0.1 inch of rainfall

(B) When possible, samples should be collected after an antecedent dry period of a minimum of 12 hours.

(C) Precautions must be taken to avoid the collection of samples lacking stormwater runoff, as when the intra-event dry period of a storm exceeds 6 hours, and exceptions must be documented with a rationale for the deviation (e.g., a 24-hr flow-weighted composite sample collection method was employed to compensate).

(D) Sample Collection Method: Samples must be collected during stormwater runoff producing events that represent the local or regional rainfall frequency and intensity, including event types that may be expected to yield high pollutant loads/concentrations. The sample collection method (e.g., flow-weighted composite, grab sample, etc.) and rationale shall be described in the monitoring plan.

(E) Flow or rainfall data must be collected, estimated, or modeled for each stormwater monitoring event. If flow or rainfall is modeled or estimated, the procedure shall be described in the monitoring plan.

iii. Sampling Procedures & Analytical Methods

Samples must be analyzed in accordance with EPA approved methods listed in the most recent publication of 40 CFR 136 unless otherwise approved in advance by DEQ. The analysis must utilize appropriate Quality Assurance/Quality Control protocols, such as routinely analyzing replicates, blanks, laboratory control samples and spiked samples, and quantitation limits appropriate for the sampling objective. Field analytical kits are acceptable if the kits use a method approved under 40 CFR 136. This requirement does not apply to illicit detection and discharge elimination field screening activities conducted by the co-permittees as required by Schedule A.3.c.v. Use of alternative test procedures must be done in accordance with 40 CFR 136.

If an approved sampling procedure or analytical method is not identified in 40 CFR 136, or if a co-permittee wishes to deviate from sampling or analytical methods prescribed in 40 CFR 136 or in this permit for other reasons, the co-permittee may propose a suitable procedure or analytical method if the method is described in the monitoring plan, and submitted to DEQ with a justification for review and approval prior to use, or an alternative testing procedure is already approved by the EPA under 40 CFR 136.

iv. Preservation, Transportation, & Holding Times

Analyzed samples must comply with preservation, transportation and holding time recommendations cited in 40 CFR 136, in the most recent edition of Standard Methods for the Examination of Water and Wastewater, or as applicable to the analytical method if no approved analytical method in 40 CFR 136 or the most recent edition of Standard Methods for the Examination of Water and Wastewater exists.

v. Data Submission

Analytical data must be submitted annually to DEQ in the DEQ-provided template, with the corresponding annual report.

e. Coordinated Environmental Monitoring

Environmental monitoring conducted to meet a permit condition in Table 3 may be coordinated among co-permittees or conducted on behalf of a co-permittee by a third party. Co-permittees are responsible for environmental monitoring in accordance with Schedule B requirements. Each co-permittee may utilize data collected by another co-permittee, a third party, or in another co-

permittee's jurisdiction to meet a permit condition in Table 3 provided the co-permittee establishes an agreement prior to conducting coordinated environmental monitoring.

2. Compliance Evaluation

At least once per year, the co-permittees must evaluate their compliance with the requirements of this permit with an Annual Report. This self-evaluation includes assessment of progress toward implementing the SWMP control measures in Schedule A, and implementation of actions to comply with any additional requirements in or identified pursuant to Schedules B and D.

3. Annual Report

No later than December 1 each year, beginning in 2021, the co-permittees must submit Annual Reports to DEQ in paper and electronic format until DEQ requires the co-permittees to submit it electronically only via EDMS/Your DEQ Online. The reporting period for the Annual Report is from July 1 of the previous calendar year through June 30 of the current year (for example, July 1, 2021 through June 30, 2022). Reporting periods for subsequent Annual Reports are specified in Table 4 below. The co-permittees must make all Annual Reports available to the public, including any required documents attached to the Annual Report through the co-permittees' maintained website.

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 co-permittee requests an extension in writing and provides all documentation available regarding the specific impacts as to why the December 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.

The Stormwater Management Plan(s) approved by DEQ under the previous iteration of the permit shall provide the framework, measurable goals, tracking measures, and reporting metrics for annual reporting until the SWMP Document required by this permit is approved by DEQ.

Table 4. Annual Report Deadlines

Annual Report	Reporting Period	Due Date
1st Year Annual Report	July 1, 2020 - June 30, 2021	Dec. 1, 2021
2nd Year Annual Report	July 1, 2021 - June 30, 2022	Dec. 1, 2022
3rd Year Annual Report	July 1, 2022 - June 30, 2023	Dec. 1, 2023
4th Year Annual Report	July 1, 2023 - June 30, 2024	Dec. 1, 2024
5th Year Annual Report	July 1, 2024 - June 30, 2025	Dec. 1, 2025

In addition to the compliance evaluation of Schedule B.2, the annual reporting will be required to include, at a minimum, the following:

a. The status of implementing the stormwater management program and each control measure program element in Schedule A.3, including progress in meeting measurable goals and program tracking and assessment metrics identified in the SWMP Document as well as additional annual reporting requirements identified in each section, or, prior to SWMP Document approval by DEQ, measurable goals and tracking metrics approved under the previous permit's approved Stormwater Management Plan(s).
b. A summary of the adaptive management implementation and any changes or updates to

programs made during the reporting year, including rationales for any proposed changes to the stormwater management program (e.g., new BMPs), and review of related new and historical monitoring data. This summary should also include discussion of the implications of or any findings related to recent years' adaptive management and/or changes made to the SWMP Document, based on data from tracking measures, measurable goals, and/or any monitoring related to the change.

c. Any proposed changes to SWMP program elements that are designed to reduce TMDL pollutants.
d. A summary of education & outreach and public involvement activities, progress toward or achievement of measurable goals, and any relevant assessment of those activities. This should include planned adaptive management or other program enhancements to occur in the following years.
e. A summary describing the number and nature of enforcement actions, inspections, and public education programs, including results of ongoing field screening and follow-up activities related to illicit discharges.
f. A list of entities referred to DEQ for possible 1200-Z NPDES general permit coverage based on co-permittee screening activities, a list of categories of facilities inspected, and an overview of the results of inspections of commercial and industrial facilities.
g. A summary of total stormwater program expenditures and funding sources over the reporting fiscal year, and those anticipated in the next fiscal year
h. A summary of monitoring program results, including monitoring data that are accumulated throughout the reporting year submitted in the DEQ-approved Data Submission Template, and any assessments or evaluations of that data completed by the co-permittees or an authorized third party**.**
i. Any proposed modifications to the monitoring plan that are necessary to ensure that adequate data and information are collected to conduct stormwater program assessments.
j. An overview, as related to MS4 discharges, of concept planning, land use changes and new development activities (including the number of new post-construction permits issued) that occurred within the Urban Growth Boundary (UGB) expansion areas during the reporting year, and those forecast for the following year, where such data is available.
k. The details of all corrective actions implemented associated with Schedule A.1.b.iii during the reporting year.
l. Additional Annual Report requirements found in these sections of the permit shall also be complied with:
    - Schedule A.3.c.vii – IDDE
    - Schedule A.3.d.vii – Construction
    - Schedule A.3.e – Post-Construction Site Runoff Program
    - Schedule A.3.f.v.c – Winter Maintenance
    - Schedule A.3.h.i – Hydromodification Assessment and Stormwater Retrofit Strategy Updates
    - Schedule D.3.b – Mercury Minimization Assessment

4. MS4 Permit Renewal Application Package

No later than 180 days prior to permit expiration, the co-permittees must submit a permit renewal application package to support proposed modifications to their programs and stormwater control measures, if any. An electronic copy must also be made available on the co-permittees' websites. The

application package must include an evaluation of the adequacy of the co-permittees' programs and stormwater control measures in reducing pollutants in discharges from the MS4 to MEP, and the conclusions of the annual adaptive management process developed under this permit. The application package must contain:

a. The permit renewal documentation must be submitted through DEQ's EDMS/Your DEQ Online system if it has been implemented for MS4 permittees by that time;
b. Any proposed program modifications or new areas of focus for the coming permit term, including the modification, addition, or removal of BMPs incorporated into the SWMP Document, and associated measurable goals;
c. The information and analysis necessary to support DEQ's independent assessment that the co-permittees' stormwater management programs address the requirements of this permit. The co-permittees must describe how the proposed management practices, control techniques, and other provisions implemented as part of the stormwater program were evaluated using a co-permittee-defined and standardized set of objective criteria relative to the following MEP general evaluation factors:
    i. Effectiveness – program elements effectively address stormwater pollutants
    ii. Local Applicability – technically feasible considering local soils, geography, etc.
    iii. Program Resources – program elements are being implemented considering availability to resources and the co-permittees' stormwater management program priorities.
d. If applicable, the established TMDL pollutant load reduction benchmarks, pollutant load reduction evaluation, and 303d pollutant evaluation, as required in Schedule D, as well as an updated estimate of total annual stormwater pollutant loads for applicable TMDL pollutants or applicable surrogate parameters, and the following pollutant parameters: nitrate, total phosphorus, ortho-phosphorus, copper, lead, and zinc. The estimates must be accompanied by a description of the procedures for estimating pollutant loads and concentrations, including any modeling, data analysis and calculation method;
e. A description of proposed changes to the monitoring plan in the form of a monitoring objectives matrix with accompanying narrative describing the rationales supporting such changes, to be developed based on ongoing discussions with DEQ over the course of the permit term regarding the monitoring needs for the next permit;
f. A description of any service area expansions that are anticipated to occur during the following permit term and a finding as to whether the expansion is expected to result in a substantial increase in area, intensity, or pollutant loads;
g. A fiscal evaluation of program expenditures for the current permit cycle and projected program allocations for next permit cycle; and,
h. Updated MS4 maps, including the service boundary of the MS4, projected changes in land use and population densities, projected future growth, location of co-permittee-owned operations, facilities, or properties with storm sewer systems, and the location of facilities issued an industrial NPDES permit that discharge to the MS4.

5. Submissions

The co-permittees must provide DEQ with one hard copy and one electronic copy of the Annual Report and any supplemental information required by the due date in Table 4, above until EDMS/Your DEQ Online is set up for the co-permittees. DEQ will provide instructions to the co-permittees when electronic reporting will be required to begin. Once the co-permittees are required to submit electronically, the co-permittees will no longer be required to submit such materials to DEQ in hardcopy.

All hardcopy Annual Reports, attachments, and other required submittals must be sent to DEQ at the following address:

Oregon Department of Environmental Quality
MS4 Stormwater Program, Attention: 7th Floor
700 NE Multnomah St., Suite 600
Portland, OR 97232
Email: MS4Stormwater@deq.state.or.us

6. Recordkeeping

a. Records Retention

The co-permittees must retain records and copies of all information (e.g., all monitoring, calibration, and maintenance records; all original strip chart recordings for any continuous monitoring instrumentation; copies of all reports required by this permit; annual reports; a copy of the NPDES permit; and, records of all data or information used in the development and implementation of the SWMP) for a period of at least five years from 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.

b. Availability of Records

The co-permittees must submit records to DEQ when requested. The co-permittees must also make all records described in this permit available to the public, in accordance with Oregon public records laws.

SCHEDULE C - COMPLIANCE CONDITIONS AND DATES

Compliance conditions and dates are not included at this time.

SCHEDULE D - SPECIAL CONDITIONS

1. Legal Authority

The co-permittees must maintain adequate legal authority through ordinance(s), interagency agreement(s), or other means to implement and enforce the provisions of this permit.

2. 303(d) Listed Pollutants

a. Applicability

The requirements of this section apply to receiving waters listed as impaired on the 303(d) list without established TMDL waste load allocations to which the co-permittees' MS4 discharges. The co-permittees must:

i. Review the applicable pollutants that are on the 2018/2020 Integrated Report's 303(d) list, or the most recent USEPA list if approved within three years of the issuance date of this permit, that are relevant to the co-permittees' MS4 discharges with the MS4 Permit Renewal Application Package. Based on a review of the most current 303(d) list at the time, evaluate whether there is a reasonable likelihood for stormwater from the MS4 to cause or contribute to water quality degradation of receiving waters.

ii. Evaluate whether the BMPs in the existing SWMP Document are effective in addressing and reducing the 303(d) pollutants. If a co-permittee determines that the BMPs in the existing SWMP Document are ineffective in addressing and reducing the applicable 303(d) pollutants, the co-permittee must describe how the SWMP will be modified or updated to address and reduce these pollutants to the MEP.

iii. Submit a report with the MS4 Permit Renewal Application Package summarizing the results of the review and evaluation, and identify any modifications or updates to the SWMP Document that are necessary to reduce applicable 303(d) pollutants to the MEP.

3. Total Maximum Daily Loads (TMDLs)

a. Applicability

DEQ incorporated performance measures in Schedule A.3.c, d, e, and f to address water quality impairments and EPA-approved or issued TMDL allocations to date. Compliance with the permit's terms and conditions is presumed to be in compliance with TMDL Waste Load Allocations (WLAs) issued before the effective date of this permit, unless specified below.

The requirements of this section apply to the co-permittees' MS4 discharges to receiving waters with established TMDLs or to receiving waters with new or modified TMDLs approved or issued by EPA within three years of the issuance date of this permit. Established TMDLs are noted on page 1 of this permit. Pollutant discharges for those parameters listed in the TMDL with applicable WLAs must be reduced to the maximum extent practicable through the implementation of BMPs and an adaptive management process.

b. Willamette Basin Mercury TMDL

Each co-permittee is responsible for the applicable WLAs included in the Total Maximum Daily Load (TMDL) for Mercury in the Willamette Basin and the implementation requirements associated Water Quality Management Plan issued by EPA on December 30, 2019 and reissued with modification on +February 4, 2021. These requirements include:

i. Develop and submit a mercury minimization assessment with the annual report due December 1, 2022, that documents the current actions, such as BMPs implemented, that

reduce the amount of solids discharged into and from the permitted MS4 system (similar to the actions currently required in Schedule A). If the assessment indicates that mercury and sediment reducing BMPs are fully incorporated into the SWMP Document, a report documenting the results as such is sufficient.

ii. Continued implementation of the BMPs and other actions described in the mercury minimization assessment that are effective for mercury reduction, along with documentation of implementation in each subsequent annual report.

iii. An analysis of the effectiveness of the best management practices and any other actions taken and qualitative pollutant load reductions achieved in the MS4 Permit Renewal Application Package. Due to data limitations, mercury benchmarks are not applicable in the first permit cycle after the TMDL is finalized.

iv. Collection of paired total mercury and total suspended solids samples, as described in Schedule B.

v. Submittal of paired mercury and total suspended solids monitoring data in the appropriate DEQ data submission template. Given the lack of sufficient mercury data, pollutant load reduction evaluations, benchmarks, and waste load allocation attainment analyses for mercury will not be required in this permit cycle.

c. TMDL Pollutant Load Reduction Evaluation

Progress towards reducing TMDL pollutant loads must be evaluated by the co-permittees through the use of a pollutant load reduction empirical model, water quality status and trend analysis, and other appropriate qualitative or quantitative evaluation approaches identified by the co-permittees. The results of this TMDL pollutant load reduction evaluation must be described in a report and submitted to DEQ with the MS4 Permit Renewal Application Package, in accordance with Schedule B.4. As indicated above in Schedule D.3.b.v, this exercise does not need to include mercury due to insufficient data volume. The report must contain the following:

i. The rationale and methodology used to evaluate progress towards reducing TMDL pollutant loads.

ii. An estimate of current pollutant loadings without considering BMP implementation, and an estimate of current pollutant loadings considering BMP implementation for each TMDL parameter with an established WLA. The difference between these two estimated loads is the pollutant load reduction.

iii. A comparison of the estimated pollutant loading with and without BMP implementation to the applicable TMDL WLA.

iv. A comparison of the estimated pollutant load reduction to the estimated TMDL pollutant load reduction benchmark established for the permit term, if applicable.

v. A description of the estimated effectiveness of structural BMPs.

vi. A description of the estimated effectiveness of non-structural BMPs, if applicable, and the rationale for the selected approach.

vii. A water quality trend analysis, as sufficient data are available, and the relationship to stormwater discharges for receiving waterbodies within the co-permittees' jurisdictional area with an approved TMDL. If sufficient data to conduct a water quality trend analysis is unavailable for a receiving waterbody, the co-permittees must describe the data limitations. The collection of sufficient data must be prioritized and reflected as part of the monitoring project/task proposal required in Schedule B.4.e.

viii. A narrative summarizing progress towards the applicable TMDL WLAs and existing TMDL benchmarks, if applicable. If a co-permittee estimates that an existing TMDL benchmark

was not achieved during the permit term, the co-permittee must apply their adaptive management process to reassess the SWMP and current BMP implementation in order to address TMDL pollutant load reduction over the next permit term; and,

ix. If a co-permittee estimates that TMDL WLAs are achieved with existing BMP implementation, the co-permittee must provide a statement supporting this conclusion.

d. Establishment of TMDL Pollutant Reduction Benchmarks

A TMDL pollutant reduction benchmark must be developed for each applicable TMDL parameter where existing BMP implementation is not achieving the WLA. DEQ recognizes that not enough data may have been collected in the permit term to allow Benchmark development for mercury in stormwater, because it is a new parameter resulting from a new TMDL, so mercury is exempted from this requirement. The TMDL pollutant reduction benchmarks must be submitted with the MS4 Permit Renewal Application Package, as follows:

i. The TMDL pollutant load reduction benchmark must reflect:
   (A) Additional pollutant load reduction necessary to achieve the benchmark estimated for the permit term, if not achieved per Schedule D.3.c.iv.; and,
   (B) The pollutant load reduction proposed to achieve additional progress towards the TMDL WLA during the next permit term.

ii. The TMDL pollutant load reduction benchmark submittal must include the following:
   (A) An explanation of the relationship between the TMDL waste load allocations and the TMDL benchmark for each applicable TMDL parameter;
   (B) A description of how SWMP implementation contributes to the overall reduction of the TMDL pollutants during the next permit term;
   (C) Identification of additional or modified BMPs that will result in further reductions in the discharge of the applicable TMDL pollutants, including the rationale for proposing the BMPs; and,
   (D) An estimate of current pollutant loadings that reflect the implementation of the current BMPs and the BMPs proposed to be implemented during the next permit term.

4. Definitions:

a. **Adaptive Management** is a structured, iterative process designed to refine and improve stormwater programs over time by evaluating results and adjusting actions based on what has been learned.

b. **Antecedent Dry Period** is the period of dry time between precipitation events that include less than 0.1 inch of precipitation.

c. **Best Management Practices** (**BMPs**) means schedules of activities, prohibition of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. BMPs are also treatment requirements operating procedures, and practices to control runoff, spillage, or leads, sludge, or waste disposal, or drainage from raw material storages. See 40 CFR § 122.2 and 122.44(k). For the purposes of this permit, BMPs are synonymous with structural and non-structural stormwater controls and include the schedule of activities, controls, prohibition of practices, maintenance procedures and other management practices designed to prevent or reduce pollution.

d. **CFR** means the Code of Federal Regulations, which is the official annual compilation of all regulations and rules promulgated during the previous year by the agencies of the United States

government, combined with all the previously issued regulations and rules of those agencies that are still in effect.

e. **Chronic Illicit Discharges** are continuous or repeated illicit discharges to an MS4 potentially resulting from sanitary/wastewater connections to an MS4, sanitary/wastewater inflows into an MS4, unpermitted industrial wastewater discharges to the MS4, or other types of illegal dumping or poor housekeeping practices upstream from an outfall where irregular flows, color, smell, or other monitoring parameters indicate an issue that may need repeat investigations over time to ensure cross connections or illegal dumping are remedied. Chronic illicit discharges may not be long-term and ongoing as in the case of illicit connections that can be stopped easily. Chronic illicit discharges may be defined by inconclusive findings of outfall investigations indicating pollutant discharge or repeated reports by members of the public that have not been traced back to a definite source.

f. **Clean Water Act** (**CWA**) refers to what was formally called the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483, and Public Law 97-117, 33 U.S.C. § 1251 et seq. [40 CFR §122.2].

g. **Construction activity** includes, but is not limited to, clearing, grading, excavation, and other site preparation or ground disturbing work related to the construction of residential buildings and non-residential buildings, and heavy construction (e.g., highways, streets, bridges, tunnels, pipelines, transmission lines and industrial non-building structures).

h. **Control Measure**, as used in this permit, refers to any action, activity, Best Management Practice, or other method used to control the discharge of pollutants in MS4 discharges.

i. **Discharge** of a pollutant means any addition of any "pollutant" or combination of pollutants to "waters of the state" from any "point source," or any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This definition includes additions of pollutants into waters of the state from surface runoff, which is collected or channeled by humans; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person, which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger" [40 CFR §122.2].

j. **Effective Impervious Area** is defined as the subset of the total impervious area often hydrologically connected to stream networks via stormwater infrastructure. Many methods of calculating effective impervious area have been developed, and its importance in runoff modeling and watershed health has been well established in stormwater related academic and scientific literature, making it a governing characteristic of urban watersheds.

k. **Erosion** is the process of carrying away soil particles by the action of water, wind, or other process.

l. **Erosion and Sediment Control Plan** is a site-specific plan, map, or document that illustrates and/or lists erosion and sediment control measures that are implemented by type and location on a construction site, that for operators and inspectors alike: (1) identifies potential sources of stormwater pollution at the construction site; (2) describes stormwater controls to prevent pollutants in stormwater discharges from the construction site; (3) tracks or records updates and

corrective actions implemented as site conditions or needs change; and (4) identifies procedures the operator will implement to comply with the terms and conditions of this general permit.

m. **Evaporate** is rainfall that is changed or converted into a vapor.

n. **Evapotranspiration** is the sum of evaporation and transpiration of water from the earth's surface to the atmosphere. It includes evaporation of liquid or solid water plus the transpiration from plants.

o. **Extended Filtration** is the technique of using stormwater facilities designed to promote stormwater runoff filtration through natural or engineered media. The runoff is treated through physical, biological, and chemical processes as it filters through the media of the facility. Filtration is promoted by constructing the facility with media of an appropriate infiltration rate and typically includes an underlying aggregate rock reservoir or other engineered flow-through and filtration media, with an underdrain to convey to a discharge location.

p. **Final Stabilization** is determined by satisfying the following criteria: (1) there is no reasonable potential for discharge of a significant amount of construction related sediment or turbidity to surface waters; (2) construction materials and waste have been removed and disposed of properly. This includes any sediment that was being retained by the temporary erosion and sediment controls; (3) all temporary erosion and sediment controls have been removed and disposed of properly, unless doing so conflicts with local requirements; (4) all soil disturbance activities have stopped and all stormwater discharges from construction activities that are authorized by this permit have ceased; (5) all disturbed or exposed areas of the site are covered by either final vegetative stabilization or permanent stabilization measures. However, temporary or permanent stabilization measures are not required for areas that are intended to be left unvegetated or unstabilized following construction (such as dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, or materials), provided that measures are in place to eliminate or minimize erosion.

q. **Green Infrastructure** (**GI**) is a specific type of stormwater control using vegetation, soils, and natural processes to manage stormwater. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems designed to mimic nature by reducing and/or storing stormwater through infiltration, evaporation, and transpiration. At the site level, such measures may include the use of plant or soil systems, permeable pavement or other pervious surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspirate stormwater and reduce flows to sewer systems or to surface waters. At the scale of city or county, green infrastructure refers to the patchwork of natural areas that provides flood protection and natural processes that remove pollutants from stormwater.

r. **Impaired Water** means any waterbody that does not meet applicable water quality standards for one or more parameters as identified on Oregon's 303(d) list.

s. **Infiltration** is the process by which storm water penetrates into soil.

t. **Illicit Connections** include, but are not limited to, pipes, drains, open channels, or other conveyances that are connected to the MS4 but were constructed for or are currently being used to convey non-stormwater discharges to the public stormwater system or waters of the state and are controlled under the permittee's IDDE program.

u. **Illicit Discharge** is any discharge to a municipal separate storm sewer system that is not composed entirely of stormwater except discharges authorized under Section A.4.a.xii., discharges permitted by a NPDES permit or other state or federal permit, or otherwise authorized by DEQ.

v. **Impervious Surface** is any surface resulting from development activities that prevents the infiltration of water or results in more runoff than in the undeveloped condition. Common

impervious surfaces may include but are not limited to building roofs, traditional concrete or asphalt paving on walkways, driveways, parking lots, gravel lots and roads, and packed earthen materials.

w. **Integrated Pest Management** 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 plant varieties.

x. **Low Impact Development** (**LID**) is a stormwater management approach that seeks to mitigate the impacts of increased runoff and stormwater pollution using a set of planning, design and construction approaches and stormwater management practices that promote the use of natural systems, green infrastructure, and other techniques for infiltration, filtration, evapotranspiration, and reuse of rainwater, and can occur at a wide range of landscape scales (e.g., regional, community and site). Low impact development is a comprehensive land planning and engineering design approach to stormwater management with a goal of mimicking the pre-development hydrologic regime of urban and developing watersheds.

y. **Maximum Extent Practicable (MEP)** is the technology-based discharge standard for municipal separate storm sewer systems to reduce pollutants in storm water discharges that was established by Section 402(p)(3)(B)(iii) of the Clean Water Act [33 U.S.C §1342(p)(3)(B)(iii)].

z. **Minimize** means to reduce and/or eliminate to the extent achievable using control measures (including BMPs) that are technologically available, economically practicable, and achievable in light of best industry or municipal practices.

aa. **Municipal Separate Storm Sewer System** (**MS4**) is defined in 40 CFR §122.26(b) and 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 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 as defined at 40 CFR §122.2.

bb. **Municipality** means a city, town, borough, county, parish, district, association, or other public body created by or under state law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, 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.

cc. **National Pollutant Discharge Elimination System** (**NPDES**) is the national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of Clean Water Act [40 CFR §122.2].

dd. **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 or stormwater design standards 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 other source control measures such as good housekeeping, street sweeping, preventive maintenance, spill prevention, and public education and outreach.

ee. **Outfall** is defined as a point source at the point where a municipal separate storm sewer discharges to waters of the State, and does not include open conveyances connecting two municipal separate storm sewers or pipes, tunnels, or other conveyances which connect segments of the same stream or other waters of the State and are used to convey waters of the State.

ff. **Owner** or **Operator** is the owner or operator of any "facility or activity" subject to regulation under the NPDES program.

gg. **Pesticide** as used in this Permit carries the same definition as used in the Federal Insecticide, Fungicide, and Rodenticide Act and is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest. Under FIFRA, pest is any insect, rodent, nematode, fungus, weed, or any other form of terrestrial or aquatic plant or animal life or virus, bacteria, or other micro-organism

hh. **Pollutant** is dredged spoil; solid waste; incinerator residue; sewage; garbage; sewerage sludge; munitions; chemical wastes; biological materials; radioactive materials; heat; wrecked or discarded equipment; rock; sand; cellar dirt; and industrial, municipal, and agricultural waste discharged into water. [40 CFR §122.2]

ii. **Pollutants of Concern** are defined in NPDES permitting as 1) pollutants with applicable Technology Based Effluent Limitations (TBELs) defined in an NPDES permit based on national or state standards or on a case by case basis, 2) pollutants for which a wasteload allocation (WLA) has been assigned to a discharge through a TMDL, 3) those pollutants identified in a previous iteration of the discharger's permit as needing Water Quality Based Effluent Limitations (WQBELs), 4) pollutants identified through monitoring as present in the effluent or stormwater discharges, or 5) pollutants not in any of the previous categories but otherwise expected to be present in the discharge. For this permit, use of the term is intended to focus on pollutants known by the co-/permittee to be present in stormwater per categories 4) and 5), and prioritized for reduction via stormwater controls identified in this permit.

jj. **Post-Construction Site Runoff Plan** is a plan developed by a site owner or operator and/or their designer to demonstrate compliance with the post-construction stormwater management and long-term operation and maintenance requirements of this permit.

kk. **Predevelopment Hydrologic Function** is the hydrology of a site reflecting the local rainfall patterns, soil characteristics, land cover, evapotranspiration, and topography. The term predevelopment as used in predevelopment hydrologic function is consistent with the term predevelopment as discussed in Federal Register Volume 64, Number 235 and refers to the runoff conditions that exist onsite immediately before the planned development activities occur.

Predevelopment is not intended to be interpreted as the period before any human-induced land disturbance activity has occurred.

ll. **Redevelopment** is a project on a previously developed site that results in the addition or replacement of impervious surface.

mm. **Replace or Replacement**: in the context of this permit, these words will usually refer to the removal of an impervious surface that exposes soil followed by the placement of an impervious surface. Replacement does not include repair or maintenance activities on structures or facilities taken to prevent decline, lapse, or cessation in the use of the existing structures, facilities, or impervious surface, as long as no additional hydrologic impact results from the repair or maintenance activity.

nn. **Stormwater** or **stormwater runoff** includes snow melt runoff, and surface runoff and drainage, and is defined in 40 CFR §122.26(b)(13). "Stormwater" means that 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 stormwater control or infiltration facility.

oo. **Stormwater Control** refers to non-structural, structural stormwater controls and/or BMPs.

pp. **Stormwater Management Program** (**SWMP**) refers to a comprehensive program that includes legal authority, permitting and stormwater control and facility design standards, capital projects and retrofits, monitoring and a stormwater management plan that collectively manages the quality of stormwater discharged from the municipal separate storm sewer system. For the purposes of this permit, the SWMP consists of the actions and activities conducted by the co-permittees as required by the permit and described in the co-/permittees' SWMP Document.

qq. A **SWMP Document** is the written summary that describes the comprehensive management practices, structural and non-structural controls or BMPs, techniques, systems, and design and engineering methods employed to reduce the discharge of pollutants from the MS4 to the MEP in accordance with the terms of the permit. A SWMP Document includes or references stormwater plans, manuals, documents, or code/ordinances, as applicable, describing the unique and/or cooperative means by which an individual co-/permittee or entity implements the specific stormwater management control measures required by the permit.

rr. **Stormwater Mitigation Bank Program** is a program for offsite compliance that establishes a market with an entity that tracks the life cycle of an offsite mitigation credit by certifying the credit, issuing a tradable credit to the seller, transferring the ownership of the credit from the seller to the buyer, and use or retirement of the credit to receive a benefit when buyer of the credit is unable to meet a retention requirement on their site.

ss. **Stormwater Payment-in-Lieu Program** is a program for offsite compliance where the co-/permittee or site owner/operator pays a fee in lieu of full compliance with Schedule A.3.e.iii on the development site with this fee based on volume ratios (e.g., volume of stormwater to be retained onsite to the volume to be retained at the mitigation site) or impervious area unavailable for infiltration, at a rate or rates specified by the co-/permittee. The co-/permittee(s) can aggregate fees and apply them to a public stormwater structural or non-structural control at a later point in time.

tt. **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.

uu. **Subwatershed** is a subdivision of a Watershed and is the sixth-level, 12-digit unit of the hydrologic unit hierarchy as defined by the National Watershed Boundary Dataset (USGS et al. 2013)

vv. **Total Maximum Daily Load** (**TMDL**) or **applicable TMDL** is any TMDL, which has been issued or approved by EPA on or before the issuance date of this permit.

ww. **TMDL Pollutant Load Reduction Benchmark (TMDL benchmark):** An estimated total pollutant load reduction target for each parameter or surrogate, where applicable, for waste load allocations established under an EPA-approved or EPA-issued TMDL. A benchmark is the anticipated pollutant load reduction goal to be achieved during the permit cycle through the implementation of the stormwater management program and BMPs identified in the SWMP Document. A benchmark is used to measure the effectiveness of the stormwater management program in making progress toward the waste load allocation, and is a tool for guiding adaptive management. A benchmark is not a numeric effluent limit; rather it is an estimated pollutant reduction target that is subject to the MEP standard. Benchmarks may be stated as a pollutant load range based upon the results of a pollutant reduction empirical model.

xx. **Transpiration** means to release water vapor into the atmosphere through plant stomata or pores.

yy. **Uncontaminated**, for the purposes of this Permit, means that the MS4 discharge does not: result in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 117.21 or 40 CFR 302.6 at any time since November 16, 1987; or result in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 110.6 at any time since November 16, 1987; or contribute to a violation or exceedance of an applicable Oregon water quality standard.

zz. **Waters of the State** means Lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state, or within its jurisdiction.

SCHEDULE F - NPDES PERMIT GENERAL (MS4)

Revision Date, October 1, 2015

The general conditions in this schedule apply only to the extent they do not conflict with the requirements contained in Schedules A through E. If the permit requirements in Schedule A through D conflict with these general conditions, the permit requirements in Schedule A through D will control.

SECTION A. STANDARD CONDITIONS

A1. Duty to Comply with Permit

The permittee must comply with all conditions of this permit. Failure to comply with any permit condition is a violation of Oregon Revised Statutes (ORS) 468B.025 and the federal Clean Water Act and is grounds for an enforcement action. Failure to comply is also grounds for DEQ to terminate, modify and reissue, revoke, or deny renewal of a permit.

A2. Penalties for Water Pollution and Permit Condition Violations

The permit is enforceable by DEQ or EPA, and in some circumstances also by third parties under the citizen suit provisions of 33 USC § 1365. DEQ enforcement is generally based on provisions of state statutes and Environmental Quality Commission (EQC) rules, and EPA enforcement is generally based on provisions of federal statutes and EPA regulations.

ORS 468.140 allows DEQ to impose civil penalties up to $25,000 per day for violation of a term, condition, or requirement of a permit. The federal Clean Water Act provides for civil penalties not to exceed $25,000 per day for each violation of any condition or limitation of this permit.

Under ORS 468.943, unlawful water pollution in the second degree, is a Class A misdemeanor and is punishable by a fine of up to $25,000, imprisonment for not more than one year, or both. Each day on which a violation occurs or continues is a separately punishable offense. The federal Clean Water Act provides for criminal penalties of not more than $50,000 per day of violation, or imprisonment of not more than 2 years, or both for second or subsequent negligent violations of this permit.

Under ORS 468.946, unlawful water pollution in the first degree is a Class B felony and is punishable by a fine up to $250,000, imprisonment for not more than 10 years or both. The federal Clean Water Act provides for criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment of not more than 3 years, or both for knowing violations of the permit. In the case of a second or subsequent conviction for knowing violation, a person is subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

A3. Duty to Mitigate

The permittee must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit. In addition, upon request of DEQ, the permittee must correct any adverse impact on the environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

A4. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and have the permit renewed. The application must be submitted at least 180 days before the expiration date of this permit.

DEQ may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

A5. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

a. Violation of any term, condition, or requirement of this permit, a rule, or a statute.
b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts.
c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
d. The permittee is identified as a Designated Management Agency or allocated a wasteload under a total maximum daily load (TMDL).
e. New information or regulations.
f. Modification of compliance schedules.
g. Requirements of permit reopener conditions.
h. Correction of technical mistakes made in determining permit conditions.
i. Determination that the permitted activity endangers human health or the environment.
j. Other causes as specified in 40 CFR § 122.62, 122.64, and 124.5.

The filing of a request by the permittee for a permit modification, revocation or reissuance, termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

A6. Toxic Pollutants

The permittee must comply with any applicable effluent standards or prohibitions established under Oregon Administrative Rules (OAR) 340-041-0033 and 307(a) of the federal Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the federal Clean Water Act within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

A7. Property Rights and Other Legal Requirements

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, or authorize any injury to persons or property or invasion of any other private rights, or any infringement of federal, tribal, state, or local laws or regulations.

A8. Permit References

Except for effluent standards or prohibitions established under section 307(a) of the federal Clean Water Act and OAR 340-041-0033 for toxic pollutants, and standards for sewage sludge use or disposal established under section 405(d) of the federal Clean Water Act, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

A9. Permit Fees

The permittee must pay the fees required by OAR.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

B1. Proper Operation and Maintenance

The permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

B2. Need to Halt or Reduce Activity Not a Defense

For industrial or commercial facilities, upon reduction, loss, or failure of the treatment facility, the permittee must, to the extent necessary to maintain compliance with its permit, control production or all discharges or both until the facility is restored or an alternative method of treatment is provided. This requirement applies, for example, when the primary source of power of the treatment facility fails or is reduced or lost. It is not a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

B3. Bypass of Treatment Facilities

a. Definitions
   (1) "Bypass" means intentional diversion of waste streams from any portion of the treatment facility. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, provided the diversion is to allow essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs b and c of this section.
   (2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. Prohibition of bypass.
   (1) Bypass is prohibited and DEQ may take enforcement action against a permittee for bypass unless:
      i. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
      ii. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventative maintenance; and
      iii. The permittee submitted notices and requests as required under General Condition B3.c.

(2) DEQ may approve an anticipated bypass, after considering its adverse effects and any alternatives to bypassing, when DEQ determines that it will meet the three conditions listed above in General Condition B3.b(1).

c. Notice and request for bypass.
   (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, a written notice must be submitted to DEQ at least ten days before the date of the bypass.
   (2) Unanticipated bypass. The permittee must submit notice of an unanticipated bypass as required in General Condition D5.

B4. Upset

a. Definition. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operation error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.
b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of General Condition B4.c are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
   (1) An upset occurred and that the permittee can identify the causes(s) of the upset;
   (2) The permitted facility was at the time being properly operated;
   (3) The permittee submitted notice of the upset as required in General Condition D5, hereof (24-hour notice); and
   (4) The permittee complied with any remedial measures required under General Condition A3 hereof.
d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

B5. Treatment of Single Operational Upset

For purposes of this permit, a single operational upset that leads to simultaneous violations of more than one pollutant parameter will be treated as a single violation. A single operational upset is an exceptional incident that causes simultaneous, unintentional, unknowing (not the result of a knowing act or omission), temporary noncompliance with more than one federal Clean Water Act effluent discharge pollutant parameter. A single operational upset does not include federal Clean Water Act violations involving discharge without a NPDES permit or noncompliance to the extent caused by improperly designed or inadequate treatment facilities. Each day of a single operational upset is a violation.

B6. Public Notification of Effluent Violation

If effluent limitations specified in this permit are exceeded or an overflow occurs that threatens public health, the permittee must take such steps as are necessary to alert the public, health agencies and other affected entities (for example, public water systems) about the extent and nature of the discharge in accordance with the notification procedures developed under General Condition B7. Such steps may

include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.

B7. Emergency Response and Public Notification Plan

The permittee must develop and implement an emergency response and public notification plan that identifies measures to protect public health from bypasses or upsets that may endanger public health. At a minimum the plan must include mechanisms to:

a. Ensure that the permittee is aware (to the greatest extent possible) of such events;
b. Ensure notification of appropriate personnel and ensure that they are immediately dispatched for investigation and response;
c. Ensure immediate notification to the public, health agencies, and other affected entities (including public water systems). The response plan must identify the public health and other officials that will receive immediate notification;
d. Ensure that appropriate personnel are aware of and follow the plan and are appropriately trained;
e. Provide emergency operations; and
f. Ensure that DEQ is notified of the public notification steps taken.

B8. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters must be disposed of in such a manner as to prevent any pollutant from such materials from entering waters of the state, causing nuisance conditions, or creating a public health hazard.

SECTION C. MONITORING AND RECORDS

C1. Representative Sampling

Sampling and measurements taken as required herein must be representative of the volume and nature of the monitored discharge. All samples must be taken at the monitoring points specified in this permit, and must be taken, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points must not be changed without notification to and the approval of DEQ. Samples must be collected in accordance with requirements in 40 CFR part 122.21 and 40 CFR part 403 Appendix E.

C2. Flow Measurements

Appropriate flow measurement devices and methods consistent with accepted scientific practices must be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices must be installed, calibrated and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected must be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes.

C3. Monitoring Procedures

Monitoring must be conducted according to test procedures approved under 40 CFR part 136 or, in the case of sludge (biosolids) use and disposal, approved under 40 CFR part 503 unless other test procedures have been specified in this permit.

For monitoring of recycled water with no discharge to waters of the state, monitoring must be conducted according to test procedures approved under 40 CFR part 136 or as specified in the most

recent edition of Standard Methods for the Examination of Water and Wastewater unless other test procedures have been specified in this permit or approved in writing by DEQ.

C4. Penalties for Tampering

The federal Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit may, upon conviction, be punished by a fine of not more than $10,000 per violation, imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, punishment is a fine not more than $20,000 per day of violation, or by imprisonment of not more than four years, or both.

C5. Reporting of Monitoring Results

Monitoring results must be summarized each month on a discharge monitoring report form approved by DEQ. The reports must be submitted monthly and are to be mailed, delivered or otherwise transmitted by the 15th day of the following month unless specifically approved otherwise in Schedule B of this permit.

C6. Additional Monitoring by the Permittee

If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR part 136 or, in the case of sludge (biosolids) use and disposal, approved under 40 CFR part 503 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the discharge monitoring report. Such increased frequency must also be indicated. For a pollutant parameter that may be sampled more than once per day (for example, total residual chlorine), only the average daily value must be recorded unless otherwise specified in this permit.

C7. Averaging of Measurements

Calculations for all limitations that require averaging of measurements must utilize an arithmetic mean, except for bacteria which must be averaged as specified in this permit.

C8. Retention of Records

Records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities must be retained for a period of at least 5 years (or longer as required by 40 CFR part 503). Records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and records of all data used to complete the application for this permit must be retained for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of DEQ at any time.

C9. Records Contents

Records of monitoring information must include:

a. The date, exact place, time, and methods of sampling or measurements;
b. The individual(s) who performed the sampling or measurements;
c. The date(s) analyses were performed;
d. The individual(s) who performed the analyses;
e. The analytical techniques or methods used; and
f. The results of such analyses.

C10. Inspection and Entry

The permittee must allow DEQ or EPA upon the presentation of credentials to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location.

C11. Confidentiality of Information

Any information relating to this permit that is submitted to or obtained by DEQ is available to the public unless classified as confidential by the Director of DEQ under ORS 468.095. The permittee may request that information be classified as confidential if it is a trade secret as defined by that statute. The name and address of the permittee, permit applications, permits, effluent data, and information required by NPDES application forms under 40 CFR § 122.21 are not classified as confidential [40 CFR § 122.7(b)].

SECTION D. REPORTING REQUIREMENTS

D1. Planned Changes

The permittee must comply with OAR 340-052, “Review of Plans and Specifications” and 40 CFR § 122.41(l)(1). Except where exempted under OAR 340-052, no construction, installation, or modification involving disposal systems, treatment works, sewerage systems, or common sewers may be commenced until the plans and specifications are submitted to and approved by DEQ. The permittee must give notice to DEQ as soon as possible of any planned physical alternations or additions to the permitted facility.

D2. Anticipated Noncompliance

The permittee must give advance notice to DEQ of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements.

D3. Transfers

This permit may be transferred to a new permittee provided the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of the permit and EQC rules. No permit may be transferred to a third party without prior written approval from DEQ. DEQ may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under 40 CFR § 122.61. The permittee must notify DEQ when a transfer of property interest takes place.

D4. Compliance Schedule

Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date. Any reports of noncompliance must include the cause of

noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

D5. Twenty-Four Hour Reporting

The permittee must report any noncompliance that may endanger health or the environment. Any information must be provided orally (by telephone) within 24 hours from the time the permittee becomes aware of the circumstances, unless a shorter time is specified in the permit. During normal business hours, the DEQ regional office must be called. Outside of normal business hours, DEQ must be contacted at 1-800-452-0311 (Oregon Emergency Response System).

The following must be included as information that must be reported within 24 hours under this paragraph:

a. Any unanticipated bypass that exceeds any effluent limitation in this permit;
b. Any upset that exceeds any effluent limitation in this permit;
c. Violation of maximum daily discharge limitation for any of the pollutants listed by DEQ in this permit; and
d. Any noncompliance that may endanger human health or the environment.

A written submission must also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission must contain:

e. A description of noncompliance and its cause;
f. The period of noncompliance, including exact dates and times;
g. The estimated time noncompliance is expected to continue if it has not been corrected;
h. Steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and
i. Public notification steps taken, pursuant to General Condition B7.

DEQ may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

D6. Other Noncompliance

The permittee must report all instances of noncompliance not reported under General Condition D4 or D5, at the time monitoring reports are submitted. The reports must contain:

a. A description of the noncompliance and its cause;
b. The period of noncompliance, including exact dates and times;
c. The estimated time noncompliance is expected to continue if it has not been corrected; and
d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

D7. Duty to Provide Information

The permittee must furnish to DEQ within a reasonable time any information that DEQ may request to determine compliance with the permit or to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit. The permittee must also furnish to DEQ, upon request, copies of records required to be kept by this permit.

Other Information: When the permittee becomes aware that it has failed to submit any relevant facts or has submitted incorrect information in a permit application or any report to DEQ, it must promptly submit such facts or information.

D8. Signatory Requirements

All applications, reports or information submitted to DEQ must be signed and certified in accordance with 40 CFR § 122.22.

D9. Falsification of Information

Under ORS 468.953, any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is subject to a Class C felony punishable by a fine not to exceed $125,000 per violation and up to 5 years in prison per ORS chapter 161. Additionally, according to 40 CFR § 122.41(k)(2), any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit including monitoring reports or reports of compliance or non-compliance will, upon conviction, be punished by a federal civil penalty not to exceed $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

D10. Changes to Discharges of Toxic Pollutant

The permittee must notify DEQ as soon as it knows or has reason to believe the following:

a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:
   (1) One hundred micrograms per liter (100 µg/l);
   (2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
   (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7); or
   (4) The level established by DEQ in accordance with 40 CFR § 122.44(f).

b. That any activity has occurred or will occur that would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
   (1) Five hundred micrograms per liter (500 µg/l);
   (2) One milligram per liter (1 mg/l) for antimony;
   (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7); or
   (4) The level established by DEQ in accordance with 40 CFR § 122.44(f).

SECTION E. DEFINITIONS

E1. *BOD or BOD_5* means five-day biochemical oxygen demand.
E2. *CBOD or $CBOD_5$* means five-day carbonaceous biochemical oxygen demand.
E3. *TSS* means total suspended solids.
E4. *Bacteria* means but is not limited to fecal coliform bacteria, total coliform bacteria, *Escherichia coli* (*E. coli*) bacteria, and *Enterococcus* bacteria.
E5. *FC* means fecal coliform bacteria.
E6. *Total residual chlorine* means combined chlorine forms plus free residual chlorine
E7. *Technology based permit effluent limitations* means technology-based treatment requirements as defined in 40 CFR § 125.3, and concentration and mass load effluent limitations that are based on minimum design criteria specified in OAR 340-041.
E8. *mg/l* means milligrams per liter.

E9. *µg/l* means microgram per liter.
E10. *kg* means kilograms.
E11. m^3/d means cubic meters per day.
E12. *MGD* means million gallons per day.
E13. *Average monthly effluent limitation* as defined at 40 CFR § 122.2 means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.
E14. *Average weekly effluent limitation* as defined at 40 CFR § 122.2 means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.
E15. *Daily discharge* as defined at 40 CFR § 122.2 means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge must be calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge must be calculated as the average measurement of the pollutant over the day.
E16. *24-hour composite sample* means a sample formed by collecting and mixing discrete samples taken periodically and based on time or flow.
E17. *Grab sample* means an individual discrete sample collected over a period of time not to exceed 15 minutes.
E18. *Quarter* means January through March, April through June, July through September, or October through December.
E19. *Month* means calendar month.
E20. *Week* means a calendar week of Sunday through Saturday.

State of Oregon
Department of
Environmental
Quality

National Pollutant Discharge Elimination System
Municipal Separate Storm Sewer Systems
Clackamas Group Phase I Individual Permit
Permit Fact Sheet
Modification #1

Permittees	Clackamas County, City of Gladstone, City of Happy Valley, City of Johnson City, City of Lake Oswego, City of Milwaukie, City of Oregon City, City of Rivergrove, City of West Linn, City of Wilsonville, Oak Lodge Water Services District, Water Environment Services
Existing Permit Information	File Number: 108016 Permit Number: 101348 EPA Reference Number: ORS108016 Category: Phase I MS4 Class: Major Expiration Date: September 30, 2026
Proposed Action	Issuance of National Pollutant Discharge Elimination System (NPDES) individual permit MODIFICATION for stormwater discharges from municipal separate storm sewer systems (MS4) to surface waters of the state. Application Number: 948306 Date Application Received: August 29, 2022
Permit Writer	Pablo Martos 503-229-5785 Date Prepared: April 18, 2023

Summary of Permit Modification Fact Sheet

This permit action modifies the NPDES permit for the Clackamas Group Co-Permittees (which includes Clackamas County, Water Environment Services, Oak Lodge Water Services District, and the Cities of Gladstone, Happy Valley, Johnson City, Lake Oswego, Milwaukie, Oregon City, Rivergrove, West Linn, and Wilsonville) to allow and regulate the discharge of stormwater runoff from the area within its jurisdiction.

Though the modification to the permit comprises only a few lines of text confined to pesticide monitoring requirements in Schedule B.1., this permit modification is not Minor in nature per OAR 340-045-0055(a)A-F, and thus is classified as a Major permit modification subject to public notice and participation requirements. This Permit Evaluation Report describes the basis and methodology used in developing the permit, as well as the changes to the permit shown in the Permit Modification Document circulated for public comment for 35 days beginning January 23, 2023.

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. DEQ has determined that existing water quality would not be degraded by the issuance of this permit modification. The stormwater discharges authorized by this permit have been ongoing since the federal regulations requiring an NPDES permit were adopted. Though the specific number of monitoring points for one parameter (pesticides) is somewhat reduced by this permit modification, this permit is expected to continue to reduce the current level of pollution discharged from each co-permittee's stormwater-related conveyance system and facilities, and aid in the determination of the scope of pollutant problems and best approaches for their reduction. Therefore, the issuance of this permit modification continues to protect and improve existing water quality, and does not in any way increase pollutant load, and is consistent with DEQ's antidegradation policy.

Further, the permit modification does not in any way reduce the range of stormwater management control programs that the co-permittees will implement and/or enhance to minimize stormwater pollution discharges in stormwater runoff to and from their respective MS4s, including from existing and new residential, commercial, and industrial developments and co-permittee owned and/or operated facilities. No effluent limitations are being modified, nor are any requirements for BMPs. The slight reduction in monitoring data points collected also increases flexibility in design options for monitoring planning by separating it from other stormwater monitoring, which broadens the kinds of questions that can be asked and the monitoring objectives that can be addressed. Therefore, the permit modification meets anti-backsliding review.

Table of Contents

1.0 Introduction

This Permit Evaluation Report (PER) explains DEQ's rationale for the permit conditions in the MS4 Phase I Individual Permit for the Clackamas Group Co-Permittees (including Clackamas County, Water Environment Services, Oak Lodge Water Services District, and the Cities of Gladstone, Happy Valley, Johnson City, Lake Oswego, Milwaukie, Oregon City, Rivergrove, West Linn, and Wilsonville; hereafter "co-permittees").

DEQ issued this permit for stormwater discharges from co-permittees' MS4 systems to waters of the state. In order to reduce pollutants from urban stormwater runoff discharging to receiving waters, the permit establishes conditions, prohibitions, and management practices applicable to discharges from the co-permittee's MS4s. Specifically, each co-permittee must continue to implement a comprehensive stormwater management program to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), 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; see also 64 FR 68722 [Dec. 8, 1999].

This permit covers all existing and new stormwater discharges from the co-permittees' MS4 systems, in accordance with the requirements, limitations, and conditions therein.

1.1 Overview and History

The co-permittees own and/or operate a collection of storm sewer systems that serves a population of over 180,000. The urban areas of unincorporated Clackamas County cover approximately 21 square miles within the urban growth boundary. The co-permittees cover an area of approximately 74 square miles, with the Cities, Districts, and the County being responsible for providing drainage systems, primarily for flood control. The County Department of Transportation and Development facilitates oversight of the county transportation system rights of way and appurtenant facilities (maintenance buildings, etc.). The co-permittees' systems include storm sewers (engineered, piped systems) and surface drainage systems. The jurisdictional areas identified in the permit represent the municipal separate storm sewer systems and the stormwater service boundaries associated with these systems.

One major drainage area is within the permit area; this is subdivided further into specific subbasins. The major receiving waters that accept stormwater drainage from the permit area are the Carli Creek, Clackamas River, Cow Creek, Deer Creek, Johnson Creek, Kellogg Creek, Mt. Scott Creek, Phillips Creek, Richardson Creek, Rock Creek, Sieben Creek, Willamette River, Tryon Creek, Tualatin River, Springbrook Creek, Fanno Creek, Lost Dog Creek, Ball Creek, Oswego Lake and other related tributaries to these waterbodies.

The initial permit was issued on December 15, 1995, was renewed in 2004 and 2005, was modified in 2007, and renewed again on March 16, 2012. The permit has been administratively extended since its expiration on March 1, 2017. The co-permittees submitted renewal applications in early 2017, which aided in the formation of this permit. In addition, the Department of Environmental Quality (DEQ) coordinated with the co-permittees and other stakeholders in preparation for this permit.

This permit renews the co-permittees' March 16, 2012 NPDES MS4 Phase I permit. This is the fourth iteration of this municipal NPDES MS4 Phase I 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.

1.2 Legal and Policy Analysis

1.2.1 Antibacksliding Review

This NPDES permit, like its previous iterations, requires each co-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 co-permittees to implement a comprehensive Stormwater Management Program (SWMP) Document as the primary mechanism to achieve the MEP standard to reduce pollutants in their respective MS4 discharges.[1]

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.

1.2.2 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 co-permittees' 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 runoff[2].

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 co-permittees will implement and/or enhance an identified range of stormwater management control programs to minimize stormwater pollution discharges in stormwater runoff to and from their respective MS4s, including from existing and new residential, commercial, and industrial developments and co-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

[1] See 40 CFR § 122.44(k).
[2] 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]

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 each co-permittee's stormwater-related conveyance system and facilities. DEQ expects the pollution reduction measures implemented by the co-permittees in accordance with this permit to offset any expansion of stormwater conveyances systems and outfalls because of the permit requirement to implement a broad range of pollution reduction measures, including measures to address impacts from new development and significant redevelopment. In short, this permit is expected to reduce the current level of pollution discharged from the co-permittees' 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.

1.2.3 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 wasteload allocations (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 TMDL.[3] 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 co-permittees must comply with the more stringent requirements in the *Special Conditions* in *Schedule D* in accordance with 40 CFR § 122.34(e)(1) and 122.44(d)(1)(vii)(A)-(B).

1.2.4 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 468B110. 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 co-permittees to develop, implement, and enforce a SWMP designed to reduce the discharge of pollutants from the MS4 to the MEP, 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

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

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

2.1 Cover Page

The cover page provides information about the co-permittees, description of the sources covered by the permit, major receiving stream information, relevant TMDL WLAs, and permit approval authority. As described, the permit covers all existing and new discharges of stormwater from the MS4. With the exception of the allowable non-stormwater discharges identified in Schedule A.1.d, the permit prohibits all non-stormwater discharges unless otherwise approved by DEQ.

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 October 1, 2021 and expire on September 30, 2026.

2.1.1 Receiving Water Information

The front page of the permit includes information about the receiving stream(s) to which the co-permittees' MS4s discharge stormwater. In addition, a reference is made to the TMDL that establishes WLAs for urban stormwater in applicable subbasins. This reference does not create any permit requirements or represent numeric effluent limits. Rather, it simply acknowledges the existence of the EPA-approved TMDLs and associated stormwater WLAs. The methods by which the co-permittees are required to address applicable TMDLs will be described once the statewide TMDL Water Quality Management Plan has been updated.

DEQ authorizes MS4 discharges to surface waters of the state from facilities owned and/or operated by the co-permittees subject to the requirements of the permit.

2.1.2 Sources Covered by this Permit

The permit covers all existing and new discharges of stormwater from the Municipal Separate Storm Sewer System (MS4) within the defined coverage area.

2.1.3 Permitted Activities

See cover page.

3.0 Schedule A – Effluent Limitations, Conditions, & Stormwater Management Program

3.1 Condition A.1- Authorized Discharges

This NPDES MS4 Phase I Individual Permit ("permit") conditionally authorizes municipal stormwater discharges, and certain types of non-stormwater discharges, provided the co-permittees comply with the terms and conditions of the permit.

3.1.1 Condition A.1.a - Requirement to Reduce the Discharge of Pollutants

The permit for 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 co-permittees must control pollutants in their MS4 discharges to the MEP by addressing the following stormwater 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, pollution prevention and good housekeeping for municipal operations, and industrial and commercial controls. In addition, this permit also addresses the co-permittees' infrastructure retrofit planning, hydromodification assessment, and data compilation and mapping as they relate to stormwater discharges. Implementation of the DEQ-approved SWMP Document, which will outline the details of how the co-permittees will meet the requirements of the permit, will establish compliance with the MEP standard.

3.1.2 Condition A.1.b - Water Quality Standards

This permit does not require compliance with water quality standards. Compliance with all permit requirements constitutes compliance with applicable water quality standards as established in OAR 340-041. The permit includes a framework for documenting, communicating, developing and submitting a plan with corrective actions for circumstances when DEQ or the co-permittees determine 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 or covered by activities described in TMDL Implementation Plan(s). The actions implemented by the co-permittee will be based on the specifics of each situation that causes the exceedance. 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.

3.1.3 Condition A.1.c – Limitations of Coverage

The permit does not authorize the co-permittees to discharge stormwater associated with industrial or construction activity (as defined in 40 CFR § 122.26(b)(14) and (15)). Such discharges are only authorized upon DEQ's issuance of the appropriate general NPDES permit, or a separate individual NPDES permit (as necessary).

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

3.1.4 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 and discharge from the MS4s. Such allowable non-stormwater

discharges cannot be significant sources of pollution to the waters of the state. The co-permittees must prohibit all other non-stormwater discharges into the MS4(s).

The co-permittees are responsible for the quality of the discharge from their MS4, and therefore have an interest in locating and discontinuing, or ensuring the local, state, or federal permitting of any uncontrolled non-stormwater discharges into their MS4, and are required to implement illicit discharge detection and elimination programs (Schedule A.3.c).

3.2 Condition A.2- Co-Permittee's Responsibilities

3.2.1 Condition A.2.a – Coordination Among Other Public Entities and Joint Agreements

Each co-permittee is responsible for compliance with the terms and conditions outlined in the MS4 Phase I Individual Permit related to their MS4 and associated discharges. Implementation of the permit can be shared with other entities. For instance, a co-permittee may develop agreements with entities or jurisdictions adjacent to their MS4 system to implement certain minimum measures within the co-permittee's or that entity's jurisdiction. Similarly, co-permittees may coordinate and/or pool resources with regional partners on stormwater education and outreach messaging to meet relevant requirements of Schedule A.3.a.

A co-permittee, if 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 co-permittees must develop and maintain a written record of agreements with other entities, as a record of accountability. The co-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).

3.2.2 Condition A.2.b – Maintain Adequate Legal Authority

The permit requires the co-permittees to maintain adequate legal authority to implement and enforce the required SWMP control measures as allowed and authorized pursuant to applicable state law.[4] Without adequate legal authority or other mechanisms to control what enters or discharges from the MS4s, the co-permittees 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. The co-permittees must utilize all relevant regulatory mechanisms available to them in accordance with applicable state and federal laws to control pollutants into and from the MS4s, to the MEP. DEQ expects the co-permittees to exercise their legal authority in six specific ways:

1. Effectively prohibit and eliminate pollutants to the MS4 from illicit discharges and connections.
2. Effectively respond to and control spills, dumping or disposal of unauthorized non-stormwater materials into the MS4.
3. Maintain the ability to control pollutants discharged into the MS4 from land disturbance and new and re-development activities occurring within their jurisdiction.
4. Control the contribution of pollutants from one MS4 into another, through interagency agreements as necessary or appropriate.
5. Require compliance with applicable rules within their jurisdiction using public education, technical assistance, or enforcement, as applicable.

[4] 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.

6. Carry out inspections, surveillance, and monitoring procedures necessary to determine compliance with the permit.

The co-permittees must summarize and reference their legal authorities necessary to meet the conditions of the permit in their SWMP Documents as required in *Schedule A.2.b*. The SWMP Document must also describe how the co-permittees will impose their requirements, and/or use cooperative agreements with other jurisdictions or entities, to implement the required stormwater control measures based on their unique legal powers under state law.

3.2.3 Condition A.2.c – SWMP Document

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 MEP, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.

The co-permittees are required to develop and update as necessary, a written Stormwater Management Program (SWMP) Document.[5] The SWMP Document is a separate and distinct submission from the Stormwater Management Plan submitted under the previous permit; the SWMP Document serves similar purposes but also has a different scope and greater flexibility than the previous permit's Stormwater Management Plan. The SWMP Document summarizes the physical characteristics of the MS4, and describes how the co-permittee conducts the required SWMP control measures within its jurisdiction, including descriptions or summaries of BMPs implemented. Throughout this permit, a variety of supporting documents are described as required for inclusion in the SWMP Document; this inclusion may be as subsections of the document, as appendices, or as citations or links that will be updated as supporting program documents are updated. DEQ is allowing supporting documents and strategies to be referenced in the SWMP rather than directly included due to the varying level of detail that may be too voluminous to incorporate. However, supporting documents and strategies, to the extent practicable, must be accessible to the public and clearly referenced in the SWMP Document. The intent of this requirement is to provide DEQ and the public with access to documentation of detailed strategies and guidance documents describing how co-permittees will meet permit conditions. DEQ recognizes that Standard Operating Procedures (SOPs) may change more frequently than Ordinance, or Code, or documents like a Stormwater Manual. Where SOPs are important to the SWMP Document, they should at a minimum be summarized and be available upon request. The SWMP Document should also describe each co-permittee's unique implementation elements such as cooperative or shared responsibilities with other entities or co-permittees. The SWMP Document is intended to address three audiences:

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

Elected officials and co-permittee staff - The SWMP Document can be used by the co-permittees as an internal planning or briefing document.

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

[5] 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."*.

The requirement for the co-permittees 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 (e.g., measurable goals set by the co-permittees, program strategies, BMPs, etc.) are not enforceable permit terms unless specified by the permit, the co-permittees may create and revise the SWMP Document and its supporting documentation as necessary to support adaptive management and provide up-to-date descriptions of how they will meet 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.[6] However, because the SWMP Document is required to be an adaptive management tool that works with each successive iteration toward improvement of MS4 management and water quality, and must provide rationales for changes according to Schedule A.2.f., the SWMP Document is subject to DEQ review and approval on initial submission. DEQ reviewed MS4 permits from other states as well as guidance from EPA in establishing this framework, and though certain guidance from EPA is directed towards Phase II (small) MS4 communities, the framework is valid for application to Phase I communities.

The first iteration of the co-permittee's SWMP Document must be developed with opportunity for public input and submitted to DEQ and posted on their publicly available website no later than December 1, 2022. The SWMP Document must thenceforward 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 co-permittees' SWMP Document submission within 60 days of submission, whenever that occurs, and co-permittees may begin implementation upon approval.

3.2.4 Condition A.2.d, e – SWMP Information, Metrics, and Resources

The co-permittees are required to track indicator metrics and information to document and report on SWMP implementation progress. The co-permittees demonstrate compliance with *Schedule A.2.d* by fully implementing the requirements of this permit. Not every tracking measure must be reported annually in its entirety, but records must be maintained for audits, inspections and/or evaluation by DEQ. The specific tracking measures that are required to be reported annually have been described in the relevant sections.

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 within the MEP framework.

3.2.5 Condition A.2.f – Review and Modification of the SWMP Document

The SWMP Document itself is a requirement of the permit, and like other permit requirements, is subject to DEQ approval. However, as described above in Section 3.2.3, because the SWMP Document is not incorporated by reference into the permit, modifications to the contents of the SWMP Document are not modifications to the permit. For this reason, changes may be made to the SWMP Document at any time, though modifications to delete, adjust, or replace elements of the approved SWMP Document must be supported with a rationale to be submitted with the next Annual Report after the change. The rationale must support the value of the change in terms of effectiveness at pollutant removal from or to the MS4, or overall effectiveness of the program illustrating or demonstrating how the change will not adversely impact water quality. In this way, DEQ maintains oversight to ensure that changes to the SWMP Document are justifiable and supported by evidence or data, while allowing the co-permittees greater flexibility to shift resources, adjust prioritization, and improve their programs as needed, for continued improvement of program effectiveness. DEQ recognizes that updates to the SWMP Document may be made or requested by multiple municipal departments in a given year, and recommends tracking documentation for updates in the form of a "change log" or "version notes" sheet that can be maintained between

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

the cover page and table of contents, in order to simplify reporting. Increased flexibility with SWMP Document updates does not in any way exempt the co-permittees from the requirement to meet permit conditions.

3.3 Condition A.3- Stormwater Management Program Control Measures

Schedule A.3 of the permit contains clear, specific, and measurable requirements. For each minimum control measure, specific tasks, BMPs, design requirements, performance requirements, adaptive management requirements, schedules for implementation and maintenance, and/or frequency of actions are outlined. The specific actions and ongoing activities that comprise the minimum control measure are referred to as SWMP program components. The permit balances implementation flexibility while establishing clear, specific, and measurable permit requirements in accordance with the MS4 MEP standard.

Co-permittees 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.

The co-permittees must continue to conduct their current SWMP controls. Upon the permit effective date, the co-permittees are expected to begin to integrate/develop the conditions of the permit.

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

The co-permittees are required to address the public education and outreach requirements. The co-permittees have conducted public education and outreach programs, as part of their compliance efforts with all prior MS4 permits. DEQ encourages cooperative outreach efforts between other communities to continue this effort, and intends for the terms and conditions of the permit to inspire additional cross-area or collaborative outreach and education efforts to reach stakeholders within their coverage areas.

Once the permit is effective, the co-permittees must update or continue their existing public education and outreach program strategy, and incorporate new program components as necessary.

The goal of the education and outreach strategy is to reduce or change behaviors and practices among the public that cause or contribute to adverse stormwater impacts on receiving waters. The strategy should promote specific actions to increase community and stakeholder understanding of how to reduce pollutant discharges in stormwater runoff and prevent illicit discharge from entering the MS4 or impacting receiving waters, and incorporate strategies to remove barriers to taking these actions.

The permit includes specific requirements to engage key stakeholder groups with topic-specific content. The permit further requires co-permittees to consider equity and environmental justice as a component of their education and outreach strategy, which is an important advancement from previous permit iterations. The public education strategy should inform individuals, households, and businesses about the steps each can take to reduce stormwater pollution, including, but not limited to: avoiding the use of products or chemicals known to cause water quality concerns for humans and wildlife in Oregon; the proper handling, use and disposal of fertilizers, pesticides, motor oil, and other household hazardous wastes; and protecting and restoring riparian vegetation.

The educational materials and activities the co-permittees are required to provide must address the priority audiences listed, and a selection of the prioritized topics, specific behaviors, and removal of barriers to change, to maximize success[7]. The permit allows some flexibility within each stakeholder group for co-permittees to adjust

[7] Many valuable resources exist to help create strategies for public education & outreach, such as Doug McKenzie-Mohr's *Fostering Sustainable Behavior - An Introduction to Community-Based Social Marketing (Third Edition),* available at https://cbsm.com/book

their approach based on local demographics and needs. The permit also specifies a list of priority topics to be addressed by the education and outreach materials but allows flexibility for co-permittees to deviate from the list based on issues of significance in their respective community. Examples of strategies include distributing door hangers, brochures or fact sheets, promoting website information, using social media, sponsoring speaking engagements before community groups, providing public service announcements, implementing educational programs for K-12 students, and conducting community-based projects such as storm drain stenciling, and watershed and stream/beach cleanups. Where appropriate for the co-permittees' community demographics and the presence of community-based organizations that serve diverse audiences and/or work on environmental justice[8], outreach must include messaging in languages and communication methodologies used in the community to ensure diversity, equity, and inclusion in the permittee's programs[9]. 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 co-permittees are expected to prioritize based on an understanding of their own communities, 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.

The co-permittees must track and evaluate the success of public education activities during the permit term with, for example, measures of total reach, proportion of a priority audience reached, and engagement, surveys assessing impact on behaviors of the public, or other qualitative and quantitative assessment methods. The intent is to generate behavioral changes in the community with a positive impact on water quality, and the co-permittees are encouraged to select tracking measures that aid in evaluation of progress toward that goal. The co-permittees are required to maintain records of educational and outreach activities. The intent of this measurable goal is to document and evaluate the success of the program, by both the co-permittees and by DEQ, to continually adaptively manage and enhance future education and outreach in subsequent permits.

3.3.2 Condition A.3.b – Public Involvement and Participation

This section of the permit addresses the public involvement and participation requirements consistent with 40 CFR § 122.26. Federal regulations require MS4 permittees and co-permittees to comply with State, Tribal and local public notice requirements when implementing a public involvement/participation program. The objective of a public involvement and participation program is to provide opportunities for residents from all economic and ethnic backgrounds to participate in the maintenance, further development, or adaptive management of the co-permittees' stormwater management programs. This might involve, for example, establishment of a citizen advisory committee, a volunteer monitoring program, and/or other community engagement activity specifically designed for the co-permittees to receive feedback from local stakeholders that informs stormwater program development or hands-on volunteer assistance that supports existing programs. Public involvement and participation can also be implemented via measures such as surveys of public opinion and attitudes, working with local civic organizations to install medallions or to stencil catch basins to remind the public that pollutants entering the storm sewer system reach local water, or other stewardship opportunities.

Public involvement in planning of stormwater management programs was required for the initial application for NPDES MS4 permit coverage, but there is not an explicit public involvement requirement in the federal regulations regarding the ongoing adaptive management decisions of the stormwater management program.[10] For this reason, public involvement/participation/comment is not required for adaptive management updates to the SWMP Document, but rather only for its initial submission. However, co-permittees are encouraged to use updates to the SWMP Document as an opportunity for public involvement, by advisory committee, public

[8] Recommended readings on Environmental Justice are available at https://www.epa.gov/environmentaljustice
[9] 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
[10] 40 CFR § 122.26 (d)(2)(iv)

comment, or other means as appropriate to the co-permittee's processes and precedent. The co-permittees must update or continue their existing public involvement and participation program and impose the specified new program components.

The co-permittees are required to maintain and promote at least one publicly accessible website to provide all relevant SWMP information to the public. Relevant SWMP information includes the co-permittees' SWMP Document(s), links to ordinances, policies, or guidance documents related to the stormwater management programs required by this permit, relevant public education material, MS4 and other 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. The website must also include the posting of draft documents noted in the permit as requiring public review.

The co-permittees are also required to create or participate in the establishment of stewardship opportunities over the permit term to foster participation by the public. The co-permittees must also maintain records of their public involvement participation activities, and report on participation metrics in every Annual Report through the permit term.

3.3.3 Condition A.3.c – Illicit Discharge Detection and Elimination

This section of the permit addresses the Illicit Discharge Detection and Elimination (IDDE) requirements consistent with 40 CFR § 122.26 (d)(2)(iv) and spill response within the MS4 coverage area. At a minimum, the permit requires the co-permittees to maintain the ability to prohibit, detect, and eliminate illicit discharges from the MS4, and respond to spills of prohibited materials within the MS4 coverage area. Stormwater discharges are different from illicit discharges. Stormwater runoff conveys pollutants that stormwater picks up from upland sources, then flows to the MS4. Illicit discharges are not from precipitation events. Illicit discharges are the addition of pollutants to the MS4 or surface waters from intentional or unintentional human dumping or disposal activities, and may involve sources such as a restaurant dumping mop water outside, or a contractor dumping paint rinsate into a parking lot catch basin, or a resident dumping RV wastes into a stormdrain. Co-permittees must continue to prohibit non-stormwater discharges into the MS4 (except those conditionally allowed by Schedule A.1.d) to the extent allowable under state law (meaning that these programs and procedures are only required to the extent they are permitted under federal and state laws). The co-permittees must implement follow-up procedures as appropriate and actions to ensure compliance.

The co-permittees have implemented IDDE and spill response programs since the initial issuance of the individual MS4 permit.

The permit prohibits the discharge of non-precipitation flows ("illicit" or "non-stormwater" flows) to the MS4 with very specific exceptions conditionally allowed by Schedule A.1.d. Co-permittees must continue to conduct timely, thorough, and systematic illicit discharge investigations and removal of illicit connections. The co-permittees are required to update and maintain written IDDE protocols that include specific procedures for implementation of the IDDE program. Examples of these requirements are a detailed MS4 map and digital inventory, a written prioritization for dry-weather screening activities of areas with a potential of illicit discharges, enforcement protocols, and record keeping.

An IDDE program, including the enforcement and tracking of such a program, is necessary to avoid illicit discharges or improper disposal of waste materials to surface waters. Co-permittees are expected to coordinate with DEQ when illicit discharges occur that may involve DEQ's jurisdictional authority, or as required by the Oregon Emergency Response System reportable quantities standards. Co-permittees are also required to report to other entities, if a spill enters another permittee's or agency's system (e.g., neighboring city, county, etc.). DEQ also encourage the co-permittees to establish or maintain communication channels with local stakeholders such as

watershed councils, conservation districts, etc., regarding concerns with water quality from spills, dumping or accidents that may be cause for concern from the public, as appropriate.

The co-permittees are required to develop or continue to maintain a current MS4 map(s), including any new components of stormwater infrastructure that must be included in the MS4 map and digital inventory. The purpose of the MS4 map and digital inventory, outfall inventory, conveyance system and stormwater control locations, and locations of chronic discharges is to record and verify MS4 outfall locations and include other relevant descriptive characteristics of the system. DEQ expects that the co-permittees know the locations and characteristics of all outfalls that it owns/operates through mapping their infrastructure and associated assets. DEQ also recognizes that such databases of infrastructure and assets are living chronicles of systems that change and grow as more information comes to light, as old assets are removed, as new areas are developed, and as new technologies are implemented.

The MS4 map(s) and digital inventory must be current and made available to DEQ upon request and must also be updated and provided as part of each permit renewal package. The associated inventory must be in a digitized format, with a tabulation of the attributes identified in Schedule A.3.c.i.A-D. To the extent data are available, the mapping and outfall inventory should also include acreages of land uses in the catchment area leading to each outfall, as well as other relevant attributes such as impermeable surface area, percentage of tree cover, etc. While the co-permittees must maintain a current MS4 map and a digital inventory, the permit does not specify their required format. DEQ encourages permittees to utilize a digital MS4 mapping system, such as an electronic geographic information system format, which enables sharing of data and can more easily utilize public tools and sources of information such as Oregon Metro's Data Resource Center or the Oregon Explorer Natural Resources Digital Library.[11] The co-permittees are encouraged to couple this mapping requirement and its products with other control measures, such as their Dry Weather Screening Programs and associated investigations requirements in the Schedule A.3.c.v., and to use it for decision making and adaptive management. For example, attributes or characteristics associated with the outfall inventory could greatly influence the selection of priority locations for annual field screening. The intent is to require co-/permittees to conduct a GIS exercise (or similar data-oriented system) to tap existing data sets where available, and indicate where further data may be needed, and allow for better adaptive management system-wide. Other relevant factors that are also useful to maintain mapping of for association with outfalls and for IDDE investigation purposes, according to the Center for Watershed Protection, include:

- Presence of certain industries by SIC code
- Historic complaints
- Sanitary and storm sewers in close or in common manholes
- "Gaps" in sanitary mapping
- Licensed businesses, SIC codes, industrial permittees
- Areas with businesses with night hours (e.g., bars and restaurants)

Further uses of mapping the above types of information in association with outfalls may include assessing where to prioritize capital improvement projects (e.g., rain gardens, pervious pavement, etc.), where community tree plantings can be focused for maximum effect, and where industrial or utility facilities may be contributing pollutants. The complex interactions among land-covers have several direct implications for the ongoing

[11] See: https://www.oregonmetro.gov/tools-partners/data-resource-center and https://oregonexplorer.info/topics/watersheds?qt-subtopic_quicktab=4&ptopic=98

management of urban watersheds, and co-/permittees are required to gather this information in order to better understand their infrastructure and landscape and the effect of each on stormwater.[12]

Co-permittees must continue to effectively prohibit non-stormwater discharges to their MS4s through enforcement of an ordinance or other legal mechanism to the extent allowable under state law (meaning these programs and procedures are only required to the extent they are permitted under federal and state laws). Section A.3.c.iii identifies the minimum requirements for enforcement procedures that DEQ expects the co-permittees to be able to practice within their jurisdictions, if necessary, consistent with requirements of the previous permit. The ordinance/legal mechanism does not need to cite each individual prohibition, provided that each co-permittee's legal mechanism would or could address illicit non-stormwater discharges into the MS4, whether from commercial or individual sources. 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 receiving water quality.

Permit condition A.3.c.iii requires co-permittees to maintain a written enforcement response policy or plan to support their IDDE Program efforts to detect and eliminate illicit discharges into the MS4 and is consistent with requirements of the previous permit. The enforcement program must include mechanisms to effectively compel compliance from chronic violators that repeatedly violate the illicit discharge requirements. The enforcement program must also consider factors related to the severity of the illicit discharge to inform the selection of associated penalties and/or corrective actions required by the responsible party.

Permit Condition A.3.c.iv establishes DEQ's expectations for a co-permittee's minimum Illicit Discharge Complaint Report and Response program and is consistent with requirements of the previous permit. 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. On average, complaints must be answered within two working days and records regarding actions taken must be maintained. This condition also establishes timelines for co-permittees when responding to complaints and illicit discharges identified through field investigations.

Sources of illicit discharges may be fixed or mobile, intermittent or continuous, yet the frequency or severity of such discharges can have lasting effects on water quality. The nature, extent, actions, and conclusions of each investigation 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 investigations, inspections, outreach, and education activities. Additionally, accurate and complete documentation of incidents provides evidence to support potential citation or civil penalty cases when needed.

Co-permittees must have systems and protocols in place so that they may track and appropriately respond to reports of illicit discharges from the public and co-permittee staff. Co-permittees must ensure that illicit discharges are referred to appropriate response 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. DEQ recognizes that not all reported illicit discharges may be found and tracked to the source upon detection, and so the permit also includes a new requirement to track "chronic illicit

[12] Beck, S. M., McHale, M. R., & Hess, G. R. (2016). Beyond Impervious: Urban Land-Cover Pattern Variation and Implications for Watershed Management. Environmental Management, 58(1), 15–30. https://doi.org/10.1007/s00267-016-0700-8

discharges," as defined in Schedule D. This information is intended to assist in risk mapping, investigations of new reports, prioritization of dry weather screening locations, and other adaptive management.

Co-permittees are required to continue to conduct dry weather screening to identify illicit non-stormwater flows, and DEQ recommends they review the Center for Watershed Protection's IDDE Manual.[13] The Manual includes instructions for maximizing the effectiveness of IDDE programs, including dry-weather screening (AKA the "Outfall Reconnaissance Inventory,") and lays out a process for auditing existing IDDE resources and programs. Such an audit may benefit the co-permittees immensely given the time spent in administrative extension and the new programmatic flexibility granted by the SWMP Document structure. Permit condition A.3.c.v establishes a minimum system evaluation and dry weather screening requirement to comply with this section of the permit, and is consistent with requirements of the previous permit. However, the science continues to evolve, and new research has emerged in the time since the last permit renewal.[14] 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 co-permittees make informed program enhancement decisions related to potential risks posed by factors such as land use, density, impervious area, and age of infrastructure.

This section of the permit requires co-permittees to continue to use dry-weather field screening pollutant parameter 'action levels' that, if exceeded, will trigger the co-permittees to conduct further investigation to identify sources of illicit discharges. DEQ recommends that co-permittees 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).

The co-permittees are required to maintain and update written 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.

This section of the permit also includes the requirement that the dry weather screening inspection activities take place annually, specifically at identified priority locations documented by the co-permittees. The annual field screening must include a portion or all of the co-permittees' identified priority locations. 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 co-permittees, and DEQ recommends the co-permittees review the related resources referenced herein at footnote 14, above. 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, and historical complaints or other appropriate factors as identified by the co-permittees. DEQ

[13] Available at https://www3.epa.gov/npdes/pubs/idde_manualwithappendices.pdf
[14] 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 ; *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

encourages the use of risk analyses based on these factors, as described in recent scientific literature cited above in footnote 14.

DEQ maintains that ongoing field screening activities play an important role in a comprehensive illicit discharge detection and elimination program. Each employee involved in the program must have training in screening for their respective duties in the IDDE program. The training approach and frequencies must be described or referenced in the SWMP Document.

The IDDE program's activities must be tracked and documented. Each MS4 Annual Report should include a summary of all activities involving or relating to illicit discharge.

3.3.4 Condition A.3.d – Construction Site Runoff Control

Co-permittees must continue to implement a program that prevents and/or controls the discharge of pollutants in stormwater runoff from construction sites. Construction sites that disturb one acre or more of land are covered by DEQ's 1200-C construction stormwater general NPDES permit. However, the construction site runoff control requirements in this permit are needed to reflect that the co-permittee controls construction site discharges into their MS4 system for all construction projects that cause ground disturbance, regardless of size (if dirt/turbid water is moving off site via discovery or complaint), otherwise a minimum threshold for inspection is defined. Further, DEQ asks that co-permittees ensure that sites less than one acre follow the main objectives of the 1200-C permit, in other words, properly install & maintain site appropriate BMPs, prevent road tracking, cover stockpiles, safely store onsite materials, properly dispose of waste, and stabilize soils.

The requirements in Conditions A.3.d.i through A.3.d.vii describe DEQ's minimum expectations for the co-permittee's construction stormwater program. The requirements are similar to those in the previous permit, but are more specific about certain actions that the co-permittee is required to perform. The new elements added to this section will increase effectiveness as well as flexibility in program implementation and tracking of outcomes, which will improve transparency and accountability as well as adaptive management capacity. The main elements include having an ordinance to require controls and impose sanctions, requiring implementation and maintenance of BMPs, preventing or controlling site construction wastes from impacting water quality, site plan review procedures, site inspection procedures, and enforcement procedures.

DEQ expects the co-permittees will describe within the site plan review, site inspection, and enforcement procedures the actions and activities the co-permittees will implement to ensure the discharge of pollutants in stormwater runoff from construction sites is prevented and controlled accordingly. The permit language allows for simplified ESCPs or a description of required outcomes with prescribed BMPs for small, low-risk construction sites, provided that the co-permittees' criteria and specifications for such activities, as for ESCPs, are documented or referenced in the SWMP Document, and that construction operators are required to keep a copy of their erosion & sediment control obligations on site or electronically accessible onsite for reference and updating as needed during operations, maintenance of controls, and inspections. These procedures should include the approach the co-permittee will follow to ensure proper installation of erosion control BMPs and the oversight of the installation of stormwater facilities to ensure proper function. All procedures must be referenced in or described in the SWMP Document.

Employees or contractors of the co-permittees involved in the Construction Site Runoff program must be trained in the appropriate program elements related to their work (i.e., ESCP review, site inspections, and compliance and enforcement of the co-permittee's requirements). Training should be conducted for every employee within 60 days of assignment to the program, but before each individual is assigned to conduct activities associated with this section individually (i.e., without guidance/oversite from colleagues) and once per permit term, or every five years, at a minimum.

The program's activities must be tracked and documented. Each Annual Report should include a summary of all activities involving the Construction Site Runoff Control program.

3.3.5 Condition A.3.e – Post-Construction Site Runoff Control

This permit condition requires the co-permittees to continue to control and enforce a post-construction site runoff program applicable to new and redevelopment of sites within their jurisdiction(s).

Urbanization's impact on water quality with its creation of impervious surfaces is well established.[15] EPA's research shows a linkage between low total or effective impervious surface area and changes in stream biotic assemblages. This permit includes requirements that the co-permittees look for opportunities to include both non-structural and structural stormwater controls in existing development when redevelopment occurs.

Each co-permittee developed a post-construction stormwater design standards manual to address post-construction site runoff under a previous iteration of the permit, or implemented one developed by another entity. DEQ recognizes that time and resources will be necessary to update, refine, and issue post-construction site requirements within a co-permittee's jurisdictional boundaries in response to this permit condition. As a result, this condition requires co-permittees to continue implementing current requirements until these new requirements can be reflected and incorporated into their post-construction program in accordance with this permit schedule. DEQ recognizes that many factors are outside co-permittee control and DEQ purview, including land use laws and other state and federal regulations, as well as other local considerations such as policy goals and land use or zoning regulations particular to the co-permittee(s) or their region. These factors are unaffected by stormwater considerations and will affect site design, therefore these permit conditions are not intended to be applied where it would be inappropriate to do so.

Where the previous permit included a condition that required the co-permittees to optimize onsite retention based on site conditions, this permit condition expands on the previous requirements by identifying specific minimum performance standards, or minimum requirements for the development of a co-permittee's own standards, in Schedule A.3.e.iii. DEQ's basis for the permit's new performance standards includes the following:

- Review of the post-construction stormwater requirements of Phase I and 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 required of Oregon's Phase II general permit registrants
- 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
- Recent scientific literature

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

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

Where the previous permit emphasized the removal of obstacles to Low Impact Development/Green Infrastructure (LID/GI) (or equivalent) condition A.3.e.ii explicitly requires the co-permittee to prioritize it

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

through requirements or provision of incentives. The use of the LID/GI (or equivalent) approach to stormwater management, prioritizing non-structural stormwater controls to minimize the creation of impervious surfaces and minimize stormwater volume is an important element in addressing other program conditions, such as optimizing onsite 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 and compacted pervious cover such as gravel parking lots. This condition requires the co-permittees to prioritize green infrastructure when structural stormwater controls are needed to remove pollutants from stormwater or to further reduce stormwater volume prior to discharging. The intent is to make LID/GI the preferred and commonly used approach to site development, and to require extended filtration where LID/GI or other onsite retention is not feasible. There are many methods of incentivizing and prioritizing LID/GI (or equivalent) approaches in local code and practice.[16][17]

This permit condition requires each co-permittee to implement a regulatory trigger for post-construction site runoff when a development or redevelopment creates or replaces an area of impervious surface meeting or exceeding the threshold indicated for the co-permittees in Table 1 of the permit. The intent of this impervious area threshold is to prevent the further degradation of water quality in waterbodies receiving the co-permittees' stormwater discharge. DEQ has established this threshold for post-construction stormwater controls to reduce stormwater volume and to treat stormwater discharges to ensure each co-permittee's stormwater management efforts will contribute significantly to collective efforts to attain water quality standards as a community experiences further urbanization. Thresholds are based on a variety of MEP factors relevant to co-permittees' jurisdictions.

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. As an initial approach, the "Runoff Reduction Method" is appropriate for all municipalities subject to this condition and can be used to create an economic incentive by providing a mechanism to credit the volume reduction associated with better site design and creating a reduction in the overall size and footprint necessary for structural treatment and detention practices.[18] For information on the broad applicability of the runoff reduction method, DEQ encourages the co-permittees to review sources cited in the National Menu of Stormwater BMPs, including 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.[19][20] EPA developed this menu of BMPs "to reduce the risk that permittees will develop inadequate BMPs" as they develop their stormwater programs.

Permit condition A.3.e.iii outlines two 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 co-permittees 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

[16] AHBL. 2012. Integrating LID into Local Codes: A Guidebook for Local Governments, prepared by AHBL for the Puget Sound Partnership, July 2012.
[17] Wulkan, Bruce. 2007. Promoting Low Impact Development in Puget Sound through Regulatory Assistance and Other Measures. Low Impact Development, 1–10. https://doi.org/10.1061/41007(331)1
[18] Battiata, Joseph, Kelly Collins, David Hirschman, and Greg Hoffmann. 2010. The Runoff Reduction Method. Journal of Contemporary Water Research & Education, Issue 146
[19] EPA. 2005. Using Smart Growth Techniques as Stormwater Best Management Practices (EPA 231-B-05-002)
[20] 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.

requirement is not practicable. The intent is to establish an appropriate retention requirement methodology, so that the co-permittees 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 sites. Co-permittees 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 co-permittees 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.[21][22]

When site constraints prevent the on-site retention of the stormwater volume specified in the NSRR, the co-permittees must require treatment of 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 must 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.[23]

Compliance with the stormwater treatment requirement is necessary when designing a structural stormwater control to treat the stormwater runoff volume specified in the co-permittee's design standards prior to its discharge off-site. Specifically, this condition requires that the co-permittees establish treatment standards for structural stormwater controls in order to ensure effective removal of total suspended solids (TSS) prior to discharge, and the co-permittees may include an upper and lower bound on the effluent TSS concentration that reflects the practical limitation of an engineered control (e.g., 80% removal of TSS for typical influent concentrations ranging from 20 mg/L to greater than 200 mg/L). The runoff discharged off-site must target predevelopment hydrologic function in terms of rate, duration, and volume in order to minimize the potential for hydromodification impacts off-site. The co-permittees 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.[24] More importantly, when evaluating options for a structural stormwater control, this condition requires the co-permittees to prioritize the use of green infrastructure, because research (cited here and in Section 4.3.9) emphasizes the value to urban stream ecology of treatment,

[21] https://www.oregon.gov/deq/wq/tmdls/Pages/TMDLs-LID.aspx
[22] EPA. 2008. Managing Stormwater in Your Community; a Guide for Building An Effective Post-Construction Program (EPA 833-R-08-001)
[23] U.S. EPA Green Infrastructure Cost-Benefit Resources Webpage https://www.epa.gov/green-infrastructure/green-infrastructure-cost-benefit-resources
[24] National Research Council. 2009. Urban Stormwater Management in the United States. The National Academies Press, Washington, D.C.

even with simple and inexpensive soil columns, especially in terms of the survivability of salmon and invertebrate populations in urban streams.[25] [26]

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.[27] 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.[28] This is a 32 percent increase from the number of states using a numeric retention standard in 2014.[29] The site performance standard in this condition brings Oregon's permit in line with standards across the country and EPA's guidance.

The other option under Schedule A.3.e.iii, Option B, is for the co-permittees to establish their own narrative site performance standards. This is because, given the history of stormwater management in Oregon, the establishment of numerical site performance standards may represent technical challenges conflicting with existing design and construction standards and practices. If this option is selected, the co-permittees must demonstrate how equivalent benefits are achieved, how LID/GI practices and BMPs are still prioritized, how treatment is achieved to remove TSS before stormwater is discharged, and how pre-development site hydrology is achieved. GI approaches to treating stormwater under this option must infiltrate where soils allow, and may discharge after extended filtration (as defined in Schedule D) where infiltration is infeasible. This option requires the co-permittees' site design measures and planning procedures to require projects to consider site layout options that optimize for retention of stormwater, to the extent allowable by state and federal law (meaning these programs and procedures are only required to the extent they are permitted under federal and state laws). Such site optimization options may include:

- Defining development and protected areas, identifying areas that are most suitable for development and areas to be left undisturbed.
- Concentrating development on portions of the site with less permeable soils and preserving areas that can promote infiltration.
- Limiting overall impervious coverage of the site with paving and roofs.
- Setting back development from creeks, wetlands, and riparian habitats.
- Preservation of significant trees.
- Conforming the site layout along natural landforms.
- Avoiding excessive grading and disturbance of vegetation and soils.

[25] 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

[26] 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

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

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

[29] 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

- Replicating the site's natural drainage patterns.
- Detaining and retaining runoff throughout the site.

Option B also requires the co-permittees to establish a minimum set of defined onsite stormwater controls or site design measures to reduce project runoff. Such controls or measures may include:

- Soil Quality Improvement and Maintenance
- Tree Planting and Preservation
- Rooftop and Impervious Area Disconnection
- Porous Pavement
- Green Roofs
- Vegetated Swales
- Rain Barrels and Cisterns

Condition A.3.e.iv sets requirements for the establishment of Water Quality Benefit Offset Programs in order to allow stormwater mitigation off-site when site-specific conditions make full compliance with either Site Performance Standard option infeasible. This condition is not mandatory if the co-permittees choose not to offer such benefit offset programs. The intent of this condition is to provide the co-permittees with multiple pathways to mitigate the water quality impacts associated with the increase in stormwater arising from urban development, should the co-permittees choose to provide those options for developers. DEQ has concluded that providing more options will give the co-permittees and the development community greater flexibility to achieve permit compliance. The development of such program options not only maximizes opportunities to mitigate water quality impacts but increase the flexibility in reducing pollutant loading.

The option of off-site mitigation or other such programs at another location offers the co-permittees as well as the development community an alternative compliance approach when site constraints make compliance with the retention or treatment requirements 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 would benefit from an inventory of appropriate alternative projects or sites as well as standards to account for how these projects or sites will meet the stormwater retention or treatment requirements in the site performance standard. This inventory would serve 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 co-permittees. The co-permittees 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 co-permittees' stormwater systems. Moreover, to minimize additional administrative costs, the Operations & Maintenance (O&M) tracking mechanism could be used by the co-permittees to record performance of mitigation projects and water quality impacts of development at another location.

This condition offers two other off-site mitigation options that, if utilized by the co-permittees, require the establishment of a stormwater mitigation bank program or a stormwater payment-in-lieu program. 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 or treatment requirement at the development site. However, as noted below, the administrative burden in implementing a stormwater mitigation-banking program is likely to be offset by its future cost savings. Additionally, the co-permittees may again choose to collaborate with other MS4 entities to implement this

condition as a group in an effort to leverage their collective resources and establish more uniform requirements in a region for the development community.

The cost savings from stormwater mitigation banking is typically achieved when a co-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 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 co-permittees 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 or treatment 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, impervious area, site usage, or other factors. Additionally, if a co-permittee develops a payment-in-lieu program, the co-permittee will need to develop a rubric or set of trading ratios and the scale of trading, in order to define the value of the payment to be required in lieu of compliance with retention or treatment requirements for a given impervious area. The rubric or trading ratios would 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, or the dollar amount due for such offsite mitigation for a given project. 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 co-permittees' limited resources to strategically locate stormwater controls for greater environmental impact. The co-permittees may aggregate fees and apply them to a stormwater structural or non-structural control at a later point in time. This compliance flexibility and additional funding provided by a payment-in-lieu program will likely, over time, offset the administrative costs of establishing a pay-in-lieu program.

The groundwater replenishment project option allows the co-permittees 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 co-permittees' 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 co-permittees' jurisdictions. The opportunity to generate these credits by maximizing the stormwater retained on a site, in turn, creates an incentive for the co-permittees or developer to pursue groundwater replenishment projects. This requirement will also help support the co-permittees' 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. For more information, DEQ recommends Water Environment Foundation's 2015 report, *Pathways to One Water – A Guide for Institutional Innovation.*

This permit condition also requires the co-permittees to review and approve site plans to verify proper implementation of post-construction site runoff plans for all new development and redevelopment projects, at a minimum, at sites that develop or replace impervious area exceeding the established impervious area threshold. 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 co-permittees must have the authority to deny projects when it determines that the controls at a specific site are not designed to meet the established standards.

DEQ expects that co-permittees will establish submittal requirements for post-construction site runoff plans, and requirements for documentation of site-specific circumstances requiring deviation from adherence to the NSRR or alternative site retention standard, including a description of circumstances in which a written justification by an Oregon Registered Professional Engineer or Oregon Certified Engineering Geologist would be required for approval. Economic considerations alone are insufficient reason for allowing deviation from adherence to the retention and treatment standards. Providing clear submittal requirements for plans will also meet the education requirements for developers.

The co-permittees must ensure the long-term operation and maintenance of structural stormwater controls.[30] The permit requires the co-permittees 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 operation and maintenance tasks. Ongoing maintenance is necessary to ensure that the BMPs will perform as designed over time, especially with LID/GI, as these often include landscaping work and maintenance of plant communities, which is not always well considered in engineering design and long-term cost estimations. Ongoing maintenance of existing stormwater management controls is a primary challenge for many local stormwater management programs across the country. This is why, for example, the permit includes a requirement to ensure that operation & maintenance procedures for controls that include soil must be designed to maintain permeability of those soils, though it does not require testing to verify. 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. The co-permittees must track those permanent controls which are known to them, or for which they accept ownership, beginning no later than the permit effective date.

Each co-permittee employee or contractor involved in the program must be trained in their respective area of practice, e.g., site plan reviews, inspections, and O&M practices. More specialized training may be required for the co-permittees' employees and contractors that conduct reviews of plans or evaluate compliance with long-term operation and maintenance requirements. The co-permittees' training approach and frequencies must be described or referenced in the SWMP Document. DEQ recommends that training should be conducted for each type of participant at least once per permit term.

The program's progress must be tracked and documented. Each MS4 Annual Report should include a summary of activities involving Post-Construction Site Runoff Controls.

3.3.6 Condition A.3.f – Pollution Prevention and Good Housekeeping for Municipal Operations

Operation and maintenance of municipal facilities 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.

The permit requires the co-permittees to reduce the discharge of pollutants from co-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

[30] See resources at https://www.epa.gov/green-infrastructure/green-infrastructure-operations-and-maintenance , and https://www.epa.gov/npdes/stormwater-maintenance ,

fertilizers in public rights-of-way and at co-permittee-owned facilities are required. DEQ encourages the adoption of Integrated Pest Management (IPM)[31] approaches through policy or ordinance as well as SOPs for co-permittee staff and contractors.

These permit conditions clarify and expand the conditions under the pollution prevention for municipal operations program element relative to the previous permit, and include specific requirements intended to prevent or reduce pollutants from properties owned or operated by the co-permittees. The types of properties or facilities DEQ envisions to be included under this program include parks and open spaces, fleet and building maintenance facilities, transportation systems and fire-fighting training facilities for which the co-permittees have authority, as well as other facilities and activities as described in Schedule A.3.f.iv. The actions, activities and approaches related to this permit condition are important because the co-permittees have direct control of these types of operations, and the actions, activities and approaches may play a role as a broader example of the type of efforts that can be implemented.

Permit condition A.3.f.ii requires the co-permittees to establish a program for the systematic inspection, maintenance, and cleaning of the co-permittees' MS4 System, 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 co-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 co-permittees' databases, 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 co-permittees may change the inspection process every year to complement or reflect the findings of the previous year's inspections. Co-permittees may establish an inspection prioritization system for catch basins and other structural MS4 elements, and establish alternate inspection frequency every year, provided the co-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 co-permittees 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 co-permittee describes or includes by reference its rationale in the SWMP Document.

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 co-permittees 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 co-permittees must ensure that materials used for winter maintenance activities in municipal operations are stored and used appropriately, and

[31] 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.

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 MS4 co-permittees. The goal of the winter maintenance condition in the permit is to document how the co-permittees use and store 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.

This permit condition is not intended to conflict with other NPDES permit conditions or regulatory mechanisms. The co-permittees must implement the condition while still in accordance with the O&M Strategy for stormwater controls, described in Schedule A.3.e.v (Long Term Operations & Maintenance, in Post Construction) and other elements of this Pollution Prevention for Municipal Operations section.

This permit condition requires employees of the co-permittees to receive appropriate training, such that operation and maintenance activities are conducted properly and with attention to potential water quality impacts.

This permit condition requires that the co-permittees maintain records of their Pollution Prevention and Good Housekeeping for Municipal Operations programs and summarize activities in the MS4 Annual Report.

3.3.7 Condition A.3.g – Industrial and Commercial Facilities

Federal stormwater regulations envision states and municipal co-permittees cooperating in addressing pollutants in stormwater discharges to municipal storm sewers from industrial facilities.

Currently, Clean Water Services and the cities of Eugene and Portland, through an Inter-Governmental Agreement (IGA) with DEQ, act as DEQ's agents for 1200-Z NPDES industrial stormwater permits within their jurisdictions. The IGA outlines both DEQ's and the agent's responsibilities in carrying out permit administration and compliance, including a fee-sharing agreement. An Agents' major responsibilities typically include processing new industrial NPDES permit applications and making permit registration recommendations; reviewing stormwater discharge monitoring reports; reviewing action plans; inspecting sites; and being the first-responder for complaints and permit compliance.

For co-permittees that do not act as DEQ's agent, this permit condition requires the co-permittees to screen existing and new businesses, and notify the facility and DEQ when they identify businesses that may require NPDES industrial stormwater general permit coverage. Industrial activities that are subject to permitting requirements are determined by SIC codes listed in the federal regulations and by the location of the discharge. This requirement assists DEQ in identifying businesses that need NPDES permit coverage and will assist the co-permittees in evaluating industrial stormwater discharges within their jurisdictions. Copying DEQ on the correspondence with the business meets this requirement. A list of all businesses that were contacted during the prior year should be included in each annual report.

This condition also requires that priorities and procedures for inspection and implementation be established, and be described, referenced, or cited in the SWMP Document for industrial and commercial facilities where site-specific information has identified a discharge that contributes a significant pollutant load to the MS4. The terms "significant pollutant load," "pollutants of concern," and significant pollutants" are intended to reflect the concerns identified in the co-permittees' community, Although this condition does not specifically require the co-permittees to evaluate all commercial and industrial sources within their jurisdiction, DEQ anticipates the current IDDE program, monitoring, pollution prevention activities, and the evaluations required by this section will

identify the appropriate commercial and industrial sources of pollutant load to the MS4 so that the co-permittees may focus their efforts where they'll be most effective. Coordination of stormwater evaluation with other programs, such as a commercial/industrial pre-treatment program's Industrial User Survey or business licensing questionnaire, is encouraged, but not required. Co-permittees are also encouraged to examine other DEQ resources for useful program elements they may choose to incorporate, including DEQ's 1200-Z stormwater permit's Stormwater Pollution Control Plan template and Check List, and the Industrial Stormwater BMP Manual[32].

Included in this condition is an update to the Industrial/Commercial Facilities Strategy developed in the previous permit term, including development of an inventory of businesses with the potential to discharge a significant pollutant load to the MS4, inspection and enforcement requirements, and provision of education on stormwater management to inspected facilities as appropriate (e.g., as follow up to or part of an inspection, or as part of the public education and outreach program). DEQ anticipates this requirement will further strengthen and complement related stormwater management efforts, such as IDDE, education and outreach, operations and maintenance of structural controls, and/or the identification of priority retrofit approaches or areas.

This condition also requires training of staff, tracking of activities conducted to fulfill the requirements of this section, and a summary of the data collected to be included in the annual reporting.

3.3.8 Condition A.3.h – Infrastructure Retrofit and Hydromodification Assessment Update

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 of a pollutant source than impervious areas, and that Coho in more urbanized areas are more vulnerable to nonpoint source pollution irrespective of the timing, intensity, or frequency of storms[33]. 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 columns[34]. Findings like these may inform shifts in strategies and priorities for retrofits in the future, so it is important to re-evaluate retrofit and hydromodification strategies periodically, and to share with DEQ and the municipal stormwater community how priorities have already shifted to improve effectiveness.

In the most recent permit cycle, the co-permittees developed a retrofit strategy and a hydromodification assessment that evaluated their systems and established priorities for progress toward improvements in water

[32] Available at https://www.oregon.gov/deq/FilterPermitsDocs/1200zguide.pdf and https://www.oregon.gov/deq/FilterDocs/IndBMP021413.pdf , respectively.
[33] 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
[34] 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

quality. This permit condition requires a status update on these efforts and an evaluation of any changes in priorities since initial development and implementation. DEQ expects that the co-permittees' efforts initiated in the previous permit term to assess, understand, and address hydromodification impacts and retrofit planning require an ongoing, systematic evaluation, modification, and implementation over multiple NPDES permit cycles, and the update is simply intended to reflect the current status. The information that is identified in the update report will be used in the development of requirements in subsequent permits.

3.3.9 Condition A.3.i – Summary of SWMP Document Requirements and Deadlines

DEQ has included a schedule summarizing the due dates for completion of new program element activities or tasks required in Schedule A or the submittal date for information or reports related to these activities or tasks. The deadlines reflect DEQ's consideration and analysis of the resources (personnel, financial, time) needed to complete each action or activity, the current status and future capacity of the local MS4 stormwater management programs, and DEQ's municipal stormwater program.

4.0 Schedule B — Monitoring and Reporting Requirements

4.1 Condition B.1 –Monitoring Program

This permit condition describes the Monitoring Objectives, as well as the requirements for the Monitoring Plan, for the Sampling & Analysis procedures, and for collaboration among co-permittees or where a third party is conducting monitoring for a permittee or co-permittee.

The results of the monitoring program are used to evaluate the effectiveness of the stormwater management program in reducing the discharge of pollutants to the maximum extent practicable. Although knowledge of stormwater management is continually increasing, significant knowledge gaps remain. In an ongoing effort to reduce the knowledge gaps as they relate to MS4 program management in Oregon, the requirements in Schedule B provide flexibility for implementing a monitoring program to improve adaptive program management while identifying an appropriate monitoring approach for gathering specific information about stormwater program effectiveness.

DEQ also considered the extensive resources necessary to conduct a monitoring program to produce quality data, and the importance of appropriately balancing the expenditure of limited program resources between implementation and verification of program effectiveness. DEQ expects a suitable level of environmental monitoring (i.e., field monitoring) be conducted, along with the identification and evaluation of supplemental data/information, in order to continue to build datasets and knowledge for the adaptive management of the stormwater programs.

This permit condition continues to require that the monitoring programs incorporate the listed monitoring objectives similar to the monitoring objectives listed in the existing permits. The monitoring objectives establish the foundation for a broad monitoring program intended to address complex issues related to stormwater management, including source evaluation, best management practice effectiveness, pollutant discharge characterization, and the related status and trends in water quality.

This permit condition also continues to require an appropriate level of environmental monitoring be conducted during the permit term to ensure ongoing collection of monitoring data to support effective stormwater management decision-making and the identification of water quality improvements. This monitoring will be used to inform future monitoring needs and requirements. DEQ acknowledges that urban stormwater runoff in Oregon has, in many ways, been adequately characterized, and that more emphasis is needed around BMP effectiveness. DEQ intends to foster an intentional, collaborative, and ongoing dialogue with MS4 entities over the course of the permit term with the intent to increase monitoring effectiveness and decrease costs.

The environmental monitoring requirements identified in Table 3 are based on the requirements of the previous permit term, with modifications accounting for changes since the previous permit's issuance in the body of knowledge about urban stormwater in Oregon, and reflect a commitment that the environmental monitoring activities will contribute to addressing select monitoring objectives. For example the pesticide parameters included in the monitoring requirements table reflect information gathered from multiple Oregon data sets and analysis of multiple sources, including the 2015 USGS Willamette Basin monitoring study, Oregon Pesticide Stewardship Partnership (PSP) program data, and MS4 and UIC permit-related pesticide monitoring data.[35] Decisions for pesticide inclusion were based on detected pesticide concentrations relative to EPA aquatic life benchmarks or Oregon water quality criteria, and pesticide detection frequency in urban watersheds. The use of a

[35] See resources at https://www.oregon.gov/ODA/programs/Pesticides/Water/Pages/AboutWaterPesticides.aspx and https://pubs.usgs.gov/fs/2015/3020/pdf/fs2015-3020.pdf

decision matrix developed by the Oregon inter-agency Water Quality Pesticide Team determined the top pesticides for inclusion by detection frequency and by concentration relative to a benchmark.

The combined amount of pesticide monitoring required in Permit Modification #1 is adequate to meet the needs of the permit and inform future management practices by the co-permittees. The Permit Modification, while requiring fewer pesticide samples than the originally issued permit, also separates pesticide monitoring from the other stormwater monitoring events, which allows for greater flexibility in monitoring plan options. This increases options for study questions regarding pesticides in urban environments and ensures that multiple monitoring objectives can be targeted, including source evaluation; BMP effectiveness monitoring; characterization of pesticide discharges by seasonality, land use and other factors; status and long-term trends of receiving waters; and assessment of the impacts of MS4 discharges on conditions of receiving waters.

Table 3 also ensures that data collection for applicable 303(d) and TMDL pollutant parameters is continued, monitoring approaches and collection methods that will allow for appropriate statistical analysis are utilized, and data related to pesticides in urban stormwater is collected. Table 3 includes instream biological monitoring (e.g., macroinvertebrate survey) to provide a more comprehensive assessment of water quality.

The development and implementation of a comprehensive monitoring plan is required by this permit condition. The monitoring plan must be designed to guide the co-permittees in addressing the monitoring program objectives and serve as a key component in the adaptive management of the stormwater program. Addressing the monitoring objectives will typically require a different monitoring strategy or project design, and resource availability often limits the number of sample events, sample locations and pollutant parameters that can be reasonably and cost-effectively collected and analyzed during a permit term. The monitoring plan submitted previously may serve as an acting document until the requirements of Schedule B take full effect.

In the development of this condition, DEQ determined the co-permittees will need additional time immediately following permit issuance to incorporate the new monitoring requirements and added operational flexibility into the monitoring plan. The monitoring plan must be submitted to DEQ by December 1, 2022 for review, and DEQ expects that monitoring plans that incorporate the applicable monitoring plan requirements will be approved accordingly within 90 days. Implementation of the monitoring plan must begin by July 1, 2023, assuming DEQ approval has been conveyed by that date. This permit condition outlines the specific information that must be included in the monitoring plan for each environmental monitoring project or task, including those necessitated by the requirements identified in Table 3. This permit condition generally requires documentation of the planning, implementation, and assessment procedures, including specific quality assurance and quality control activities, which are necessary to obtain the type and quality of environmental data and information needed for its intended use.

This permit condition specifically requires the identification of how each of the six monitoring objectives is addressed. For example, co-permittees must document in the monitoring plan the sources of information and stormwater program best management practices or environmental monitoring projects or tasks that will be used to address the monitoring objectives. Modifications to the co-permittees' monitoring plan will still require the co-permittees to request and receive DEQ approval unless the specific conditions highlighted in this section are met. This permitting approach will result in more detailed monitoring plans, which will provide additional transparency into the collection, analysis, assessment, and use of monitoring data.

The sampling and analytical requirements presented in this permit condition establish the provisions for collection and analysis of environmental monitoring data to ensure appropriate data are available to support adaptive stormwater management. With DEQ approval, deviations from prescribed sampling and analysis procedures may also be permitted, as needed.

Although the permit allows in-stream monitoring during the dry season in western Oregon, which is useful for seasonal comparisons, this permit condition requires at least 50% of all instream monitoring will be conducted during the wet-season, when discharges from the MS4s are more prevalent. A minimum time period between in-stream monitoring events has also been established to address potential correlation in the monitoring data. The intent of this requirement is not to discourage continuous or frequent sampling, but to ensure that sampling events are spread out to represent varying conditions when sampling is less frequent. Similarly, the stormwater sampling requirements specify what conditions qualify as an acceptable storm event. Due to the cost associated with mobilizing for stormwater monitoring, and considering the type of rainfall events in western Oregon, DEQ is providing the co-permittees with flexibility to target a variety of rainfall events. The rainfall events that are targeted should include those which may yield high pollutant loads/concentrations by representing a range in types of expected events based on factors such as rainfall intensity and duration, and antecedent dry period. DEQ will require the co-permittees to use the data submission template for all monitoring results for the permit term.

This permit condition also specifies the requirements that must be met for a co-permittee to use coordinated monitoring as a means to address their environmental monitoring requirements. The environmental monitoring requirements are identified in Table 3. In light of the fact that environmental monitoring data must be collected and analyzed in accordance with a monitoring plan that reflects the requirements in Schedule B.1.c, DEQ requires that an agreement is established prior to the coordinated environmental monitoring being conducted. DEQ does not, however, expect the agreement to be formal, such as a signed contract or intergovernmental agreement, as long as each party participating in the coordinated monitoring activity understands its roles and responsibilities, and the agreement is documented.

DEQ recognizes that scientific literature, EPA guidance, and trends in urban stormwater monitoring across the country continue to make the case that coordinated monitoring on larger, watershed scales is the most effective way to answer questions about the impacts of urban stormwater on receiving waters and anticipates that the requirements of Schedule B may need to change in future permit terms. DEQ anticipates convening discussions to consider regional monitoring program(s), and encourages co-permittees to engage in larger coordinated efforts to conduct studies and share data with entities not subject to the permit, whether those entities have MS4 permits of their own or not. Such a regional program(s) would likely reduce costs and produce more actionable data to inform future permits.

4.2 Condition B.2, 3 – Compliance Evaluation and Annual Report

The co-permittees are required to submit an evaluation of their progress toward implementing the control measures of the SWMP Document and their conditions described in Schedule A, as well as any applicable Special Conditions described in Schedule D. This will be included in the Annual Report submitted to DEQ by December 1 each year, beginning in 2021, for the time period July 1 of the previous year through June 30 of the same year.

One printed copy and an electronic copy must be submitted to DEQ at the locations listed in the permit until DEQ requires the co-permittees to submit all of the elements electronically. This section lists the requirements for the contents of the annual report.

The annual reporting requirements are similar to the previous permit requirements and are largely derived from the federal stormwater regulations[36]. This permit condition has been modified to add clarity and reflect updated

[36] 40 CFR § 122.42(c)

permit language, such as reporting progress towards meeting measurable goals. The permit condition requires the annual report be made available electronically as part of the formal submittal to DEQ and on the co-permittees' websites to further enhance the transparency of the stormwater programs. The annual reporting requirement also includes a summary of adaptive management implementation, both in terms of changes made to the SWMP Document or stormwater management programs within the reporting year, and reflecting on what the findings from the reporting year have shown about adaptive management modifications made in prior (recent) years.

4.3 Condition B.4 – MS4 Renewal Application Package

The co-permittees must submit a permit renewal application package no later than 180 days prior to the expiration date of this permit in order to continue permit coverage for MS4 stormwater discharges in the event the permit has not been renewed prior to expiration. This permit condition describes the information that must be provided in the renewal application. Renewal applications must contain any proposed modifications to the stormwater program, including proposed alterations to the SWMP Document. In the interest of transparency, renewal application is an opportunity to solicit public input from the co-permittees' communities, separate from the periodic updates to the SWMP Document between renewals that do not require public review. DEQ will evaluate the programs based upon the information submitted with the permit renewal application and all other relevant information, such as annual reports, Total Maximum Daily Load (TMDL) pollutant load reduction evaluation, applicable scientific studies, and federal requirements and guidance.

As in the previous permit, this condition includes a requirement for the co-permittees to provide DEQ with the information and analysis necessary to support DEQ's independent determination that the co-permittees' stormwater management programs reduce pollutants in stormwater discharges to the MEP, including an evaluation of the management practices, control techniques and other provisions using three MEP general evaluation factors (i.e., effectiveness, local applicability, and program resources). Since each MS4 stormwater management program is unique in how they achieve the MEP standard, often employing different BMPs or emphasizing different program areas, this requirement calls for the use of a defined set of standardized and objective criteria for each of the three MEP evaluation factors. Using a co-/permittee-defined set of objective criteria will ensure a consistent application and equitable assessment of the stormwater programs, and a reasonable certainty that the stormwater programs are achieving the MEP standard. DEQ encourages the co-permittees to coordinate the identification and development of the objective criteria with other MS4 co-permittees, and involve DEQ early in the permit term to guarantee the appropriateness and usefulness of the objective criteria for DEQ's independent evaluation.

The MS4 permit renewal package must also include a proposed monitoring program objectives matrix with proposed changes to the monitoring plan. The monitoring objectives matrix and proposed changes to the monitoring plan should complement the long-term monitoring strategy identified in the existing monitoring plan, as required in the monitoring plan permit conditions, and should consider the type of additional environmental monitoring data that is needed in the implementation of the adaptive management process. DEQ anticipates rigorous engagement with the co-permittees and stakeholders during the permit term about monitoring approaches, pollutants of concern, a watershed-scale monitoring collaboration, or other factors that the co-permittees should consider when updating their monitoring objectives matrix and proposed changes to the monitoring plan. DEQ anticipates the proposal will be used in future development of the specific monitoring requirements.

4.4 Condition B.5 —Submissions

The co-permittees will submit their MS4 Annual Reports and renewal application in both hard copy with a wet signature, and electronic copy. Once the co-permittees receive instructions to submit electronically they will not

be required to submit a hard copy, but may be required to adjust the format at a later date. The current address to submit the MS4 Annual Reports and related submittals is provided in the permit.

4.5 Condition B.6 —Recordkeeping

This section describes the co-permittees' responsibilities to retain information regarding this permit. Records must be retained for a period of at least five years from the permit compliance action date, or for the term of the permit, whichever is longer. The co-permittees must have these records made available to DEQ and the public.

5.0 Schedule C – Compliance Schedule

A compliance schedule was not specified for this permit.

6.0 Schedule D – Special Conditions

6.1 Condition D.1 – Legal Authority

The language in this condition requires the co-permittees to maintain adequate legal authority to implement and enforce the provisions of the permit. DEQ considers the general permit language adequate to reflect the complexity of this fourth-generation permit and captures the objective of this condition.

6.2 Condition D.2 – 303(d) Listed Pollutants

This permit condition requires the co-permittees to evaluate 303(d) listed pollutants for those waterbodies for which TMDLs have not yet been approved by USEPA and to which the MS4 discharges. The requirements of this condition are similar to the existing permit requirements, and include an evaluation to determine the likelihood that discharges from the MS4 cause or contribute to the water quality degradation, an assessment of the effectiveness of co-permittees' BMPs in addressing and reducing the applicable 303(d) listed pollutants, and an identification of SWMP revisions that may be necessary to address and reduce the 303(d) pollutants to the MEP.

If a co-permittee or DEQ identifies that stormwater discharges from the MS4 continue to cause or contribute to water quality degradation based on the updated evaluation required by this condition, the co-permittees must review existing BMPs or identify new BMPs effective in reducing the discharge of the identified pollutants to the maximum extent practicable, and make appropriate changes to their stormwater management program and/or SWMP. This condition ensures that MS4s will consider and undertake actions to address pollutants of concern in the short term for those waterbodies that are water quality limited, as required by an adaptive management approach.

DEQ expects that many of the modifications the co-permittees make to their stormwater management programs and SWMP Documents to address the 303(d) pollutants may be similar to modifications made in response to the TMDL conditions of this permit. Where applicable, DEQ anticipates the co-permittees may be "credited" for the reductions of 303(d) pollutants for new or modified BMPs implemented between the approval date of new TMDLs and the incorporation of new TMDL pollutant reduction permit requirements if the co-permittees identify a 303(d) pollutant loading baseline and complete a pollutant load reduction estimate representing the new or modified BMPs that have been implemented. In this instance, the TMDL benchmarks established in the following permit cycle will reflect the reductions made in previous years.

6.3 Condition D.3 – Total Maximum Daily Loads

A Total Maximum Daily Load is used to calculate the amount of pollutant that a waterbody can receive and still meet the applicable water quality standard. This is referred to as the "loading" or "assimilative capacity" of the waterbody. The TMDL pollutant load includes point sources, non-point sources, background sources, and a margin of safety.

Wasteload allocations are portions of the TMDL pollutant load that are allocated to point sources including municipal stormwater discharges. Federal regulations require qualified municipalities, such as cities, counties, and special districts, to obtain NPDES permit coverage for their stormwater discharges. The NPDES MS4 permits serve as the mechanism to address TMDL WLAs for municipal stormwater.

DEQ has determined that implementation of the permit conditions, BMPs identified in the SWMP Document, and the adaptive management process will meet TMDL WLAs for municipal stormwater. Co-permittees will likely need to begin a comprehensive program evaluation to address specific pollutants or pollutant sources

identified in applicable TMDLs and develop appropriate revisions to the stormwater management programs several years in advance of permit expiration.

As with the previous iteration of the permit, DEQ has determined that permit conditions with both numeric and narrative criteria continue to be the appropriate approach for addressing TMDL WLAs in the MS4 permits at this time.

This permit condition also applies to receiving waters to which a jurisdiction discharges where TMDLs have been approved by USEPA at the time of permit issuance, or within three years of the date of issuance of this permit. If a new or modified TMDL is approved after the beginning of the fourth year of this permit cycle, the subsequent permit will include specific requirements to address the TMDL WLAs. In addition, it is important to note that TMDLs currently are issued as Department orders. Should DEQ determine that other implementation requirements or time frames are appropriate and incorporated into the TMDL, this permit may be subsequently re-opened during the permit cycle.

Applicable TMDLs include those developed for the Willamette River Basin (2006), including the Lower Willamette River, Clackamas River and Tualatin River subbasins (2012), Springbrook Creek, and Oswego Lake, and the Sandy Basin (2005) as well as the Willamette River Mercury TMDL (2019), which is addressed individually in this permit condition. The pollutants identified with a wasteload allocation for the co-permittees are mercury, total Phosphorous, toxics (with TSS as a surrogate), legacy pesticides (DDT/Dieldrin) and bacteria. BOD5 and TSS also require pollutant load analysis.

This permit condition also repeats the requirements from the last permit term for reporting on TMDL Pollutant Load Reduction Evaluation and TMDL Benchmarks. In the previous permit term, the co-permittees developed reasonable estimates of the number, type, pollutant load reduction, and associated cost information related to the BMPs identified by the co-permittees as part of the wasteload allocation attainment assessment (WLAAA). DEQ anticipates that this WLAAA from the previous permit term will continue to inform the co-permittees' programs in terms of choices of retrofit projects and percent of additional effective impervious area to be removed or receiving treatment by structural stormwater controls, pollutant reduction models, and GIS analysis. For this reason, DEQ did not determine that a repeat of the WLAAA exercise was necessary for this permit term. However, given known and likely changes in socio-economic, technological, and environmental factors, such an analysis may be required again in a future permit term.

The TMDL pollutant load reduction evaluation must be conducted at least once during the permit term, and submitted with the permit renewal application package. The evaluation must be based on an empirical pollutant load reduction model, water quality status and trends analysis, and other applicable and acceptable quantitative and qualitative assessment approaches. The evaluation should reasonably estimate and reflect the land use, stormwater runoff, pollutant loading, and effectiveness of stormwater control measures implemented at the time when the evaluation is conducted.

The TMDL pollutant load reduction evaluation must incorporate an estimate of the load reduction achieved through the implementation of structural stormwater control measures (e.g., vegetative filter swale, rain garden), and an estimation or consideration of non-structural BMPs (e.g., education and outreach). The pollutant reduction model used by the co-permittees to estimate pollutant load reductions must reflect generally accepted scientific modeling practices and approaches (e.g., Simple Method, Stormwater Management Model 'SWMM'). The methodology and rationale for the model must be described in the evaluation report, including any data or model limitations, data input assumptions, the estimated effectiveness of structural BMPs, and the estimation or consideration of non-structural BMPs. The co-permittees may incorporate pollutant reduction credit for any structural BMPs in this evaluation if operation and maintenance of the structural BMP is covered by their structural stormwater control operation and maintenance programs as required in Schedule A.3.e.v (Long Term

Operation & Maintenance, Post-Construction) and A.3.f (Pollution Prevention & Good Housekeeping for Municipal Operations).

The TMDL pollutant load reduction evaluation must also incorporate the results of a water quality trends analysis and summarize the relationship of this analysis and municipal stormwater discharges. The water quality trends analysis must be completed for each waterbody for which sufficient data have been collected. The waterbodies must reflect a reasonable representation of all of the waterbodies the co-permittees discharge to with applicable TMDLs, and include a consideration of the resources that are required to collect adequate monitoring data to complete a water quality statistical trends analysis.

Finally, as part of the TMDL pollutant load reduction evaluation, the co-permittees are required to provide a narrative summarizing progress towards applicable WLAs and TMDL benchmark(s). If the co-permittees estimate that TMDL WLAs are currently achieved with existing BMP implementation, a statement supporting this conclusion must be provided as well.

DEQ will evaluate the TMDL pollutant load reduction evaluation, and the conclusions therein on whether the TMDL WLAs have been achieved based on the submitted information and implementation of existing BMPs. If the TMDL WLAs are met for certain parameters, the co-permittees do not need to set pollutant load reduction benchmarks for those parameters for the next permit cycle, though the TMDL remains active and BMPs that contributed to such success should be maintained. DEQ anticipates it will notify a co-permittee within 90 days of receiving the TMDL pollutant load reduction evaluation whether DEQ concurs with the co-permittees' conclusion that the existing BMP implementation achieves the applicable TMDL WLAs.

If the TMDL pollutant load reduction evaluation demonstrates that TMDL WLAs are not met for certain parameters, the co-permittee must develop pollutant load reduction benchmarks for those parameters as part of the permit renewal submittal. The benchmarks should reflect structural and, where effectiveness information is available, non-structural controls implemented as part of the co-permittees' current stormwater management program, as well as any additional reductions expected to result from BMPs proposed for the five-year permit term.

The TMDL benchmarks are not numeric effluent limits, and DEQ expects the TMDL benchmarks to be permit-cycle (i.e., 5-year) targets used to assess progress towards meeting the WLA. DEQ anticipates the MS4 co-permittees will continue to iteratively manage their MS4 stormwater programs to reduce pollutants, and identify the TMDL benchmarks accordingly.

6.4 Condition D.4 – Definitions

The definitions provided in this permit condition provide additional clarification related to MS4- related terms, and generally reflect definitions in the Clean Water Act, Oregon Administrative Rules or based upon EPA and DEQ program language that describe municipal stormwater concepts.

7.0 Schedule F – Standard 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.

DEQ Response to Comments

NPDES Phase I MS4 Permit: Clackamas Group

Permit number: 101348
April 21, 2023

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Overview

The Public Comment Period for the proposed permit modification was from January 23, 2023 to February 27, 2023.

No public hearing was held for the proposed permit modification, and no requests were for one were received.

DEQ received comments from the Willamette Riverkeeper. The comment letter is attached. Excerpts from the letter and summaries of issues raised are below in italics, with responses following.

1. *DEQ proposed these modifications at the request of the co-permittees, which includes 8 cities, one county, and two water services entities. These co-permittees objected to the frequency of pesticide monitoring in August 2022, almost two years after this permit was issued and close to one year after this permit became effective. If the co-permittees had objections to the frequency of monitoring, they had plenty of time to object and request modifications before the permit was issued, and well before the permit became effective.*

   DEQ Response: An NPDES permittee is entitled to request a permit modification at any time, and DEQ did not determine that the permit modification request was inappropriately submitted or inappropriate to consider, in accordance with Oregon Administrative Rules, Chapter 340, Division 045. No changes were made to the permit in response to this comment.

2. *DEQ does not have strong reasoning behind the decision to modify the Clackamas Group's MS4 water quality permit. The reasoning provided to commentors is that "DEQ inadvertently assigned the co-permittees an unnecessarily high amount of pesticide monitoring by tying the pesticide monitoring to the storm event monitoring…" However, pesticide monitoring* should *take place during or right after significant storm events, as that is when the pesticides will flow into the waterways affected by this permit.* [emphasis in original text]

   DEQ Response: The original permit language in the Clackamas Group MS4 permit tied pesticide monitoring to all other stormwater monitoring, unlike the other Phase I MS4 permits issued concurrently in 2021. The Clackamas Group's permit required pesticide monitoring at exactly the same frequency, times, and locations as the other required stormwater monitoring. This requirement would have severely limited the capacity of co-permittees to work together in creating an effective study. The intent of the modification is that pesticide monitoring will still take place during or right after significant storm events, but it does not necessarily have to be tied to all of the other stormwater monitoring the co-permittees are required to perform under the Phase I MS4 permit. The separation of pesticide monitoring from the other stormwater monitoring involves a reduction of the number of pesticide monitoring sample points, but it also allows greater flexibility in study design with the goal of using the results to make changes that would have positive impacts on stormwater quality. The co-permittees have a documented history of obtaining excellent results when designing their own pesticide monitoring study, as is discussed further below. No changes were made to the permit in response to this comment.

3. *In 2016, the United States Geologic Survey found "high concentrations of commonly used insecticides in streams running through the highly urbanized portion of Clackamas County." The levels found in streams flowing through the area in during a 2013 storm were above EPA's benchmarks to protect aquatic-life. One active ingredient of insecticides, bifenthrin, attaches "tightly to sediments contained in stormwater, traveling from the areas where it was applied through storm drainage systems to streams." Even small amounts of bifenthrin affects beneficial insects which fish, birds, and other wildlife rely on for food.*

In their letter to DEQ, the co-permittees state "[r]equiring pesticide monitoring to be conducted at all stormwater monitoring locations and during each stormwater monitoring event limits the ability of co-permittees' stormwater programs to optimize resources in support of stormwater program activities with tangible water quality benefits." However, the current permit only requires most co-permittees to monitor pesticides at two sites twice per year, which is significantly less than other monitoring required in the permit. Monitoring for pesticides at once site only three times per term is irresponsible, unreasonable, and inadequate. At the very least, DEQ needs to require the co-permittees to monitor for pesticides at two sites once per year. [underlining in original]

DEQ Response: The 2016 study cited by Willamette Riverkeeper was a collaboration between the co-permittees and the USGS, conducted in part to satisfy a pesticide monitoring permit requirement from the previous iteration of the same MS4 permit (issued March 16, 2012). That pesticide monitoring requirement stated only that co-permittees must "*[c]onduct or contribute to a pesticide stormwater characterization monitoring or instream pesticide monitoring project/task*." The flexibility in the permit requirement enabled the co-permittees, in collaboration with USGS, to design an effective monitoring plan for pesticides that yielded valuable information about pesticides in the Clackamas basin. The study contributed to the still growing body of literature indicating that, as noted by Willamette Riverkeeper, "bifenthrin affects beneficial insects which fish, birds, and other wildlife rely on for food."

Enabled by flexibility in the 2012 permit, this study was the first to examine a broad range of pyrethroid insecticides and other current-use pesticides in stormwater runoff and streambed sediments in urban streams in northwest Oregon. Further, the 2016 study did not solely look at storm events, but collected sediments via samplers deployed over an eight week period, which were then collected a week after the single storm event for which samples were collected at outfalls.

This permit modification explicitly requires more monitoring events than were conducted to produce the 2016 study. It includes more clear, specific, and measurable metrics than the previous permit's pesticide monitoring requirement, while adding some measure of the flexibility and possibility for collaboration that the co-permittees made such excellent use of in 2016. This flexibility allowed the co-permittees to coordinate their monitoring on pesticides specifically. Further, the new permit language leaves open the possibility that a pesticide monitoring study may involve sediment sampling, which the original permit language may have impeded by tying pesticide monitoring directly to existing stormwater monitoring.

Following consideration of Willamette Riverkeeper's comments, DEQ agrees that additional pesticide monitoring is warranted, and has modified the permit to include additional sampling, as indicated in the table below. This adjustment represents an increase of 18 data points over the permit term relative to the proposed modification. DEQ continues to seek effective water quality monitoring in appropriate places, in the Clackamas basin and elsewhere in Oregon, outside of this MS4 permit.

2023 Clackamas Permit Modification Pesticide Monitoring Requirements (# of data points over the 2021-26 NPDES MS4 permit term)			
Jurisdiction	Number of Locations	Number of Events	Number of Pesticide Data Points
Lake Oswego	1	6	6
Milwaukie	1	6	6
Oregon City	1	6	6
West Linn	1	6	6
Wilsonville	1	6	6
Clackamas Water Environment Services (includes Clackamas County, Happy Valley and Rivergrove)	2	3	6
Oak Lodge Water Services	1	6	6
TOTAL	14	21	42

4. *Pesticides are widely used in "agriculture, homes and businesses, on lawns and gardens, along roads, in recreational areas, and on pets and livestock." The Clackamas River basin has a "large amount of urban and agricultural land…where pesticides are frequently applied." This is true for many water basins throughout Oregon. Accordingly, DEQ should be encouraging more pesticide monitoring in every permit, not reducing the Clackamas Group's pesticide monitoring requirements to fit into the minimal monitoring required in different permits.*

DEQ Response: There is no evidence to suggest pesticide use patterns in the Clackamas basin are significantly different from elsewhere in the state, and pesticide use throughout the state is known and monitored by other programs, administered by DEQ and other agencies, in addition to MS4 permit requirements. Further, the Clackamas Group co-permittees comprise an area of urban lands overlapping the bottom of other basins as well, including the Tualatin and Lower Willamette, so the Clackamas Basin must not be the sole focus. The required pesticide monitoring activities in MS4 permits are a tool for program evaluation and improvement through adaptive management, and to provide a quantitative measure of current conditions and progress towards attainment of applicable water quality standards. The primary objective of pesticide monitoring in MS4 permits is not to discover every possible exceedance of water quality criteria or EPA's aquatic life benchmarks, which would be beyond the Maximum Extent Practicable (MEP) standard.

The nature of the MEP standard in MS4 permits predicates that there is a balance to be struck between the value of monitoring versus the value of implementing long-term pollution prevention and reduction strategies. Both are needed, but the operator of an MS4 has very limited control over the uses of pesticides within its basins by homeowners, by private businesses, or by agriculture. In the time since the 2016 study, the co-permittees have refined and expanded their public outreach efforts, integrated pest management programs, and other BMPs addressing pesticides, in accordance with other MS4 permit requirements. DEQ has determined that adding flexibility in design study for a permittee group with a demonstrated history of excellent results is valuable and worthwhile as a permit modification. No changes were made to the permit in response to this comment.