

FACT SHEET

for the

PHASE I, WESTERN WASHINGTON PHASE II, AND EASTERN WASHINGTON PHASE II MUNICIPAL STORMWATER PERMITS

National Pollutant Discharge Elimination System and
State Waste Discharge General Permit
For discharges from
Small, Medium, and Large Municipal Separate Storm Sewer Systems
In Washington State

August 15, 2018

State of Washington
Department Of Ecology
Olympia, Washington 98504-7600

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1.0 Introduction

This Fact Sheet accompanies the final draft National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge Permits for Discharges from (Large, Medium, and Small) Municipal Separate Storm Sewers for Western and Eastern Washington (the Phase I, Western Washington, and Eastern Washington Phase II Permits). The Fact Sheet serves as the documentation of the legal, technical, and administrative decisions Ecology has made in the process of reissuing the Permits.

On August 1, 2012, Washington Department of Ecology (Ecology) issued the (current 2013/2014) Municipal Stormwater Permits. The table below provides the effective, expiration, and modification dates associated with each Permit.

Table 1: Important dates associated with each Municipal Stormwater Permit

	<i>Effective Date</i>	<i>Expiration Date</i>	<i>Modification Date</i>
<i>Phase I Permit</i>	August 1, 2013	July 31, 2018	January 16, 2015 August 16, 2016
<i>Western WA Phase II Permit</i>	August 1, 2013	July 31, 2018	January 16, 2015
<i>Eastern WA Phase II Permit</i>	August 1, 2014	July 31, 2019	

While the Phase I and Western Washington Phase II Permits were due to expire on August 1, 2018, Ecology administratively extended the Permits for one year. Ecology based this decision, in part, on the following considerations:

- The extension allowed the consideration of information from ongoing research on effectiveness of stormwater management actions and the review of submittals that are due late in the current Permit cycle.
- The extension allowed for more time to engage with the public and stakeholders during the process of Permit development.
- Extending the Permit cycle allows Ecology to reissue the Western and Eastern Municipal Stormwater Permits at the same time, ensuring an inclusive process for the whole state.

For context regarding the last bullet - Ecology issued (2) one-year, (1) two-year, and (3) five-year Permits in 2012. As required by RCW 90.48.260 through 2011 legislation, Ecology issued two Western Washington Phase II Permits by July 31, 2012. RCW 90.48.260 directed:

(1) By July 31, 2012, the department shall:

- (a) Reissue without modification and for a term of one year any national pollutant discharge elimination system municipal storm water general permit first issued on January 17, 2007; and

- (b) Issue an updated national pollutant discharge elimination system municipal storm water general permit for any permit first issued on January 17, 2007. An updated permit issued under this subsection shall become effective beginning August 1, 2013.”

(2) By July 31, 2012, the department shall:

- (a) Reissue without modification and for a term of two years any national pollutant discharge elimination system municipal stormwater general permit applicable to eastern Washington municipalities first issued on January 17, 2007; and
- (b) Issue an updated national pollutant discharge elimination system municipal stormwater general permit for any permit first issued on January 17, 2007, applicable to eastern Washington municipalities. An updated permit issued under this subsection becomes effective August 1, 2014.

While not required to do so, Ecology followed a similar two-permit process for the Phase I Permit in order to issue both Permits in western Washington at the same time. The Western and Eastern Washington Phase II Permits’ effective date for the five-year Permits were offset by a year, thereby creating staggered Permit expiration dates for western and eastern Washington.

As required by paragraph 402(p)(3) of the Clean Water Act, discharges covered under these Permits must effectively prohibit non-stormwater discharges into municipal separate storm sewer systems (MS4) that discharge to surface waters and must apply controls to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP). As authorized by RCW 90.48.030 and RCW 90.48.162, Ecology also takes action through these Permits to control impacts of stormwater discharges to all waters of Washington State, including ground waters, unless the discharges are authorized by another regulatory program.

Discharges from agricultural runoff, irrigation return flows, process and non-process wastewaters from industrial activities, and stormwater runoff from areas served by combined sewer systems are not regulated directly by these Permits. These types of discharges may be regulated by local or other state requirements if they discharge to MS4s. These Permits authorize the MS4 to discharge stormwater that comes from construction sites or industrial activities under certain conditions.

This Fact Sheet addresses the revised and updated Phase I, Western and Eastern Washington Phase II Permits. You may download copies of the draft Permit documents at:

<https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Municipal-stormwater-permit-reissuance>.

1.1 Municipal Stormwater General Permits in Washington State

Ecology issued the first Phase I Municipal Stormwater Permits in 1995 and reissued a general permit in 2007 and 2013 to cover the cities of Seattle and Tacoma, and Snohomish, King, Pierce, and Clark counties. The Phase I federal rule established the list of Phase I jurisdictions, and no new jurisdictions will be added to this list.

EPA issued the federal rule for Phase II of the stormwater permit program in 1999. In 2007, Ecology issued the first Phase II Municipal Stormwater General Permits. Ecology reissued the Phase II Municipal Stormwater Permit for Western Washington and Eastern Washington in 2013 and 2014, respectively.

A number of Phase II Permittees in western Washington are located in counties regulated by the Phase I Permit, or are adjacent to the cities of Seattle and Tacoma. Phase I and Phase II Permittees share basins, have interconnected conveyance systems, and discharge into many of the same water bodies. Phase I and Phase II communities cooperated in a number of permit programs and grant projects, and worked together through coordination groups.

In eastern Washington there are no Phase I Permittees, and thus no interconnected stormwater systems of Phase I and Phase II Permittees. A number of eastern and southwestern Washington Permittees, both Phase I and Phase II, discharge into the Columbia River. Permittees that discharge to tributaries of the Columbia coordinate within those smaller basins. Eastern Washington Permittees coordinate informally with Permittees in western Washington – and vice versa. During the current (2013/2014) Permit terms, Ecology funded several partnerships of eastern and western Washington Permittees to complete grant projects that benefit Permittees statewide.

Small MS4s may also be public stormwater systems similar to those in municipalities, such as systems at colleges and universities, state institutions, and special purpose districts. Ecology uses the term Secondary Permittees to refer to these entities. Special purposes districts may include ports, diking and drainage districts, school districts, park districts, irrigation districts, and state institutions. The MS4s of Secondary Permittees are publicly owned or operated and serve more than 1,000 people on an average day. For ports, schools, colleges, and universities the population figures include commuters as well as residents.

Wherever appropriate, Ecology coordinated the requirements of the Phase II Permits with the requirements of the Phase I Permit. All Permits include similar approaches to compliance with standards, TMDL implementation, and the use of a regional stormwater manual. Programs for illicit discharge detection and elimination and controlling stormwater from construction sites are also similar. In areas where conveyance systems are interconnected or discharges go to the same water body, successful implementation of stormwater management programs requires coordination between local jurisdictions. Ecology has established expectations for regional coordination in monitoring efforts and in proposed requirements for watershed-based stormwater planning for western Washington Permittees. Ecology expects to bring Phase I and Western Washington Phase II requirements for municipal stormwater management closer together in future permit cycles and has made progress toward that end in the current proposal. The proposed Western Washington Phase II Permit separates the mapping section from the IDDE section and includes a Source Control program like the Phase I Permit. The private facility operation and maintenance requirements were moved to the Phase II Operations and Maintenance section to align with the Phase I Permit structure.

2.0 Public Involvement Opportunities

2.1 Public Comment Period

Ecology invites public comments on the proposed draft Permits and Fact Sheet from August 15 until **11:59 PM on Wednesday, November 14, 2018**. Ecology welcomes all comments that address the Permit requirements in these formal draft documents.

Ecology will issue the final Permits after it considers all public comments and makes final changes to the draft Permits. Ecology will publish a *Response to Comments* document with the final Permits to address comments submitted during the public comment period.

2.2 Information to Include with Each Comment

In order for Ecology to adequately address comments, please include the following information with each comment:

- The Permit(s) subject to your comment.
- The specific Permit language used in the requirement subject to your comment. Include the page number(s), line numbers, and, where indicated, section reference (i.e., S8.D.2.b).
- A brief, concise comment including the basis for the comment, and in particular the legal, technical, administrative, or other basis for the concern.
- Suggested Permit language or a conceptual alternative to address your concern.

2.3 How to Submit a Comment

2.3.1 Written Permit Comments

Ecology will accept comments until 11:59 PM on Wednesday, November 14, 2018.

Send written comments regarding the Permits to Ecology by one of the methods below:

- **Preferred:** submit your comments electronically at:
<http://ws.ecology.commentinput.com/?id=JWY6h>
- Send by mail to:
Abbey Stockwell
WA Department of Ecology
Water Quality Program
PO Box 47696
Olympia, WA 98504-7696

2.3.2 Comments for the Stormwater Management Manual for Western Washington (SWMMWW)

Send written comments regarding the SWMMWW to Ecology electronically at:

- <http://ws.ecology.commentinput.com/?id=YFRKA>

2.3.3 Oral Comments

Submit oral comments by attending and testifying at the public hearings. (See Section 2.4 *Public Hearing and Workshop Schedule* for more information).

2.4 Public Hearing and Workshop Schedule

The public hearings will provide an opportunity for the public to give formal comments on the draft Permit. Each hearing will immediately follow a short workshop with a question and answer session.

Before each public hearing, Ecology will host a general public workshop on the proposed changes in the draft Permits during the public comment period. In western Washington, the workshop will also include information regarding the draft SWMMWW.

The workshops provide Ecology an opportunity to explain the proposed changes to the Permits, and to answer questions. Ecology will not accept formal oral testimony or comments on the draft Permits or Fact Sheet during the public workshops, but will during the public hearings. Each workshop will address all the proposed Permit changes.

2.4.1 Eastern Washington Phase II workshops and hearings

Thursday, September 27, 2018, 9:30 AM

Moses Lake Civic Center
Council Chambers Room
401 S. Balsam
Moses Lake, WA 98837

Thursday, November 1, 2018, 10 AM

Webinar – [Register for the Webinar](#)

2.4.2 Phase I and Western Washington Phase II workshops and hearings

Tuesday, October 2, 2018, 10 AM

Skagit Transit Station
105 E. Kincaid
Mt. Vernon, WA 98773

Wednesday, October 10, 2018, 10 AM

South Seattle College – Georgetown Campus
Gene J. Colin Education Hall – Building C, Room C122
6737 Corson Avenue South
Seattle, WA 98108
Parking is \$3.00/vehicle at this facility

Tuesday, October 30, 2018, 10 AM

DuPont City Hall
Council Chambers Room

1700 Civic Drive
DuPont, WA 98327

Tuesday, November 6, 2018, 1:30 PM
Webinar – [Register for the Webinar](#)

Wednesday, November 7, 2018, 10 AM
WA State School for the Blind
Fries Auditorium
2214 East 13th St
Vancouver, WA 98661

Please direct requests for printed copies of the Draft Permits and Fact Sheet to Dena Jaskar, at dena.jaskar@ecy.wa.gov or 360-407-6401.

Please direct questions about the public hearings/workshops, Notice of Intent, the Phase II Draft Permits, or Fact Sheet to Abbey Stockwell at abbey.stockwell@ecy.wa.gov or 360-407-7221.

Please direct questions about the Phase I Draft Permits, or Fact Sheet to Emma Trehwitt at emma.trehwitt@ecy.wa.gov or 360-407-7468.

2.5 Issuance of the Final Permits

Ecology will issue the final Permits after reviewing and considering all public comments. Ecology expects to issue the final Permits in July 2019. Ecology will send a copy of the Notice of Issuance to all persons who submitted written comment or gave public testimony at the public hearings.

Ecology will append the final Fact Sheet for the Permits with a summary of and response to comments. Parties submitting comments will receive a notice on how to obtain copies of the final Permits and Ecology's response to comments.

2.6 Public Involvement Opportunities Prior to August 1, 2018

Ecology conducted a number of public involvement processes in preparation for reissuance of the Municipal Stormwater General Permits.

2.6.1 “Ad-hoc” stakeholder early input for Western Washington

In 2016, Permittees, NGOs, and other interested parties organized a series of committee meetings with the purpose of developing recommendations for Permit revisions prior to Ecology starting the Permit writing process. The committees formed based on participants' interest in a topic related to Permit requirements (e.g. IDDE, mapping, source control, etc.). The result was a series of thoughtful recommendations for Permit language improvements or clarifications. These recommendation support some of the proposed changes prepared for the preliminary drafts and the final drafts Permits.

2.6.2 Listening Sessions

In February and March of 2018, Ecology hosted listening sessions in western Washington, and in April 2018 in eastern Washington, to announce the reissuance schedule and gather input for preparing to reissue the 2019 Permits. Ecology also presented the same information through an internet conferencing system, or webinar. More than 200 people attended the listening sessions statewide. We used the early input we received as the foundation to generate further discussion and receive broader input. Ecology shared their proposed priorities for revisions to the Permits. Listening sessions were held:

- February 23, 2017 -Lynnwood
- March 2, 2017 - Lacey Community Center (also held via webinar for western WA)
- March 14, 2017 - Vancouver
- April 5, 2018 - Moses Lake
- April 11, 2018 - Webinar for eastern WA

During the listening sessions, Ecology accepted email and online comments. Ecology posted the listening session notes on its website and considered these comments as it developed the Permit revisions. (See listening session materials at <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Municipal-stormwater-permit-reissuance>)

2.6.3 Fall 2017 - Spring 2018 Western Washington Informal Public Comment Period

Ecology provided an additional public review opportunity for the Permit reissuance process in the fall of 2017. From October 3, 2017 to February 2, 2018 Ecology invited informal public comment on preliminary draft Permit language for the following topics:

- Phase I
 - S5.C.7 Structural Stormwater Control
- Phase I & Phase II
 - S5.C.10 / S5.C.2 Education and Outreach
 - S5.C.9/S5.C.5 IDDE tracking and reporting
 - S5.C.2/S5.C.4 Mapping
 - S5.C.5/S5.C.6 Controlling Runoff – site and subdivision scale
 - S8. Monitoring and Assessment
 - Long-term municipal stormwater planning concept paper
- Phase II
 - S5.C.8 Source Control Program for Existing Development

In addition, Ecology also accepted comments on proposed preliminary changes to the Stormwater Management Manual for Western Washington (SWMMWW). The [preliminary draft package of the 2019 SWMMWW](#) included:

- Full table of contents
- All of Volume II
- Select source control BMPs from Volume IV

The preliminary draft Permit language included explanatory notes documenting Ecology’s rationale for the proposed draft requirements.

The preliminary draft documents generated a broad response. Ecology received comments from over 30 individuals or entities via email, letters, and an online comment form. This extra step in the public process provided valuable input from a wide range of interested parties. Ecology considered those comments as it developed these proposed draft Permit requirements. The preliminary draft language, explanatory notes, associated documents, and all the comments are available on Ecology’s website at: <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Municipal-stormwater-permit-reissuance>

3.0 Background

3.1 The Stormwater Problem

Stormwater runoff is a leading pollution threat to lakes, rivers, streams and marine water bodies in urbanized areas of Washington State. The stormwater problem was well defined decades ago, and we continue to learn about both the impacts of stormwater on receiving waters and biota across the State, as well as the effectiveness of stormwater management approaches to prevent, reduce, and correct these impacts.

Impacts from stormwater vary geographically due to differences in local land use conditions, hydrologic conditions, the type and condition of the stormwater infrastructure, and the type of receiving water. In typical undeveloped conditions, less than about ten percent of precipitation runs off the land as surface flow. In urban areas, the large amount of impervious surfaces interrupts infiltration and groundwater recharge, concentrates surface flows, and increases the frequency and quantity of runoff sent to receiving waters. As a result, more than 40% of precipitation exits urban areas rapidly through stormwater sewer systems¹. This causes hydrologic impacts such as scoured streambed channels, excessive sediment transport, loss of habitat, and increased flooding.

Many pollution sources from common land use activities contaminate urban stormwater. Streams and storm outfalls monitoring studies have shown elevated concentrations of metals, nutrients, pesticides and organic compounds in relation to urban development. Contaminants in building materials, in illicit discharges and spills, from vehicular traffic, and atmospheric deposition are picked up by stormwater runoff and make their way to receiving waters if left untreated. Most of

these pollution sources are not under the direct control of the Permittees that own or operate municipal storm sewer systems.

The following is a list of typical and potential impacts caused by stormwater discharges:

- **Human Health:** Untreated stormwater contains bacteria, trash, excessive nutrients, toxic metals, and harmful organic compounds. Untreated stormwater is not safe for people to drink and is not recommended for swimming or contact recreation.
- **Drinking Water:** In some areas of Washington, notably Spokane County and parts of Pierce and Clark Counties, gravelly soils allow rapid infiltration of stormwater. Untreated stormwater discharging to the ground could contaminate aquifers that are used for drinking water.
- **Shellfish:** Washington State’s multimillion dollar shellfish industry is increasingly threatened by closures due to stormwater contamination.
- **Degraded Water Bodies:** In urban and urbanizing areas across Washington State, residential, commercial, and industrial land development continues to change land cover and drastically alter stream channels. Unmanaged stormwater from urban areas has severely degraded beneficial uses of Washington’s waters.
 - A recent study described the “urban stream syndrome”² where development predictably and consistently results in degraded conditions of instream water quality and biota.
 - Other recent studies suggest that road density and traffic volumes are main stressors to benthos community health in urban streams indicating traffic associated pollutants in stormwater degraded receiving water bodies³.
 - Studies in the 1990s found degraded stream benthos communities in watersheds with as little as 10% impervious surface⁴. Studies since then have found a continuum, with impacts detectable at lower levels of impervious surfaces.
 - Unmanaged stormwater has likely permanently destroyed stream habitat in some urban areas of Puget Sound. There are no known instances of recovering “poor” to “fair” or even “fair” to “poor” condition of stream benthos.
 - Recent modeling exercises have demonstrated that current site-by-site approaches to stormwater management approaches are insufficient to prevent continued degradation of receiving water quality (see section 3.2.1 below on “Phase I Counties’ Watershed Modeling and Planning”).
 - Elevated concentrations of pollutants in small Puget lowland streams in 2015 were significantly correlated with indicators of urbanization including impervious surfaces and watershed canopy⁵. This same study found significant differences between conditions of water quality and biota in streams inside and outside Urban Growth Areas (UGAs).
 - Bacteria is the most common cause of stormwater-related water quality impairment listings. Puget Sound nearshore monitoring programs that focus on

monitoring storm events or source identification tend to have higher bacteria levels than ambient programs⁶.

- There are significantly more contaminants Puget Sound nearshore sediments in the incorporated UGAs than the unincorporated UGAs, and sites identified as depositional areas contained more chemicals than the high-energy drift cells (left, right, or divergent)⁷.
- Contaminant levels in mussels along Puget Sound UGA shorelines were correlated with impervious surfaces in the small watersheds adjacent to the shoreline⁸.
- The common urban use pesticide bifenthrin was found in sediment samples from about ten percent of Puget lowland stream sites monitored in 2015⁹.
- Numerous 303(d) listed water bodies across the State have been assigned stormwater waste load allocations.
- **Salmon Habitat:** Urban stormwater degrades salmon habitat in streams through effects on hydrologic flows and toxicity. Paved surfaces cause greater and more frequent winter stormwater flows that erode stream channels and damage spawning beds. Toxic chemicals in stormwater harm benthic insects, salmon embryos, immature fish, and adults returning to spawn. Several studies have identified concerns. Two important examples:
 - Surveys of spawning adult Coho salmon in Seattle in the early 2000s found that very high percentages of adult females (60-100 percent) were dying before they could spawn¹⁰. Scientists soon found that stormwater pollution is likely involved¹¹ and the problem is widespread throughout urban streams in Puget Sound. Untreated highway runoff is lethal, leading to 100% toxic response or death of adult salmon within 24 hours¹². Active scientific investigation continues, and has made progress toward identifying the precise causes of these acute die-offs. Scientists are most recently honing in on chemicals associated with some tires¹³.
 - Ecology and Pierce County conducted *in situ* trout toxicity testing studies in four urban streams in 2008. Pierce County found no significant toxicity¹⁴. However, Ecology identified the following chemical stressors that were capable of causing adverse effects that were detected on the native trout embryos and pre-swim-up fry: copper, lead, nickel, zinc, polycyclic aromatic hydrocarbons, and the agricultural fungicide Captan¹⁵.
- **Pollution:** Urban stormwater is known to contain a fairly consistent suite of pollutants from common land use activities.

An evaluation of stormwater monitoring data from the National Stormwater Quality Database (NSQD)¹⁶ compared the results for a range of pollutants in urban runoff from areas of different land uses. The NSQD contains a large data set from a representative number of Municipal Stormwater Permit holders. Much of the data may be used to characterize stormwater produced from specific land uses, such as industrial, commercial, low density residential, high density residential, and undeveloped open space. Preliminary statistical analysis of the NSQD found significant differences among land use categories for all pollutants, as shown in Table 2.

In the 2007 Permit, Phase I cities and counties and the ports of Tacoma and Seattle were required to conduct stormwater discharge characterization monitoring to improve our understanding of the amounts of a wider range of pollutants found in stormwater from various land uses. That monitoring and the findings are presented in section 3.2.8 below on “Phase I Permittees’ Stormwater Discharge Characterization Monitoring.”

Table 2: Event Mean Concentrations of Pollutants Discharged via Stormwater Compiled from the National Stormwater Quality Database, Version 1.0

Pollutant	Units	Land Use					Overall
		Resident-ial	Commer-ial	Industrial	Freeways	Open Space	
Ammonia	mg/L	0.31	0.5	0.5	1.07	0.3	0.44
Biochemical Oxygen Demand	mg/L	9	11.9	9	8	4.2	8.6
Cadmium, Total	ug/L	0.5	0.9	2	1	0.5	1
Cadmium, Filtered	ug/L	ND	0.3	0.6	0.68	ND	0.5
Chemical Oxygen Demand	mg/L	55	63	60	100	21	53
Copper, Total	ug/L	12	17	22	35	5.3	16
Copper, Filtered	ug/L	7	7.6	8	10.9	ND	8
Fecal Coliform	MPN/100 mL	7,750	4,500	2,500	1,700	3,100	5,081
Lead, Total	ug/L	12	18	25	25	5	16
Lead, Filtered	ug/L	3	5	5	1.8	ND	3
Nickel, Total	ug/L	5.4	7	16	9	ND	8
Nickel, Filtered	ug/L	2	3	5	4	ND	4
Nitrogen, NO ₂ +NO ₃	mg/L	0.6	0.6	0.7	0.3	0.6	0.6
Nitrogen , Total Kjeldahl	mg/L	1.4	1.6	1.4	2	0.6	1.4

Pollutant	Units	Land Use					Overall
		Resident-ial	Commer-cial	Industrial	Freeways	Open Space	
Phosphorus, Total	mg/L	0.3	0.22	0.26	0.25	0.25	0.27
Phosphorus, Filtered	mg/L	0.17	0.11	0.11	0.2	0.08	0.12
Suspended Solids, Total	mg/L	48	43	77	99	51	58
Zinc, Total	ug/L	73	150	210	200	39	116
Zinc, Filtered	ug/L	33	59	112	51	ND	52

ND = Not detected, or insufficient data to determine a value
 mg/L = Milligrams per liter
 ug/L = Micrograms per liter
 MPN = Most probable number

3.2 Previous and Ongoing Regional Efforts

Ecology and Permittees are investing in efforts to inform and improve our collective understanding of stormwater impacts and Permittees’ implementation of the stormwater management programs and practices required in the Permits. The goals are to better understand the sources and pathways of pollutants, to measure our progress over time, and to continue to identify and target effective management approaches. In recent years, several regional efforts have significantly contributed to an understanding of stormwater impacts and management practices on the beneficial uses of Washington waters.

3.2.1 Phase I Counties’ Watershed Modeling and Planning

The 2013 Permit required detailed modeling and planning by the four Phase I counties in western Washington. The purpose of the Permit requirement was to determine what stormwater management and other actions are necessary to meet water quality standards in developing areas. The counties invested considerable staff time and resources into this effort and learned some lessons that can be broadly applied.^{17,18,19,20}

Each of the counties selected a medium sized (10-50 square miles) watershed located in an Urban Growth Area (UGA) designated pursuant to the State’s Growth Management Act (GMA) and therefore known to be under pressure for development in the near future. The watersheds have unique characteristics, but all are already partially urbanized.

The counties created models to test a suite of supplemental strategies in various scenarios to see if water quality standards were, or could be, met. The modeling showed that current and future

conditions in these watersheds are impacted in various ways, and that actions beyond site-by-site stormwater management will be needed to prevent degradation of the receiving waters and meet water quality standards. The models in all of the watersheds projected that riparian restoration and large amounts of additional stormwater detention are needed to improve conditions.

The anticipated costs to recover from these impairments is hundreds of thousands of dollars per acre of watershed. The costs per acre for these basins are somewhat lower for less developed basins, but they are still well beyond what might be affordable with current funding programs and approaches.

An important strategy that one of the four counties highlighted in their scenarios was changing the land use designation or zoning established as part of the growth management process. King County demonstrated that such changes will help protect water quality while substantially lowering the high capital project costs identified by the models. Ecology encourages stormwater managers to seriously consider pursuing this type of strategy in future planning to accommodate projected population increases.

3.2.2 Puget Sound Ecosystem Monitoring Program Stormwater Work Group (SWG)

The SWG developed recommendations for a comprehensive stormwater monitoring strategy focused on Puget Sound²¹. To develop the strategy, the SWG convened many of the region's stormwater experts to review previous work and evaluate the direct and indirect effects of stormwater on the Puget Sound ecosystem. The SWG also evaluated the various pathways by which those effects are transmitted and to develop the monitoring approach ultimately included in the 2013 Phase I and Western Washington Phase II Permits. In the process of reaching consensus from a broad range of expertise and technical backgrounds, the work group members formulated a conceptual model of the factors driving the stormwater-related impairment of water quality and habitat in the region. Figure 1 shows the types of stressors that should be considered, the pathways by which those stressors are transmitted, and how the outcomes of our management efforts should be assessed, using a Driver-Pressure-State Impact-Response (DPSIR) conceptual model approach²².

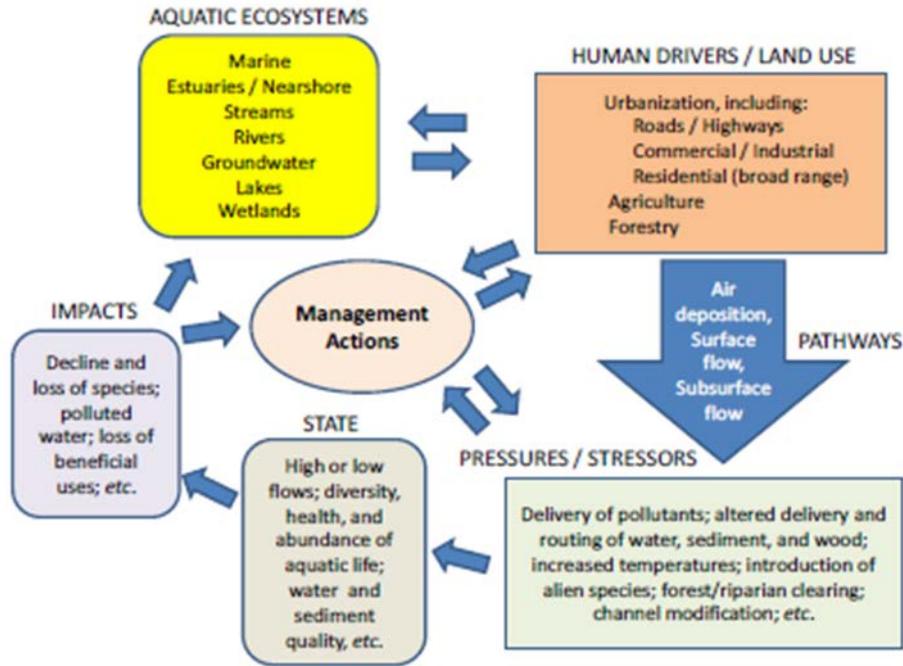


Figure 1: Stormwater Stressors and Pathways

The conceptual model identifies land use as the driver for impacts to aquatic ecosystems. Ecology is applying the DPSIR approach illustrated in this conceptual model to organize stormwater-related ecosystem recovery efforts and use monitoring information for adaptive management.

The SWG continues to discuss recent scientific finding and recommend priorities for the regional stormwater monitoring program.

3.2.3 Stormwater Action Monitoring (SAM)

SAM is the regional stormwater monitoring program which is primarily funded by Phase I and Phase II permittees in western Washington in the 2013 Permits through Special Condition S8. Monitoring and Assessment requirements. SAM was launched in 2014 and is implementing the SWG’s strategy and recommendations. By the summer of 2018, 16 effectiveness, three source identification, and five receiving water studies were in various stages of completion, and two new studies were identified for contracting to begin before the end of the Permit extension year.

3.2.4 How has SAM resulted in changes to the Phase I and Phase II Western Washington Permits?

While findings and recommendations of SAM studies initiated during the 2013 permit were just beginning to come in as Ecology began the 2019 Permit reissuance process, some SAM results are already closely connected to various Permit requirements and compliance oversight.

- Ecology permit writers evaluated the “Business inspection source control”²³ SAM effectiveness study findings and recommendations in writing the 2019 Permit S8.C.5 IDDE program requirements for Phase II Permittees.
- Ecology engineers updated language in BMP T7.30 in the *Stormwater Management Manual for Western Washington* (SWMMWW) to emphasize proper design and sizing for curb cut inlets to match expected site conditions after Ecology reviewed the findings of the “Stormwater retrofit monitoring in the Echo Lake drainage basin”²⁴ SAM effectiveness study.
- The “Illicit Discharge Detection and Elimination Data (IDDE) evaluation for Western Washington”²⁵ SAM source identification study revealed that many Permittees were not keeping adequate records. These findings helped Ecology’s permit managers provide technical assistance to improve record keeping practices. Ecology permit writers also clarified Permittees’ IDDE reporting requirements to improve consistency and inform regional understanding and approaches for the most common IDDE problems.
- Ecology management supports the new comprehensive stormwater planning requirements in light of our understanding that the current Permit provisions are not sufficient to protect and restore water quality. Ecology looks to the SAM regional status and trends monitoring studies to assess whether the Permittees’ SWMPs and additional strategic management actions can achieve the goals of minimizing and reversing harm caused by stormwater.
- Ecology’s engineers kept the 60/40 mix as the default bioretention soil medium due in part to the “Bioretention reduction of toxicity to Coho salmon from urban stormwater”²⁶ SAM study that confirmed prevention of acute toxicity to Coho salmon. Performance of the 60/40 mix over time and lower phosphorus-exporting alternative mixtures are important anticipated results from ongoing SAM effectiveness studies.

3.2.5 Lower Columbia Urban Streams Status and Trends Monitoring

Led by the City of Longview, the Lower Columbia Fish Recovery Board, and the Pacific Northwest Aquatic Monitoring Partnership, stakeholders in the Lower Columbia Region developed an urban streams monitoring program that will be implemented in this 2019 Permit cycle.²⁷ The purpose of the monitoring is to answer the policy question: “Are regional conditions in receiving water quality and biota improving in concert with broad implementation of required stormwater management practices?”

3.2.6 Evaluation of Eastern Washington Receiving Water Data

In recognition of the differing hydrogeologic settings in eastern Washington, Ecology asked the U.S. Geological Survey to evaluate existing information about stormwater impacts to receiving waters in eastern Washington²⁸. The review concluded that the receiving water monitoring approaches in Puget Sound and the Lower Columbia are not suitable for application in eastern Washington, and recommended instead focusing on effectiveness studies.

3.2.7 Eastern Washington Stormwater Management Effectiveness Studies

During the 2013 Permit, stormwater managers in eastern Washington engaged in a process to identify and prioritize effectiveness study questions and topics. By the summer of 2018, a total of

eight studies were underway, each led by a Permittee. Results of these studies will be shared during the 2019 Permit cycle.

3.2.8 Toxic Loading Studies for Puget Sound

In 2010, Ecology and others²⁹ estimated toxic chemical loadings from surface runoff in the Puget Sound Basin. This was Phase 3 of a series of studies that began in 2006 and included a multi-partner steering committee of federal, state, and local government agencies, consultants, and reviewers.

As part of Phase 3 of its toxics loading study, Ecology collected water quality samples of surface runoff during eight storm or baseflow events from 16 distinct sub-basins, each representative of one of four land covers (Commercial/Industrial, Residential, Agricultural, and undeveloped Forest/Field/Other). Analyses of the samples employed much lower detection limits than typically used to produce pollutant concentration and loading data. No other study in Washington has quantified pollutant loads for so many constituents at this scale. Although this data represents surface runoff in the sampled sub-basins and is not directly representative of regulated stormwater discharges, some of the findings are generally in agreement with those from the 2005 analysis of the National Stormwater Quality Database. The pollutant loading estimates were based on data collected from small streams, where pollutant concentrations had likely been reduced by attenuation, degradation, deposition, and/or dilution. Therefore, the loading estimates might have been greater if they had been based on outfalls from stormwater conveyance systems.

The study found the following:

- Surface water runoff, particularly from commercial and industrial areas, did not meet water quality standards or human health criteria for the following parameters: dissolved copper, lead, and zinc; total mercury; total polychlorinated biphenyls (PCBs); several carcinogenic polycyclic aromatic hydrocarbons (PAHs); and DDT-related compounds.
- Organic pollutants and metals were generally detected more frequently and at greater concentrations in surface runoff from commercial and industrial areas than from other land uses. Runoff from residential and agricultural land had higher frequency of detection for most parameters than runoff from undeveloped/forested land, but generally less than runoff from commercial land. Greater detection frequencies occurred during storm events than during baseflow across all land cover types.
- During storm events, surface runoff from areas of forested and commercial land covers were chemically distinct from each other and from the other land cover types. Forested lands produced runoff with smaller concentrations of nitrate+nitrite nitrogen, total phosphorus, and total arsenic, copper, mercury, and suspended solids. Commercial land areas produced runoff with relatively greater concentrations of total lead, zinc, PBDEs, and PCBs.
- At the local scale, pollutant loading rates via small streams were substantially greater during storm events compared to baseflow. The rain-induced surface runoff during storm events caused higher streamflow rates. These higher flow rates coupled with increased pollutant concentrations to produce substantially greater loading rates for storm events

than for baseflow. This result suggested that the greatest opportunity for transport of toxic chemicals occurs during storm events.

3.2.9 Phase I Permittees’ Stormwater Discharge Characterization Monitoring

In 2015, Ecology³⁰ summarized monitoring results from Phase I Municipal Stormwater Permittees, including Clark, King, Pierce, and Snohomish Counties, the Cities of Seattle and Tacoma, and the Ports of Seattle and Tacoma, and collected chemical monitoring data representing municipal stormwater discharge quality during 2007 Phase I Permit. Tacoma and Clark County continued this monitoring in the 2013 Permit.

The 2007 Permit required each city and county Permittee to conduct stormwater characterization monitoring at three (or, for each of the two Ports, one) municipal stormwater basins representing four land uses (industrial, commercial, low density residential, and high density residential). This monitoring represents flow-weighted composite samples from 11 storm events each water year, annual sediment sampling, and one-time toxicity testing of seasonal first-flush discharges.

No other stormwater monitoring effort in Washington – or in the nation – has generated comparable water quality data on municipal stormwater discharges for such a large parameter suite from these four typical land uses.

Generally, stormwater discharge concentrations were consistently lower than data in the National Stormwater Quality Dataset,³¹ much lower the National Urban Runoff Program data,³² but higher than the levels reported in the Toxics Loading Study for Puget Sound. These results were not surprising, the two national datasets likely contain data from denser cities and the toxics loading study sampled receiving waters, not stormwater discharges, during storm events. By in large, Ecology concluded that “typical” stormwater chemistry for a given land use remains an elusive definition. This compilation study also found the following:

- Approximately 600 storm events were sampled by the eight Phase I Permittees and Co-permittees. Hydrologically, the data set compared well to the precipitation record for the Puget Sound region and the samples covered 80-90% of the storm hydrograph in most cases.
- Efforts to assess toxicity of stormwater on trout embryos per Permit requirements were met with considerable logistical and bioassay complexity. Most bioassays had no adverse effects, and those with toxicity effects, samples from larger commercial areas, indicated the likely toxicants were zinc and copper.
- Fecal coliforms were a fairly ubiquitous contaminant, but were found at significantly lower concentrations from low density residential land uses. Seasonally, fecal counts were significantly higher in the dry season compared to the wet season.
- For nutrients, there does not appear to be any significant difference between land uses. Dissolved nutrients were higher from residential areas, but lower than the concentrations in the Toxics Loading Study, which suggests that piped stormwater systems in Phase I areas aren’t a major source for dissolved nutrient loads to Puget Sound.
- Commercial and industrial areas discharged stormwater with the highest concentrations of metals, hydrocarbons, phthalates, total nutrients, and a few pesticides.

- Metals concentrations monitored during the dry season (May through September) were statistically higher than concentrations monitored during the wet season.
- Comparisons to water quality criteria were made for context in this report. Copper, zinc, and lead most frequently exceeded (did not meet) the water quality criteria for protection of aquatic life.
- PAHs, phthalates, PCBs, and the few detected pesticides did not exhibit a significant seasonal difference, suggesting these parameters were being discharged from a consistent source throughout the year. Bis(2-ethylhexyl) phthalate was frequently found in stormwater and stormwater sediment.
- Volatile organic chemistry parameters and multiple pesticides were infrequently detected or not detected at all in samples such as benzene, toluene, ethylbenzene, xylene, Malathion, prometon, chlorpyrifos, Diazinon, Triclopyr, mecoprop, and many phenolics.
- NWTPH-Dx compounds were persistent stormwater contaminants. Commercial and industrial areas discharged much higher concentrations and loads than did residential areas. When the motor oil fraction was considered separately, the highest load was from residential areas. However, NWTPH-Gx was poorly detected and, if present, was likely volatilized before monitoring.
- Stormwater sediment samples (collected from catch basins or outfall locations) were infrequently collected but some of the parameters showed a similar contaminant level pattern to the stormwater samples across land uses. Concentrations for several phthalates, PAHs, phenols, copper and lead were often detected but generally lower than sediment cleanup objectives, except bis(2-ethylhexyl) phthalate which was often above. More data is needed to better characterize in-line stormwater solids both spatially and temporally.

3.2.10 Other Studies on Toxics Loading from Stormwater

Ecology monitored building materials and atmospheric deposition in areas of Lacey and Olympia, Washington, and found that high levels of copper and zinc are released each year from materials including streetlight poles, building roofing and siding materials, chain-link fencing, and roof gutters during rainfall events. The primary sources of copper were vehicle brake wear, building roofing and siding materials, treated lumber, and vehicle exhaust. The main sources of zinc were moss control products, building siding, vehicle tire wear, chain-link fence, roofing materials, and vehicle brake wear. New asphalt shingles with algae resistance were found to be particularly significant sources of both copper and zinc.^{33,34}

3.2.11 Sediment Phthalates Work Group

The Sediment Phthalates Work Group was convened in 2006 to address the re-contamination of cleaned up sites in urban bays of Puget Sound. The Duwamish and Foss Waterways are Superfund sites in which sediment samples showed contamination by phthalates after costly sediment cleanups. Phthalates were not among the original contaminants of concern that led to the cleanup, and are pollutants of more contemporary origin than those addressed by the cleanup.

The work group was charged with identifying the sources and pathways for the phthalates and making recommendations regarding the newly contaminated sediments. This workgroup

evaluated information to better understand how phthalates are reaching Puget Sound. The work group identified data gaps, made recommendations, and developed a comprehensive problem statement that included the following findings.³⁵

- Billions of pounds of plasticized polyvinyl chloride (PVC) products are currently in use in urban environments, and these materials off-gas phthalates into the surrounding atmosphere for many years.
- Volatilized phthalates adhere to fine particulates in the air and eventually settle onto impervious surfaces and soil.
- Stormwater washes the phthalate-contaminated particulates into storm drains and subsequently into natural water bodies and sediments, where the concentrations and loadings of phthalates can build up over time.
- Although phthalates do not readily bioaccumulate, large amounts loaded into sediments are toxic to benthic organisms.

Phthalates are an example of a pollutant that exists throughout the urban environment. The work group report acknowledged that it may not be feasible to remove some pollutants such as phthalates from stormwater once they are in the environment. Source control solutions to reducing these pollutants may include finding alternatives to use in manufacturing the products that contain them. Their widespread uses make them somewhat ubiquitous in the contemporary urban setting. Phthalates and some other pollutants will require broader societal efforts to address the contaminants resulting from the manufacturing processes for many products widely used in contemporary society.

3.2.12 Climate Change

Ecology is funding a King County led study to determine the effects of climate change in the region. Working with University of Washington's Climate Impacts group, the study is looking to take larger scale global climate models and downscale them to align with the development regulations in the Phase I and Phase II Western Washington Permits. The study is ongoing and will not be complete until after the Permits are drafted. Ecology will analyze and disseminate the findings of the study within this Permit cycle and may use these findings as the basis for policies and regulations moving forward.

The continuous hydrologic modeling that is the foundation of the development regulation in Western Washington already considers climate change. Continuous modeling is based on the historic rainfall record. The rainfall record will be updated with this Permit cycle. Thus, the model adjusts to the extent that the most recent rainfall records reflect the changing climate.

Eastern Washington development regulations rely on single event modeling and climate that has not yet been analyzed. This modeling is based on widely accepted theoretical rainfall patterns not tied directly to local rainfall records. These theoretical rainfall events have not yet been adjusted to reflect the impacts of climate change.

3.3 Laws and Regulations

3.3.1 Federal Clean Water Act

These Permits implement sections of the Federal Clean Water Act (CWA), the U.S. Environmental Protection Agency rules, and the Washington State Water Pollution Control Act (RCW 90.48).

The Federal Clean Water Act (CWA, 1972, and later modifications in 1977, 1981, and 1987) established water quality goals for the surface waters of the United States. One of the mechanisms for achieving goals of the CWA is the National Pollutant Discharge Elimination System (NPDES) permitting program. In Washington State, Ecology has been delegated authority to administer the NPDES program for most dischargers, including most municipal stormwater dischargers. Chapter 90.48 RCW defines Ecology’s authority and obligations in administering the NPDES permit program.

As part of the 1987 CWA amendments, Congress added section 402(p) to cover stormwater discharges to waters of the United States. Under the Federal Clean Water Act (33.U.S.C. Section 1342(p)(3)(B)), permit requirements for discharges from municipal separate storm sewer systems include:

Municipal Discharge – Permits for discharges from municipal storm sewers:

- (i) May be issued on a system-or jurisdiction-wide basis;
- (ii) Shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and
- (iii) Shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and system design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

Congress phased in NPDES requirements for municipal stormwater discharges in two phases. Phase I includes medium and large municipalities. Populations of over 250,000 are defined as “large,” while those with populations between 100,000 and 250,000 are defined as “medium” municipalities.

In the 1987 CWA amendments, Congress directed EPA to study remaining sources of stormwater discharges and, based on the study, to propose regulations to designate and control other stormwater sources. These regulations, which are commonly known as the Phase II rules, were adopted by the EPA in December, 1999. The Phase II rules extend coverage of the (NPDES) program to certain “small” municipal separate storm sewer systems.

3.3.2 EPA Rules

U.S. EPA implementing regulations define the term “municipality” to mean incorporated cities and unincorporated counties that have sufficient population in a Census Bureau designated urbanized area to meet the population thresholds. In addition, the EPA rule requires permit coverage for other public entities (excluding incorporated cities), regardless of their size, that

own and operate storm sewer systems located within the municipalities that meet the population thresholds. Examples of other publicly-owned storm sewer systems include state highways, ports, drainage districts, school districts, colleges and universities, and flood control districts located within permitted municipalities. Ecology uses the term “Secondary Permittees” for these Permittees in the Phase I and Phase II Permits.

Recognizing the complexity of controlling stormwater, Congress and EPA established a regulatory framework for municipal stormwater discharges that is different from traditional NPDES permit programs. Some of the key provisions of the stormwater rules that reflect these differences are:

- Permits require the implementation of stormwater management *programs* rather than establishing numeric effluent standards for stormwater discharges (40 CFR 122.26(d)(2)(iv)).
- Permits cover a large geographic area rather than individual “facilities.” Within a permit coverage area there may be hundreds or thousands of individual outfalls discharging to surface water (40 CFR 122.26(a)(3)).
- Flexibility that allows Permittees to first focus their resources on the highest priority problems (40 CFR 122.26(d)(2)(iv)).
- Pollution prevention is emphasized with some provisions requiring eliminating or controlling pollutants at their source and by requiring Permittees to assess potential future impacts due to population growth and other factors (40 CFR 122.26(d)(2)(iv)(B) & (d)(1) (iii)).

EPA rules for discharges from large and medium MS4s did not establish actual permit requirements. EPA allowed the permitting authority flexibility to establish permit requirements that are appropriate for the local area under Phase I regulation.

The Phase II rules require the development, implementation, and enforcement of stormwater management programs designed to reduce the discharge of pollutants from MS4s to the maximum extent practicable (MEP), protect water quality, and satisfy the appropriate water quality requirements of the Clean Water Act.

The Phase II rules outline the minimum elements of a Stormwater Management Program (SWMP) which must include:

1. Public education and outreach on stormwater impacts
2. Public involvement and participation
3. Illicit discharge detection and elimination
4. Construction site stormwater runoff control
5. Post-construction stormwater management in new development and re-development
6. Pollution prevention and good housekeeping for municipal operations.

In addition to the above six minimum measures, the Phase II rules also require:

1. Compliance with approved total maximum daily load (TMDL, or water cleanup plan) or equivalent analysis, where appropriate, and
2. Evaluation and assessment of program compliance.

The Phase II rules require Ecology to “make available a menu of BMPs to assist regulated small MS4s in the design and implementation of the municipal storm water management programs to implement the minimum measures specified in (40 CFR) 122.34(b) of this chapter.” The *Stormwater Management Manual for Eastern Washington* and the *Stormwater Management Manual for Western Washington* meet this requirement in regard to construction site stormwater control and post-construction stormwater management in new development and re-development.

On October 22, 2015, EPA published the final National Pollutant Discharge Elimination System (NPDES) Electronic Reporting Rule. This regulation requires the electronic reporting and sharing of Clean Water Act NPDES program information instead of the current paper-based reporting of this information.³⁶

In 2016, EPA completed rulemaking known as the MS4 General Permit Remand Rule addressing a partial remand of the Phase II stormwater regulations by the U.S. Court of Appeals for the Ninth Circuit. The final MS4 General Permit Remand Rule establishes two alternative approaches an NPDES permitting authority can use to issue and administer small MS4 general permits:

- 1) Traditional General Permit Approach: the permitting authority establishes in the general permit the full set of requirements that are deemed necessary to meet the MS4 permit standard (“reduce pollutants to the maximum extent practicable, protect water quality and satisfy the appropriate water quality requirements of the Clean Water Act”), and the administrative record would include an explanation of the rationale for its determination.
- 2) Procedural Approach: the permitting authority would establish applicable permit requirements to meet the MS4 permit standard by going through a second permitting step following the issuance of the general permit (referred to as the “base general permit”), similar to the procedures used to issue individual NPDES permits. Eligible MS4 operators would be required to submit NOIs with the same information that has always been required under the Phase II regulations, that is, a description of the BMPs to be implemented by the MS4 operator during the permit term, and the measurable goals associated with each BMP. Following the receipt of the NOI, the permitting authority would review the NOI to assess whether the proposed BMPs and measurable goals meet the MS4 permit standard. If not, the permitting authority would request supplemental information or revisions as necessary to ensure that the submission satisfies the regulatory requirements. Once satisfied with the submission, the permitting authority would be required to propose incorporating the BMPs and measurable goals in the NOI as permit requirements and to provide public notice of the NOI and an opportunity to submit comments and to request a hearing in accordance with §§ 124.10 through 124.13. After consideration of comments received and a hearing, if held, the permitting authority would provide notice of its decision to authorize coverage under the general permit, along

with any MS4-specific requirements established during this second process. Upon completion of this process, the MS4 would be required to comply with the requirements set forth in the base general permit and the additional terms and conditions established through the second-step process³⁷.

EPA also allows a third option, known as “State’s Choice” which allows for a hybrid approach that incorporates elements from both processes described above. Ecology follows the traditional general permit approach to administer the Phase II Permits.

3.3.3 The State Water Pollution Control Act and Implementing Regulations

In addition to requirements in federal law, there are state law requirements for the control of pollution in Chapter 90.48 RCW, known as the Water Pollution Control Act. RCW 90.48.010 establishes that it is:

the public policy of the state of Washington to maintain the highest possible standards to insure the purity of all waters of the state consistent with public health and public enjoyment thereof, the propagation and protection of wild life, birds, game, fish and other aquatic life, and the industrial development of the state, and to that end require the use of all known available and reasonable methods by industries and others to prevent and control the pollution of the waters of the state of Washington.

The terms “pollution” and “waters of the state” are defined in RCW 90.48.020. Waters of the state “...shall be construed to include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters and all other surface waters and watercourses within the jurisdiction of the state of Washington.” This definition differs from the federal definition of “waters of the United States” which is limited to surface waters. State law requires a permit to regulate discharge of pollutants or waste materials to waters of the state (RCW 90.48.162). In 1987 the State Legislature passed into law RCW 90.48.520. When issuing or renewing state and federal wastewater discharge permits, Ecology must review the applicant’s operations and incorporate permit conditions which require all known, available, and reasonable methods to control toxicants in the applicant’s wastewater. The law prohibits the discharge of toxicants which would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria (RCW 90.48.520).

RCW 90.48.035 grants Ecology authority to adopt standards for the quality of waters of the state. Ecology has adopted the following standards:

- Chapter 173-200 WAC Ground Water Quality Standards;
- Chapter 173-201A WAC Water Quality Standards for Surface Waters; and
- Chapter 173-204 WAC Sediment Management Standards.

These standards generally require that permits that Ecology issues ensure that discharges will not violate standards, or that a compliance schedule be in place to bring discharges into compliance.

The Waste Discharge General Permit Program regulation, Chapter 173-226 WAC, establishes a general permit program for the discharge of pollutants, wastes, and other materials to waters of the state. One of the requirements (WAC 173-226-110) for issuing a general permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet.

4.0 Relationship to Other Stormwater Permits

EPA stormwater regulations establish NPDES permit requirements for stormwater discharges from industrial facilities, construction sites, large and medium municipal storm sewer systems (Phase I), and the Washington State Department of Transportation.

4.1 Industrial Stormwater General Permit

The federal stormwater regulations envision a cooperative relationship between industrial stormwater Permittees that discharge to municipal separate storm sewer systems (MS4s) and those municipal Permittees. In Washington State, a wide range of industrial facilities listed at 40 CFR 122.26(b)(14) must obtain coverage under Ecology’s Industrial Stormwater General Permit, which authorizes discharges to surface waters or to MS4s that discharge to surface waters. Ecology has also issued several industry-specific permits that authorize stormwater discharges from those facilities, including the Sand and Gravel General Permit and the Boatyard General Permit.

4.2 Construction Stormwater General Permit

Under this permit, Permittees must adopt and implement measures to control discharges into the MS4 system from construction sites, including sites regulated by Ecology’s Construction Stormwater General Permit. The Construction Stormwater General Permit is issued by Ecology to individual construction site operators for projects of one acre or more, or for projects of less than one acre that are part of a larger, common plan of development or sale. Construction site operators that are covered under and operating in compliance with the Construction Stormwater General Permit will be in compliance with the construction site runoff control requirements of the Municipal Stormwater Permit. Local jurisdictions may add additional requirements for construction site operators to address local conditions or concerns. Local jurisdictions also coordinate with and complement Ecology’s regulation of construction sites to prevent pollutants from those sites from entering the MS4.

4.3 Washington Department of Transportation Municipal Stormwater General Permit

The Washington Department of Transportation (WSDOT) is a statewide agency that owns and operates municipal separate stormwater systems that carry discharges from highways, maintenance and storage facilities, ferry docks, and other WSDOT facilities. Discharges from WSDOT MS4s are authorized under a single statewide Permit for MS4s in Phase I and Phase II coverage areas, and in areas with applicable TMDLs. The WSDOT Municipal Stormwater Permit was first issued in 2009 and reissued in 2014.

The WSDOT Municipal Stormwater Permit includes requirements similar to the Municipal Stormwater General Permit to conduct public education and involvement, prevent and address polluting illicit discharges, and for operations and maintenance. Requirements for WSDOT construction sites and for managing stormwater discharges from new and re-development projects are consistent with the requirements in the Phase I Permit, except they are tailored to highway construction. WSDOT’s Permit also includes a monitoring program to evaluate the effectiveness of its stormwater management program.

WSDOT stormwater conveyances frequently interconnect with MS4s covered under these Permits. This requires WSDOT and municipal Permittees to work together to control illicit discharges, respond to spills and dumping, and, where they discharge to shared water bodies, to implement TMDLs.

5.0 Antidegradation

5.1 Background

Federal regulations (40 CFR 131.12) and the Water Quality Standards for Surface Waters of the State of Washington (WAC 173-201A-300, 310, 320, 330) establish a water quality antidegradation program. The purpose of the antidegradation program is to:

- Restore and maintain the highest possible quality of the surface waters of Washington.
- Describe situations under which water quality may be lowered from its current condition.
- Apply to human activities that are likely to have an impact on the water quality of surface water.
- Ensure that all human activities likely to contribute to a lowering of water quality, at a minimum, apply all known, available, and reasonable methods of prevention, control, and treatment (AKART).
- Apply three Tiers of protection (described below) for surface waters of the state.

The federally mandated program establishes three tiers of protection for water quality. Tier I ensures the maintenance and protection of existing and designated uses. Tier I applies to all waters and all sources of pollution. Tier II prevents the degradation of waters that are of a higher quality than the criteria assigned, except where such lowering of water quality is shown to be necessary and in the overriding public interest. Tier II applies only to a specific list of polluting activities. Tier III prevents the degradation of waters formally listed as “outstanding resource waters,” and applies to all sources of pollution.

These Permits address antidegradation of Tier I and Tier II waters. Ecology has determined that there are no coverages under this Permit to Tier III waters.

5.2 Formal Adaptive Process to Comply with WAC 173-201A-320(6)

Washington’s Tier II requirements for general permits are outlined in WAC 173-201A-320(6):

- a) Individual activities covered under these general permits or programs will not require a Tier II analysis.
- b) The department will describe in writing how the general permit or control program meets the antidegradation requirements of this section.
- c) The department recognizes that many water quality protection programs and their associated control technologies are in a continual state of improvement and development. As a result, information regarding the existence, effectiveness, or costs of control

practices for reducing pollution and meeting the water quality standards may be incomplete. In these instances, the antidegradation requirements of this section can be considered met for general permits and programs that have a formal process to select, develop, adopt, and refine control practices for protecting water quality and meeting the intent of this section. This adaptive process must:

- (i) Ensure that information is developed and used expeditiously to revise permit or program requirements;
 - (ii) Review and refine management and control programs in cycles not to exceed five years or the period of permit reissuance; and
 - (iii) Include a plan that describes how the information will be obtained and used to ensure full compliance with this chapter. The plan must be developed and documented in advance of the permit or program approved under this section.
- d) All authorizations under this section must still comply with the provisions of Tier I (WAC 173-210A-310).

5.3 How the Municipal Stormwater Permits Meet the Antidegradation Requirement

Ecology's process for reissuance of the Municipal Stormwater General Permits includes a formal process to select, develop, adopt, and refine control practices for protecting water quality and meeting the intent of WAC 173-201A-310. All Permits are issued for a fixed terms of five years. Each time Ecology reissues the Municipal Stormwater General Permits, it evaluates the Permit conditions to determine if additional or more stringent requirements should be incorporated.

Ecology's evaluation of the Municipal Stormwater Permits includes an ongoing review of information on new pollution prevention and treatment practices for storm water discharges. Sources of such information include:

1. *Comments on draft Permits.* Ecology's public process for developing the 2019 proposed Permits includes the following:
 - a. During the 2014 Permit modification to incorporate the results of Permit appeals, Ecology asked for input on opportunities to improve and simplify requirements without compromising environmental protection. Staff used comments from that process to revise and improve the Permits.
 - b. A Permittee and Non-Governmental Organization (NGO) led process in 2016 generated substantive recommendations and comments ahead of listening sessions. Early input from eastern Washington in the winter of 2017 was also useful in determining needed Permit changes.
 - c. In 2017-2018, Ecology staff held five listening sessions statewide and used the feedback to inform Permit revisions for all sections of the Permits.
 - d. An Oct-Feb 2018 informal comment period for western Washington preliminary draft Permit language on education and outreach, IDDE reporting, Source Control for W. WA Phase II, Mapping, Structural Stormwater Controls (Phase I), Controlling runoff manual equivalency, and a framework for long-term municipal stormwater planning generated comments from over 27 entities or individuals.

- e. Ecology will review and use public comment and testimony from public hearings during the public comment period on the draft Permits to develop the final Permits.
2. *Ecology's Stormwater Management Manuals.* Ecology periodically updates the stormwater management manuals based on new information and science. The update process includes a public involvement element. Since the Municipal Stormwater Permits require Permittees to select BMPs from the most recent edition of the stormwater manuals (or a program approved as functionally equivalent), the BMPs contained in updated stormwater manuals are adopted by Permittees. This improves the effectiveness of stormwater controls for protecting water quality and meeting the intent of the antidegradation provisions of the water quality standards. Ecology is providing an updated draft of the *Stormwater Management Manual for Western Washington*³⁸ for public comment concurrent with the draft Municipal Stormwater General Permits. The *Stormwater Management Manual for Eastern Washington*³⁹ will be updated at the end of 2018.
3. *Technology Assessment Protocol – Ecology (TAPE) process.* This formal process reviews and tests emerging treatment technologies for eventual adoption in Ecology's stormwater management manuals. The TAPE review process stimulates the development and use of innovative stormwater technologies used at construction sites and in new and redevelopment projects. There are more than ten Manufactured Treatment Devices (MTDs) with General Use Designations and many other MTDs going through their field monitoring in Washington State and at pre-approved TAPE monitoring sites across the U.S.
4. *Washington Stormwater Center research.* Ecology helped establish and fund the Stormwater Center and affiliated Low Impact Development research program to conduct stormwater technical research. The Center works in partnership with state academic institutions partners including Washington State University Puyallup Campus and the University of Washington Urban Waters Program in Tacoma. The Center disseminates information on current research and training opportunities to municipalities and businesses.
5. *Permittee compliance reports.* Each Permittee submits to Ecology an Annual Report, monitoring results, and special submittals by Permittees for alternative approaches to maintenance or detection of illicit discharges. Ecology staff review and act on Annual Reports to address compliance issues and provide technical assistance. A statewide Ecology Municipal Stormwater Permit Team produces written guidance and Permittee training opportunities to disseminate information on improved BMPs.
6. *Pilot Phase II audit program.* In 2015-2016, the Ecology Municipal Stormwater Permit Team audited specific programs being implemented by 1-2 Permittees in each region. The audits revealed where Permit language might need clarification or emphasis.

The low impact development requirements in the Municipal Stormwater Permits are part of the adaptive process to improve stormwater management and protect surface waters from degradation. Low impact development stormwater management for new and redevelopment projects is a nationally recognized innovative land use and stormwater management approach. Ecology's Permits require LID at levels appropriate to the experience and physical conditions in

each region. Ecology funded an update to the Western Washington Hydrologic Model to address LID BMPs. Ecology continues to fund guidance and training on LID BMPs statewide. In Eastern Washington, where onsite retention is a common practice, but not necessarily through specific LID BMPs, Ecology proposes incremental steps toward eventual broad implementation of LID as appropriate to the climate, soils, and geology of that region. LID guidance specific to eastern Washington was developed during the 2014 Permit term, and is proposed to be incorporated in the updated SWMMEW. These statewide requirements support a fundamental shift to LID stormwater design and management in new and redevelopment that help meet the antidegradation requirements of WAC 172-203A-320(6).

The monitoring proposal in the draft Permits also help satisfy the anti-degradation requirements for adaptive management. The draft Permits requires monitoring studies to evaluate the effectiveness of individual BMPs and/or elements of stormwater programs, which will now include the repository of information for Source Identification and Diagnostic Monitoring for western Washington which still seeks to benefit Permittees statewide in improving programs to eliminate pollution sources. The proposal for monitoring status and trends in Puget Sound receiving waters would provide information to evaluate water quality changes in urban areas where programs are being implemented.

6.0 Explanation of Permit Revisions

The following section describes the rationale for proposed changes to the Permits. Unless specified otherwise, the explanations apply to all three of the Permits, i.e., the Phase I, W.WA Phase II, and E.WA Phase II Permits. The rationale for Permit-specific changes are clearly identified with sub-headings, (e.g., Proposed changes to Western Washington (WWA Phase II: S5.C.2; Phase I: S.5.C.11).

6.1.1 S1 – Permit Coverage and Permittees

This section defines the areas covered by the Permits, the entities that are to be covered under the Permits, and how to obtain Permit coverage.

No significant changes proposed.

6.1.2 S1.A Geographic Area of Permit Coverage

The areas covered by the permit include the entire incorporated area of a city, as described in Phase I S1.A and Western and Eastern Phase II S1.A.1. The Permittees covered under the Phase I Permit were determined by the 1990 census and therefore no new Permittees will be added to the Phase I Permit. No significant changes to S1 of the Phase I Permit are proposed (see discussion below under S1.D regarding proposed changes to the Notice of Intent).

6.1.3 This remaining section on S1 applies to Phase II Only:

To be regulated by the Phase II Permit, small MS4s must:

- Be located within, or partially within, a census-defined Urbanized Area or otherwise designated by Ecology;

- Discharge stormwater to a surface water of Washington State; and
- Not be eligible for a waiver or exemption.

Urbanized areas are population centers with greater than 50,000 people and densities of at least 1,000 people per square mile, with surrounding areas having densities of at least 500 people per square mile. The urbanized areas in this Permit are based on the 2010 population census and the most current Washington State Office of Financial Management population estimates⁴⁰.

For Phase I and Phase II counties, the Permits cover the urbanized area, or census-defined urban area, that extends outside the city. Ecology also includes the county unincorporated Urban Growth Areas (UGA) around Phase II cities where they extend outside of the census-defined urbanized areas, as described in the first part of S1.A.2. Ecology determined that this is appropriate in Washington State because the Permits are designed to address the urban impacts of stormwater, and Washington State has defined UGAs in 36.70A RCW, the Growth Management Act (GMA), as areas where jurisdictions must direct and concentrate urban growth.

Ecology may designate additional areas for coverage. For the 2019 permit cycle, Ecology evaluated the cities of: South Prairie, Shelton, Carnation, Yarrow Point, Woodway, Grandview, Moxee, Naches, Cheney, and College Place. Ecology also evaluated the unincorporated UGAs of: Clallam County, for Port Angeles UGA; Mason County, for Shelton; Island County, for Oak Harbor UGA; Kittitas County, for Ellensburg UGA; and Grant County, for Moses Lake UGA.

Of those evaluated, Ecology determined three jurisdictions warrant permit coverage under the Permits to be effective August 1, 2019: cities of Shelton and College Place, as well as Clallam County's unincorporated UGA for Port Angeles. Ecology lists those jurisdictions in the draft Permit for public review and comment. The second part of Western Washington Phase II S1.A.3 lists the county because it's not associated with census-defined urbanized areas.

6.1.4 S1.B. Regulated Small MS4s

This section defines the entities that must obtain coverage under the Phase II Permit. Ecology proposes only minor changes to this section to clarify or simplify language. No significant changes proposed.

6.1.5 S1.C. Exemptions and Waivers

This section describes the entities that do not need to obtain coverage under the Permits if the conditions in this section are met. EPA administers the Municipal Stormwater Permit program for federal facilities and most federally-recognized Indian Tribes. Proposed language changes to better align with phrasing from the federal regulations.

All MS4s of any size that are owned or operated by Washington State Department of Transportation (WSDOT) are not covered under these Permits because they are covered under a separate stormwater Permit. A copy of the WSDOT Permit is available at [https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/WA-Department-of-Transportation-Municipal-Stor-\(1\)](https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/WA-Department-of-Transportation-Municipal-Stor-(1)).

No significant changes proposed.

6.1.6 S1.D Obtaining Coverage and Entities Covered by the Permit

The Permittees listed in (S1.D.2.a) are continuing Permittees from the current Permit terms. In accordance with General Condition G18 of the current (2013/2014) Permits, all Permittees named in (S1.D.2.a) reapplied for Permit coverage by submitting a timely Permit reapplication (*Duty to Reapply – Notice of Intent (NOI)*) prior to February 1, 2018 (W.WA) (or will need to submit by February 1, 2019 (E.WA)) and will have continuing coverage under these Permits.

Ecology includes a placeholder in (S1.D.2.b) for possible New Permittees that are brought under the final Permits if the evaluations Ecology is conducting demonstrate that a jurisdiction or area meets the criteria for coverage. Cities and county areas under evaluation for Permit coverage are listed in (S1.D.2.b.i) along with a footnote to clarify that coverage is proposed pending completion of the evaluations. If an evaluation determines that a jurisdiction meets the criteria for coverage, they may choose to submit a *Notice of Intent for Coverage under National Pollutant Discharge Elimination System Municipal Stormwater General Permit (NOI)* in advance of final Permits issuance. In this case, the jurisdiction would be listed in (S1.D.2.b) in the final Permits. If a jurisdiction chooses to wait, the draft language in (S1.D.2.b.i) requires the jurisdiction to submit a NOI to Ecology no later than 30 days after the Permit effective date of August 1, 2019.

Special condition S1.D.3 establishes an application process for New Secondary Permittees, or for Co-Permittees that are cities, towns and counties. Cities, towns, and counties that receive coverage after the Permits' issuance date may be brought under the Permit by petition, by expansion of federal census urban areas, or other designation under an administrative order.

The Notice of Intent (NOI) is the official Permit application to request coverage under these general Permits and is provided Ecology's website. Starting on December 21, 2020, Ecology must follow EPA's electronic reporting rule and accept electronic Permit applications in order to provide the required information to EPA. The paper application found in Appendix 5 of the 2013/2014 Permits will be converted to an electronic application, similar to the electronic annual report process.

6.2 S2 – Authorized Discharges

This section of the Permits authorizes the discharge of stormwater from MS4s owned or operated by the Permittees to waters of the State, subject to certain limitations. The Permits do not authorize discharges that are authorized under other permits or programs, such as the Underground Injection Control program.

No significant changes proposed.

6.3 S3 – Responsibilities of Permittees

Because not all parts of the Permits apply to all Permittees, S3 identifies the sections of the Permits that apply to each Permittee, and explains the responsibilities of each type of Permittee.

No significant changes proposed.

6.4 S4 – Compliance with Standards

This section establishes the standards that apply and includes a notification and response requirement under special condition S4 Compliance with Standards. Condition S4.F of the Permits address discharges from municipal separate stormwater sewer systems (MS4s) that are likely to contribute to or cause a water quality standards violation in a receiving water. This section of the Permits provide an adaptive management pathway for Permittees to address those discharges. Ecology prepared a publication to clarify the Permittee’s procedural responsibilities under S4.F, as well as Ecology’s response procedures.⁴¹ Appendix 13 incorporates requirements in response to a significant long-term MS4 adaptive management response effort under Special Condition S4.F.3, which applies to the city of Seattle.

No significant changes proposed.

6.5 S5 – Stormwater Management Program for Cities and County Permittees

6.5.1 Requirements Applying to All S5 Components (S5.A)

Special condition S5.A of each Permit establishes the requirements for the cities and counties named in S1, as well as New Permittees as named in the final Permits, to implement the core components of a stormwater management program (SWMP).

The stormwater management components in S5 form the core requirements of the SWMP. The minimum requirements for each component are established in S5. This section of the Permits provide a complete written record of the local programs, planning documents, and ordinances or other regulatory documents that the Permittees will implement to meet these requirements.

No significant changes proposed.

6.5.2 New Permittee Requirements (Phase II only)

Ecology proposes language in this section for New Permittees as defined in (S1.D.1.b of the PH II Permits) to identify the requirements and implementation schedules they must meet during the Permit term. They must fully meet all the applicable requirements of S5, but for the requirements with footnotes, they must meet the requirements in accordance with the modified activity or implementation schedule. This will result in full implementation of the S5 requirements over the Permit term.

Ecology proposes to require an implementation schedule for New Permittees similar to the schedule met by continuing Permittees as they built their programs during the current (2013) permit term. After it issues the final Permits, Ecology will provide New Permittees with a guidance document that integrates the footnoted requirements into Permit language in order to facilitate planning and implementation.

The proposed language in this section referring to alternate schedules established as a condition of Permit coverage is intended to apply to New Permittees that may begin coverage after the issuance date of the Permit. This could occur, for example, as a result of petition.

No significant changes proposed.

6.5.3 Written Documentation of the SWMP (Phase I: S.5.A.1; PH II: S5.A.2; E.WA Phase II: S5.A.4)

Each Permittee must submit written documentation of their SWMP. The purpose of the SWMP is to provide a description of the activities and actions that the Permittee plans for the upcoming calendar year. Ecology requires Permittees to update their SWMP annually and to submit it with each Annual Report.

No significant changes proposed.

6.5.4 Program Tracking (Phase I: S.5.A.2-3; W.WA Phase II: S5.A.3; E.WA Phase II: S5.A.5)

Each Permittee is required to track the cost of development and implementation of the SWMP. The anticipated cost and resources available to implement the SWMP do not serve as the basis for deciding whether individual SWMPs meet the MEP standard for these Permits.

The requirement to track inspections, official enforcement actions and public education activities is based on EPA regulations in 40 CFR 122.42(c). Ecology proposes to retain language in this section to remind Permittees of this obligation.

No significant changes proposed.

6.5.5 Ongoing Implementation (Phase I: S5.B; W.WA Phase II: S5.A.4; E.WA Phase II: S5.A.3)

Permit language in this section calls for continued implementation of existing programs as Permittees phase in the requirements in their respective Permit, until proposed revisions are put into effect. Ecology includes requirements to retain regulatory mechanisms in local codes, including the illicit discharge prohibitions that cities and counties adopted under the current permit requirements. This language also requires New Permittees to retain existing programs and standards as they phase in the Permit requirements.

No significant changes proposed.

6.5.6 Coordination (Phase I: S.5.C.3; W.WA Phase II: S5.A.5, E.WA S5.A.6)

This requirement calls for establishment of coordination mechanisms both externally and internally to aid in the implementation of the SWMP.

In the requirement for external coordination, Ecology aligned the permit requirement to require coordination, where needed, when watershed, interconnected systems, or waterbodies are shared. Failure to effectively coordinate is not a permit violation provided the other entities, whose actions the Permittee has no or limited control over, refuses to cooperate. This recognizes the difficulty of defining shared water bodies and understands that such coordination may occur at a variety of scales appropriate to the activities being coordinated. Permittees in most parts of Washington worked together in a variety of formal and informal coordination groups during the current (2013/2014) Permit term.

No significant changes proposed.

6.5.7 Purpose of the SWMP (Phase I S5.B; W.WA PH II S5.B; E.WA S5.A.2)

This section is consistent with state and federal law and special condition S4 in requiring that the SWMP be designed to reduce the discharge of pollutants to the maximum extent practicable (MEP), and meet state AKART requirements.

No significant changes proposed.

6.5.8 Program Components. (Phase I: S5.C; W.WA Phase II S5.C; E.WA Phase II: S5.B)

This section of the Permits define the core components of the stormwater management program for cities and counties for the term of the Permits. Each component includes a description of requirements and minimum performance measures. Each component also includes administrative and legal elements that must be in place to ensure program implementation, as well as requirements which should directly affect reduction in pollutants and impacts.

No significant changes.

6.5.9 Legal Authority. Phase I Only (S5.C.1)

This section is directly from EPA regulations (40 CFR 122.26). No significant changes proposed.

6.5.10 Comprehensive Stormwater Planning. Western WA Only. (Phase I S.5.C.6; WWA Phase II: S5.C.1.)

This section is new to the western Washington Permits and contains requirements that apply a more holistic view to municipal stormwater management.

The 2008 Pollution Control Hearings Board (PCHB) Phase I ruling acknowledged the need for a watershed-scale approach to stormwater management based on the testimony of stormwater experts on all sides of the appeal. Scientists and policy-makers recognize that it is not possible to maintain water quality and aquatic habitat in lowland streams in Washington State without considering land use and how the landscape is developed. This must occur at a scale that is broader than individual site and subdivision projects.

The PCHB directed Ecology to require the “permittees to identify, prior to the next permit cycle or renewal, areas for potential basin or watershed planning that can incorporate development strategies as a water quality management tool to protect aquatic resources.”^{42,43} This proposal continues the effort to meet the PCHB’s direction.

6.5.11 Background and need

Urbanization of stream basins in western Washington has almost without exception been accompanied by a significant degradation or loss of the stream-related beneficial uses; in particular, the anadromous fish resources. There are multiple causes for the loss and those include: degradation of chemical and physical water quality; high flow-related stream channel alterations; loss of base flows; significant alteration of hydrologic patterns; and loss of critical riparian area functions.

Various forms of basin planning took place in the past. Those planning efforts traditionally suggested managing urban stormwater from planned new development and redevelopment by using the latest practices recommended by Ecology. Most of those practices are of limited effectiveness because they are applied at the end-of-pipe and/or only partially address the water quality and hydrologic changes of new development. They cannot address the full range of impacts caused by land development. Because the controls recommended by Ecology did not fully address the water quality, nor hydrologic impacts caused by urbanization, those plans have fallen short of protecting the aquatic resources.

Further, addressing stormwater impacts from new development and redevelopment at the site and subdivision scale will not adequately address legacy impacts from previous development patterns and practices, nor will it serve to protect areas providing ecological services for stormwater management. It is clear that we cannot protect the state's waters without also addressing degradation caused by stormwater discharges from existing developed sites. For that reason stormwater programs must include planning and developing policies that address receiving water needs, including development of policy and regulations, and retrofit provisions.

A broader view of planning and implementation is needed in order to support and further habitat restoration needs. Policies that promote compact development, with a smaller footprint, reduced impervious surfaces, natural areas within the urban core, and improved water detention can help local communities meet the Growth Management Act's goals of accommodating growth while protecting the environment⁴⁴. Moreover, research indicates that most stream restoration projects that actively stabilize eroding channels should not be implemented until after hydrologic retrofits have been completed that restore the hydrologic regime, not concurrently with the implementation of the retrofits⁴⁵.

Finally, as mentioned above, the PCHB directed Ecology to use Permit requirements to include watershed-scale planning as a water quality management tool to meet MEP and AKART.⁴⁶

6.5.12 The 2013 Permit requirements

The “Watershed-scale stormwater planning” requirement in the 2013 western Washington Permits (Phase I: S5.C.5.c; W. WA Phase II: S5.C.4.g) is Permit language that must be modified for the 2019 Permit cycle as it was an effort that was not intended to be replicated each Permit cycle, it was expected that this requirement would evolve overtime based on the information gleaned and the lessons learned.

We learned from the “Watershed-scale Stormwater Plans” that the calibrated model for each of the selected basins showed that current and future conditions in these watersheds do not meet water quality standards, and that actions beyond site and subdivision scale of stormwater management will be needed to prevent degradation of the receiving waters.

The models in all of the watersheds projected that riparian restoration (for temperature) and large amounts of additional stormwater detention and infiltration (for flow control, for Benthic Index of Biotic Integrity (B-IBI) scores, and for bacteria) are needed to improve receiving water conditions.

The anticipated costs to restore these watersheds is tens of thousands of dollars per acre of watershed in Snohomish and Clark Counties. The costs per acre for these typical Puget lowland and lower Columbia developing watersheds are significantly lower than for more developed basins (the Juanita Creek Study estimated costs were approximately \$300,000 per acre).⁴⁷ While this demonstrates that current Permit requirements are having a significant impact, the modeled additional effort to recover the beneficial uses are still well beyond current funding programs and approaches.

One important strategy that only one of the four counties highlighted in their scenarios was changing the land use designation or zoning established as part of the growth management process. King County demonstrated that such changes will help protect water quality while substantially lowering the high capital project costs identified by the models.

Comprehensive planning, and stormwater management are regulated under different laws and overseen by different state and local departments with separate administrative and public processes. However, coordination and long-range planning is needed. The consideration of stormwater impacts from development is critical during the planning phases of development. This not only includes planning on the site-level, but also with respect to discharges from the MS4 on a watershed level. To the extent possible, stormwater management must be an integral part of long-range planning documents that determine where and how development that will result in stormwater discharges to the MS4 should occur since these decisions affect water quality. Using land efficiently can result in better stormwater management by putting development where it is most appropriate.

It is possible and reasonable to significantly improve water quality in many urban receiving waters. This requires more than just a new development and redeveloped sites program, however, which at best can only hold the line. To actually improve the quality of receiving waters, it is necessary to develop and implement land use and development strategies that keep in mind the needs of receiving water health, and mitigate discharges from existing developed sites. This can be done in a variety of ways, through public projects, or creative public-private partnerships, or voluntary/incentive programs that encourage property owners to retain discharge onsite. Municipal projects, such as traffic calming sites could also include stormwater retrofit components, such as curb bump outs that include bioretention features or other treatment approaches.

6.5.13 What is proposed?

Local jurisdictions take different approaches to long-range municipal stormwater management planning. Some Permittees have advanced watershed plans, that take into account receiving water health and the need to improve or develop additional stormwater management controls, where some others have only a few policies and have only implemented what has been required by the Municipal Stormwater Permits. Some municipal stormwater programs work well with their long-range planning staff and are successful in influencing policies designed and intended to improve receiving water health and municipal stormwater management; others do not.

This proposed new Phase I and W.WA Phase II Permit section includes three planning elements that address long-term and short-term stormwater management needs.

The first element, coordination with long-range plan updates, works toward a better understanding of local long-range planning processes and how policies, strategies, codes and other measures do, or do not, address probable impacts of increased future stormwater discharges on receiving water health and include additional stormwater management activities needed to meet the goals of protecting and restoring beneficial and designated uses.

The second element, low impact development code-related requirements, brings forward the requirement in the 2013 Permits’ “Controlling Runoff” section (Phase I S5.C.5.b; W.WA Phase II S5.C.4.f), which requires local development-related codes or enforceable standards to require LID in order to make it the preferred and commonly used approach. This element also includes a provision for New Permittees to follow.

The third element, stormwater management action planning (SMAP), applies differently for Phase I and W.WA Phase II Permittees. For the Phase II Permit, the SMAP element begins with a receiving water assessment – to ensure that Permittees compile and review existing data and information on their receiving waters and contributing area conditions, so that they can identify and develop a plan to fill any significant gaps in knowledge. The Permit enables Permittees to complete this element individually or as part of a regional/interlocal effort. Permittees must then develop a receiving water prioritization method and process to rank high priority areas where stormwater retrofits and other management actions would provide a water quality benefit to receiving waters. Permittees must use the prioritized ranking as the basis for creating a plan for one priority area that takes into account tailored stormwater management strategies, including identification of the potential need for stormwater treatment or flow control BMPs to address existing or planned development.

Instead of the receiving water prioritization method and process that Phase II Permittees use, Phase I Permittees have a requirement in (S5.C.7) Structural stormwater controls, which requires Permittees to plan structural stormwater control projects based on a locally developed program that includes a process to prioritize and implement projects. Additionally, the third element applies to Phase I Counties which asks to explain how the watershed-scale stormwater plans (developed in the 2013-2018 permit cycle) informs the prioritization or selection of projects (or both). The requirement helps to refine the watershed-scale plans to highlight implementation actions for a catchment within, by providing a submittal that explains what actions, if any, resulting from the watershed-scale stormwater plans will move forward as short-term or long-term projects and the anticipated implementation schedule.

Overall, the proposal intends to drive a process that incorporates stormwater policies and infrastructure as a need that must be accommodated early in land use planning, capital facilities planning, and regulations.

6.5.14 Purpose of proposed Permit requirements

1. Maintain or develop an interdisciplinary team(s) that can support and coordinate the elements of the requirement.
2. To gain an understanding of how Permittees are currently addressing stormwater needs and receiving water health through various types of comprehensive planning being conducted at the local level.

3. To continue to make LID the preferred and commonly used approach.
4. For Phase I Counties, understand how the watershed-scale stormwater plans are informing and influencing planned stormwater management actions.
5. For WWA Phase II Permittees, to prioritize and plan municipal stormwater retrofits and enhanced SWMP implementation to address impacts from existing or planned development on priority receiving waters.

6.5.15 Internal Coordination

Convene an interdisciplinary team to conduct and coordinate the comprehensive planning program effort. Team make-up should include representatives from the jurisdiction’s stormwater program, long-term planning, transportation, parks and recreation, and scientific and technical experts.

For Phase II, this team could be used to coordinate the planning effort across various departments, compile existing information, refine initial prioritization results, prepare plan, and evaluate the process and implementation of the plan as an ongoing task (if applicable).

6.5.16 Coordination with long-range plan updates.

This section requires the analysis and reporting of how stormwater infrastructure and receiving water health needs are informing the planning update processes, and influencing policies and implementation strategies during existing planning update or development processes. This section does not intend to create a parallel planning process to ongoing long-range planning or Comprehensive Plan updates – rather, the reporting will describe how those processes take into account, consider, and evaluate information related to receiving water health and stormwater infrastructure needs while determining how to accommodate projected growth, or provide adequate services to the existing population served by the MS4.

Permittees will develop a submittal that describes how, or if, stormwater-related water quality and watershed protection are being addressed in revisions to your Comprehensive Plan (or equivalent process) as well as how water quality and watershed protection are being addressed in revisions to other locally-initiated, state-mandated long-range land use, transportation plans, or other plans used to prepare and accommodate population needs.

As described above, stormwater management needs must be taken into consideration early in the planning process, including while determining land capacity for accommodating growth. Ecology intends to learn how Permittees are addressing this need in existing planning updates.

6.5.17 Low impact development code-related requirements

Maintaining the intent of the 2013 Permits, this requires that as jurisdiction’s development-related regulations and standards are being developed or updated, LID must continue to be required in order to maintain and, where needed, make continued progress toward making LID the preferred and commonly used approach.

This section was moved from the “Controlling runoff from new development and redevelopment...” section as it fits in with the roles and responsibility with long-range planning

staff typically assigned to updating development codes. The requirement to look at the broader suite of development-related codes, not just stormwater code that follows Appendix 1 and which applies at the site and subdivision scale, was a point of confusion. Further, it may also be helpful to use the same interdisciplinary team that was developed to complete the first full code-review required by the 2013 Permits to continue to inform this process and the other elements of the Comprehensive stormwater program (i.e. coordinating with long-range plans and stormwater management action planning).

LID requirements for Western Washington Permittees stem from appeals of the 2007 Permit. The Pollution Controls Hearing Board (PCHB) issued a ruling on August 7, 2008 for the Phase I Municipal Stormwater Permit (Phase I permit) for local governments covered under the Phase I permit, including King, Snohomish, Pierce, and Clark counties and the cities of Seattle and Tacoma. The *Findings of Fact, Conclusions of Law, and Order* for the Phase I permit stated that Ecology must “.....require non-structural preventive actions and source reduction approaches including Low Impact Development techniques (LID), to minimize the creation of impervious surfaces, and measures to minimize the disturbance of soils and vegetation where feasible...”

On February 3, 2009 the PCHB issued a *Findings of Fact, Conclusions of Law, and Order* for the WWA Phase II Permit that recognized the wide range of capacity and expertise among Phase II jurisdictions for implementing low impact development requirements.

LID design is not limited to specific stormwater best management practices (BMPs) such as bioretention, permeable pavement, and vegetated roofs. LID also requires an approach to site assessment and project design to conserve vegetation, minimize soil disturbance, and minimize and disconnect impervious surfaces. In order to clarify that implementation of LID includes these elements, Ecology distinguishes between *LID BMPs* and *LID principles* in Permit language, as follows:

- **LID Best Management Practices:** Distributed stormwater management practices, integrated into a project design, that emphasize pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration. LID BMPs include, but are not limited to, bioretention/rain gardens, permeable pavements, roof downspout controls, dispersion, soil quality and depth, vegetated roofs, minimum excavation foundations, and water re-use.
- **LID principles:** Land use management strategies that emphasize conservation, use of on-site natural features, and site planning to minimize impervious surfaces, soil disturbance, native vegetation loss, and stormwater runoff.

By including both terms in the LID requirement, Ecology intends that Permittees will amend or develop stormwater and land use codes, rules, standards, and other enforceable documents as necessary to apply both LID BMPs and LID principles. For continuing Permittees, this applies to the development of new codes/documents, or whenever existing relevant codes/documents are revised. This is not proposed or intended as a repeat of the 2007-2013 Permit requirements, but rather a continuation, so as new codes are being developed or revised, they should not create barriers to LID implementation. In addition, as new codes and administrative practices are being implemented as a result of the updated local programs, any newly found barriers should be reported and corrected.

New Permittees are required to follow the process as was required under the 2013 Permits. See the November 4, 2011 Fact Sheet for discussion on this requirement, available here: <https://ecology.wa.gov/Asset-Collections/Doc-Assets/Water-quality/Water-Quality-Permits/MS4-permits/WWA-PhII/WWAPhaseIIFactSheetFINAL>.

The requirements entail annually reporting a summary of:

1. Any newly identified administrative or regulatory barriers to implementation of LID principles or LID BMPs and measures to address the barriers since local codes were updated in accordance with the 2013-2018 Permits.
2. Any mechanisms adopted to encourage or require implementation of LID principles or LID BMPs. This may include incentive programs, adopted code, or similar efforts.

New Permittees will submit a list of the participants (job title, brief job description, and department represented), the codes, rules, standards, and other enforceable documents reviewed, and the revisions made to those documents which incorporate and require LID principles and LID BMPs. The summary is to include existing requirements for LID principles and LID BMPs in development-related codes and organized by:

- Measures to minimize impervious surfaces.
- Measures to minimize loss of native vegetation.
- Other measures to minimize stormwater runoff.

New Permittees have an additional year after the requirements to adopt of Appendix 1 to complete the broader suite of code review. Ecology has developed an optional reporting template that may be used to help meet this requirement. It is found in municipal Permittee guidance on Ecology's website.

6.5.18 Stormwater Management Action Planning

Phase I Permittees have a requirement in Structural Stormwater Controls (S5.C.7.b.ii (a)) which requires Permittees to develop a prioritization process and criteria to select projects to address impacts caused by the MS4 from areas of existing development. (See discussion above regarding Phase I County's proposed requirement.) This type of planning requirement is new for W.WA Phase II Permit. The following describes how the requirement is structured for Phase II Permittees. See also draft guidance document, Stormwater Management Action Planning Guidance (Ecology 2018).⁴⁸

Basic receiving water inventory and assessment

Permittees will document and assess existing information related to local receiving waters and contributing area conditions to identify receiving waters that will benefit from stormwater management planning. The Permit enables Permittees to complete this element individually or as part of a regional/interlocal effort.

Permittees will prepare an inventory of local receiving waters to which the MS4 discharges and document information about the contributing watershed areas. The inventory shall include currently available basic water quality assessment information.

Where data is lacking, the Permittee should develop a plan and protocol to improve the state of knowledge.

Prioritization of basins for tailored management actions

Informed by the inventory and assessment of receiving waters, Permittees conduct a prioritization process to identify the contributing watershed areas where implementation of stormwater retrofit projects (i.e., new or upgraded stormwater facilities to reduce pollutant loading and address hydrologic impacts from existing and/or new development in the basin), and/or other tailored management strategies and actions will provide the greatest benefit to the receiving waters. This process should include a feedback loop designed to adaptively manage the process and outcomes based on lessons learned.

The Annual Report submittal will describe the well-documented approach the Permittee used to identify high priority areas for retrofits and other tailored management actions based on (1) conditions in the receiving waters, and (2) an assessment or understanding of influence of stormwater management strategies and actions to reduce impacts to the receiving waters.

The Annual Report submittal will describe how the prioritization effort identified and ranked watershed sub-basins or catchment areas where the receiving waters will receive a benefit from implementation of stormwater facility retrofits. The submittal also describes how the prioritization process was used to better inform the implementation of stormwater management actions related to Permit sections within S5.C: IDDE field screening, prioritizations of Source Control inspections, O&M inspections or enhanced maintenance, or Public Education and Outreach behavior change programs.

The Annual Report submittal will document the process and schedule to provide future assessment and feedback to improve the planning and implementation of the proposed projects and actions.

Permittees may reference existing or previous local watershed management planning process(es) as source(s) of information or as the basis or rationale for the prioritization.

Stormwater Management Action Plan

Develop a Stormwater Management Action Plan (SMAP) for at least one high priority area that identifies tailored stormwater management actions, including: stormwater facility retrofits (new facilities or upgrades to existing facilities), a proposed implementation schedule, and budget sources. The plan must identify (1) short-term actions (i.e., actions to be accomplished within six years), (2) long-term actions (i.e., actions to be accomplished within seven to 20 years), and (3) a process to adaptively manage the plan. The SMAP 6-year planning period is based upon GMA/Comprehensive Plan-related capital facilities planning (CFP) requirements, which also aligns with transportation grants which typically require a 6-year plan. The SMAP 20-year planning period is based on the Washington State Department of Commerce recommendation

that CFPs also cover a 20-year planning horizon because capital project financing often requires multi-year commitments of financial resources.

The Annual Report submittal will describe the high priority basin area, the proposed short-term and long-term actions, a funding mechanism, and a description of the adaptive management process. The actions proposed should go beyond existing site and subdivision scale stormwater management requirements. Permittees may reference existing plans, or modifications to those plans, that address these requirements.

6.5.19 Public Education and Outreach
(Phase I: S5.C.11; W.WA Phase II: S5.C.2; E.WA Phase II: S5.B.1)

6.5.20 Proposed changes to all three Permits:

- Format changes for structure and clarity.
- Revisions to clarify target audiences and subject areas and the level of effort needed to comply with this requirement.
- The specific inclusion of “overburdened communities” as a target audience that should be considered. This term is from the US EPA Environmental Justice guidance,⁴⁹ see definitions section of this document for further discussion. Several early commenters recommended greater emphasis on inclusion of all our Washington communities in the education and outreach program.
- To further address and include our diverse communities, another consideration added is the need to prepare material in alternative languages when the target audience speaks a language other than English.

6.5.21 Proposed changes to Eastern Washington

The proposed revisions focus on providing clarity to the public education and outreach section.

One of the target audiences was narrowed to focus on businesses and subject areas that prevent pollution from reaching the MS4. This promotes an education and outreach focus on source control at existing businesses. Ecology is not proposing a Source Control business inspection program for eastern Washington. This is in part based on comments and recommendations received from eastern Washington Permittees. This initial approach focuses on education and outreach, and when needed the authority to require source control BMPs to prevent illicit discharges (see IDDE section for additional discussion).

In order to determine whether a promoted message is reaching a target audience, an evaluation of the program is proposed and the results are to be used to direct the future efforts of the program.

6.5.22 Proposed changes to Western Washington

Ecology received input from Permittees, the regional education and outreach group- STORM, and environmental groups, which recommend changes to the education and outreach program. Significant issues raised include:

- The need to focus the program on known local water quality problems,

- Refine the Phase I behavior change section – specifically because this section of the Permit requires significant time and resources to create and implement behavior change campaigns for each of the target audiences and best management practices (BMPs). The requirement to address the full list was diluting the effectiveness of the program overall.

After considering the comments, existing Permit language, as well as Permit submittals related to the education and outreach programs, Ecology finds it important to align the Phase I and Phase II Permit requirements so that partnerships between Phase I and Phase II Permittees can continue to leverage resources, as well as provide consistent programs to the regions. The proposed Permit language clarifies that the selection of the target audiences and topics be based on local water quality issues. In order to instill consistency in the process for implementing a behavior change campaign, community-based social marketing, a best management practice for establishing behavior change, is called out specifically as a process to follow.

The proposed revisions focus on providing clarity to the components that make up the public education and outreach program:

1. general awareness,
2. behavior change, and
3. stewardship opportunities

The general awareness and stewardship sections stay largely the same as in the 2013 Permit, with language added to help clarify how many audiences and BMPs must be targeted and how to create stewardship opportunities.

Ecology encourages Permittees to cooperate in regional public education efforts. During the past and current Permit terms, Ecology funded efforts such as the Puget Sound Stormwater Outreach for Regional Municipalities (STORM) program and awarded other grants to groups of Permittees for regional or statewide public education activities. Some Permittees requested that Ecology clarify that they may meet Permit requirements through a regional effort, and Ecology added such language to this section of the draft Permit. Jurisdictions using a regional approach should contribute a meaningful level of effort, ensure that the education approach is implemented in their jurisdiction, and ensure that the regional education activities are applicable to audiences and issues in those communities. Cooperative regional efforts are often more effective in disseminating a coordinated message across a region and are generally more cost effective for Permittees.

Language was also added to emphasize the need to consider high priority water quality issues when developing the education and outreach program. The Comprehensive Stormwater Planning receiving water health assessment requirements may be helpful for informing education and outreach program development.

Revisions to clarify target audiences and subject areas:

- Subject areas or revised categories of BMPs are proposed to be refined when the listing was redundant, or could be combined or clarified.

- Subject area: *impacts of illicit discharges and how to report them* was removed because this topic is a requirement of the IDDE section.
- Under the behavior change program, general public is removed as a target audience as this category is too broad of an audience on which to focus a behavior change program. Behavior change programs should target a more specific audience so that it is easier to discern barriers and opportunities for the desired behavior. Target audiences were combined in this section for clarity. Source control BMPs are added to BMPs to promote for a specific target audience.

Revisions to behavior change program section:

- The behavior change section is revised and clarified to set specific expectations for the process to be followed in order to encourage changes in behavior.
- To maintain effectiveness, the behavior change program is based on evaluation of ongoing efforts and how successful the program is at reaching the target audience. The 2013 Permits required an evaluation of the program (due no later than 2/2/2016. See Phase I: S5.C.10.c; W.WA Phase II: S5.C.1.c). The results of that evaluation were required to be used to direct future efforts. In year 2020, a new evaluation of the behavior change program is required. Permittees shall document lessons learned and recommendations for next steps with the program.
 - Recent evaluations of the existing, ongoing behavior change program may count to meet this requirements. To be clear, the original evaluation required under the 2013 Permit (Phase I: S5.C.10.c; W.WA Phase II: S5.C.1.c) would not count toward this proposed requirement.
- Using the new evaluation, Permittees will design the next iteration of the program using community-based social marketing methods to develop a strategy and schedule. Three different options to proceed are offered:
 1. Develop a strategy and schedule to more effectively implement the existing program.

This option is to refine the existing, ongoing, behavior change program with the *inclusion* of community based social marketing methods. This includes, if not part of the program already, a plan to evaluate the effectiveness of the program going forward.

2. Develop a strategy and schedule to expand the existing program to a new target audience or BMPs.

This option is to expand the existing, ongoing behavior change program to a new audience with the same BMP, or same audience but a new BMP may be a better fit or more effective at achieving the desired behavior change.

3. Develop a strategy and schedule for a new target audience and BMP behavior change campaign.

This option is to develop a new approach for the behavior change program, focusing on a new audience and BMP than the existing program.

Solely relying on providing information is not adequate to changing the behavior of individuals. Community-based social marketing is a Best Management Practice to promote and achieve behavior change. Community-based social marketing uses tools and findings from social psychology to discover the perceived barriers to behavior change and ways of overcoming these barriers⁵⁰. Community-based social marketing is pragmatic and generally involves:

- identifying the barriers for a specific demographic (target audience) to a desired behavior,
- developing and piloting a program to overcome these barriers,
- implementing the program across a community, and
- evaluating the effectiveness of the program.

The date by which the strategy developed must begin to be implemented does not necessarily mean when a new or refined program must roll out to the target audience, but may include the start of a survey or focus groups of the target audience or other early tasks that inform the behavior change program.

A report on the effectiveness of the strategy and any potential changes to improve effectiveness of the behavior change program will be required with the Annual Report in year 2024. This provision provides time for the program to develop and be implemented, with time to evaluate and report on the effectiveness of the behavior change program – or whether the target audience received the message and changed their behavior to the desired actions.

6.5.23 Public Involvement and Participation (Phase I: S5.C.4; W.WA Phase II: S5.C.3; E.WA Phase II: S5.B.2)

This section requires each Permittee to make the SWMP and Annual Report available electronically either on the local webpage or through Ecology’s webpage by May 31 each year to ensure timely posting after the March 31 deadline for submittal to Ecology. Ecology believes this is a reasonable requirement given the common use of the internet for public information. Permittees should make other submittals related to the Municipal Stormwater General Permits available to the public upon request.

The intent is to create an environment where the public can have an active role in shaping the local stormwater program. Because Washington State has strong requirements for public participation in local government decision-making processes, a number of SWMP activities such as code revisions already require public involvement under other state and local laws.

No significant changes proposed.

6.5.24 MS4 Mapping and Documentation (Phase I: S5.C.2; W.WA Phase II: S5.C.4; E.WA Phase II: S5.B.3.a)

Many of the changes are proposed to bring statewide consistency to the mapping requirements. The MS4 mapping requirements in the W.WA Phase II Permit are now found in this section –

which is new to the W.WA Phase II Permit. This section was taken from the Illicit Discharge Detection and Elimination (IDDE) Program in order to follow the Permit structure of the Phase I Permit. The mapping requirements for eastern Washington are still found in the IDDE section, but are discussed here.

As stated in previous permit cycles, Ecology proposes the minimum mapping standards in order to know the MS4 system and thus, to be responsive to spills and perform the IDDE and Operation and Maintenance (O&M) requirements (at a minimum).

Although the requirements are not explicit, Ecology expects that Permittees will also map structures such as catch basins and inlets to support their IDDE activities when they map tributary conveyances. This information would be particularly important for purposes of tracing illicit discharges and preventing harm from spills.

Ecology also expects Permittees to map the MS4 in greater detail in areas with land uses that involve storage, transfer, or use of materials where the risk of harm is greater because of factors such as the frequency of transfer or use, the potentially severe or irreversible environmental impacts associated with the illicit discharge or release of such materials, or the nature of the downstream resources at risk. Ecology intends for Permittees to apply local knowledge of land uses to map the MS4 more completely in these areas to meet the intent of the illicit discharge program.

In spring of 2017, Ecology announced in western Washington that we were considering adding an outfall reporting standard requirement to the Permits. We proposed some minimum data attribute information and stated that Ecology would upload the information received into Ecology's Water Quality Atlas. Based on comments received and Ecology's own internal procedures, we are proposing a more step-wise approach to addressing outfall mapping and reporting by requiring the collection of more specific information (i.e. outfall size and material).

Ecology commits to working with Permittees to voluntarily associate outfall data with NHD reach and measure and load it into the Water Quality Atlas during the 2019-2024 permit cycle.

6.5.25 Proposed changes to all three Permits:

- Ecology reformatted the mapping requirements for clarity. Ecology intends for Permittees to update the map of the MS4 on a regular basis to keep them current for intended uses. Draft requirements for New Permittees to map their systems reflect the same expectations and deadlines that applied to continuing Permittees in the current (2013/2014) Permit term.
- All known outfalls have been required to be mapped since the Municipal Stormwater Permits were first issued. In addition to location, Ecology proposes that, at a minimum, the size and material of the outfall, where known, be collected and reported.

As outfall records are updated or added, additional information describing the size of the outfall and the material that it is made out of must be added. This does not mean that Permittees must re-survey all known MS4 outfalls by the date included in the proposed Permit language. Rather, as this information becomes available to the Permittee, through inspections, maintenance, project approvals etc., this attribute information would be added to the outfall records.

- A proposed new feature is the mapping of all known connections from the MS4 to a privately owned stormwater system.

Authorized connections to the MS4 have been required to be mapped under previous Permit cycles. The proposal to map connections from the MS4 to private stormwater systems is to ensure that it is understood where MS4 discharges are leaving the public system. This information, at minimum, could be used to better respond to spills and to be able to complete field screening accurately.

Within the Draft Mapping Guidance that was released with the Western Washington preliminary draft for mapping, the location where the MS4 discharges to a private stormwater system was noted as an outfall location. That guidance is consistent with past guidance from Ecology, as well as with other municipal stormwater permits in the U.S. However, based on comments received, this location is commonly mapped and labeled as a connection point. Ecology prefers to see consistent mapping and following the commonly used terminology meets the intent, as long as these locations are mapped.

6.5.26 Proposed changes to Eastern and Western WA Phase II

- Make electronic format with fully described mapping standards required (electronic format is currently preferred) with a phase-in period for compliance.

This proposed change makes the mapping format consistent across the state. For guidance, Ecology provides an example of mapping standards on its website at:

<https://ecology.wa.gov/Research-Data/Data-resources/Geographic-Information-Systems-GIS/Standards>.

6.5.27 Proposed changes to Eastern Washington

The following additions are proposed to make Phase II mapping requirements more consistent and to improve effectiveness of stormwater management programs.

- The mapping of known discharge points is a new feature to include on the MS4 maps (see Definitions). This term is added for consistency as this term was added to the western Washington Permits with the 2014 Permit modification. It further helps to distinguish when a discharge leaves the MS4 and infiltrates through the Permittees' MS4 facilities designed to infiltrate or the discharge goes to a surface water (see revised definition for outfall). Discharge points do not include UIC facilities, as these facilities are not authorized the Municipal Stormwater Permits, although Ecology sees the benefit in mapping UIC facilities.
- Permanent stormwater facilities owned or operated by the Permittee are added because flow control and treatment BMPs owned or operated by the Permittee are required to be inspected and maintained to ensure proper function and water quality protection.
- Mapping of the connections listed below, assists with operations, maintenance, and IDDE program activities, such as source identification as well as tracking and preventing harm from spills or other illicit discharges.

- All known and new connections to the MS4 authorized or approved by the Permittee.
- Connections between the MS4 owned and operated by the Permittee and other municipalities or public entities.

6.5.28 Proposed changes to WWA Phase II:

Mapping requirements were clarified into sections that call out the ongoing mapping requirements, and the proposed new mapping requirements that need to be added to the MS4 maps to follow the Phase I Permit structure.

6.5.29 Proposed changes to Phase I:

Proposed requirements include the start of mapping the tributary conveyances to outfalls (with a size of 24” or greater) for 50% of the areas of the county not previously mapped in the previous Permit cycles. Previous Permit requirements required the mapping of these features in the urban/higher density rural sub-basins. This proposal continues to update the MS4 map to include these tributary conveyances not previously mapped.

6.5.30 Illicit Discharge Detection and Elimination (Phase I: S5.C.9; W.WA Phase II: S5.C.5; E.WA Phase II: S5.B.3)

Permittees used the illicit discharge detection and elimination (IDDE) program during the current Permit cycle to eliminate many pollution problems.

6.5.31 Proposed changes to all three Permits:

- For this Permit cycle, Ecology proposes to collect this information consistently through an application in the Water Quality WebPortal - WQWebIDDE. However, if this application is not developed in time to be used, a new Appendix is included to provide the information and format to submit with the Annual Report.

An IDDE incident tracking and reporting Annual Report question is in the current Permits. Permittees are required to track and maintain records of the activities conducted to meet the requirements of the IDDE section. In the Annual Report, each Permittee submits data for all of the illicit discharges, including spills and illicit connections reported to, or investigated by the Permittee during the previous calendar year, regardless of whether G3 notification was required, whether an illicit discharge was confirmed, or whether follow-up action was required by the Permittee.

Ecology issued guidance for Permittees in western Washington to meet this reporting requirement during the 2013 Permit cycle, but it was used by only a few. A compilation and review of the data Permittees submitted for the 2014 calendar year found that the variation in reporting limited the analysis and interpretation of the information for adaptive management purposes. Ecology wants the requirement to be meaningful and useful. The Stormwater Work Group stakeholder committee involved Permittees in providing helpful definition and clarity to the expected reporting requirements. Ecology’s IT department is developing a form in the Water Quality WebPortal, WQWebIDDE that is primarily intended for use by Permittees with smaller numbers of incidents to report. Each Permittee may either use their own system or the form in

WQWebIDDE for recording this data. If using your own tracking system, Ecology prefers that all Permittees' submittals be zipped xml files that are compatible with and follow the data schema described in WQWebIDDE, available in the WQWebPortal. As an alternative to WQWebIDDE, should it not be available, the Annual Report submittal must include all of the information specified in the new IDDE reporting Appendix (appendix 7 for E.WA, 12 for WWA Phase II, and 14 for Phase I).

Other changes:

- For the ongoing program designed to address illicit discharges, clarification was added as to whom should be notified.
- For the ongoing program designed to detect and identify illicit discharges and illicit connections into the Permittee's MS4, Permittees are to track their total percentage of the MS4 that has been field screened (or assessed).

6.5.32 Proposed changes to Eastern Washington

- See MS4 mapping and documentation (above) for discussion on S5.B.3.a.
- The subsection that provides legal authority to prohibit non-stormwater discharges into the MS4 proposes an update to the compliance strategy.

The strategy "shall" include the use of operational and/or structural source control BMPs, and the ability to require maintenance of existing private stormwater facilities that discharge into the MS4. Under the 2014 Permit, this strategy was suggested but not mandatory, so Permittees may already have this as part of their program. Permittees may use these steps before, or as part of formal enforcement. Ecology intends that this will provide additional tools to local governments when the IDDE program identifies illicit discharges that are caused by lack of operational or structural BMPs, or the lack of stormwater system maintenance. Ecology does not intend this as a requirement for pro-active business inspections, but to establish the local authority to effectively minimize illicit discharges to the MS4. In a broader context, this enhancement of the Permit-required SWMP provides an additional tool to local governments to address specific pollution problems identified in receiving waters, such as in many types of S4.F notification situations.

This requirement to have the authority to require operational or source control BMPs is also proposed in the W.WA Phase II Permit, but is included in the *Source Control Program for Existing Development* and therefore not discussed in this section.

6.5.33 Proposed changes to Western Washington (Phase I and Phase II)

- For the ongoing program designed to detect and identify non-stormwater discharges and illicit connections into the Permittee's MS4, the source control inspection program may be leveraged if IDDE inspection needs are incorporated into the inspection.

The guidance provided for this section and for field screening has been updated to reference a locally developed manual, the *2013 Illicit Connection and Illicit Discharge Field Screening and Source Tracing Guidance Manual*– available on the Washington Stormwater Center's website.⁵¹ Ecology provides flexibility in the procedures for conducting field screening, and for each

Permittee to develop the method or methods that are most effective and efficient for their MS4. A jurisdiction may employ a method that works best in one part of the system and another method in other parts of the system.

6.5.34 Proposed changes to Western Washington Phase II

- See MS4 mapping and documentation (above) for discussion on mapping requirements.
- Language added to match Phase I Permit language regarding the overall approach for the program. This language does not increase or change Permit obligations relative to the 2013 Permit.
- Since the reference to IDDE awareness was removed from the education and outreach program, this provision was moved up in the list of requirements in this section.

The requirement in to inform public employees, businesses, and the general public about the hazards of illicit discharges is an important part of the program to find illicit discharges. Ecology does not propose to move this requirement to the public education and outreach program. By retaining it in the IDDE section, the requirement applies to all Permittees, rather than being one of several possible topics of public education. Disseminating public information on this topic, combined with a publicized hotline number, will continue to raise public awareness and lead to more public hotline reports of potential illicit discharges.

6.5.35 Proposed changes to Phase I

No additional significant changes proposed.

6.5.36 Controlling Runoff from New Development, Redevelopment and Construction Sites (Phase I: S5.C.5; W.WA Phase II: S5.C.6; E.WA Phase II: S5.B.4&5)

This program prevents and controls the impacts of runoff from new development, redevelopment, and construction activities. The Eastern Washington Permit maintains two sections: 1) construction site stormwater runoff control, and 2) post-construction stormwater management for new development and redevelopment. Proposed changes to both of those sections are discussed here.

6.5.37 Proposed changes to all three Permits

- Requirements for ongoing program implementation by continuing Permittees and footnotes for New Permittees indicating where some requirements are modified and establishing an implementation schedule.

The draft Permits require Permittees to continue to implement the ongoing programs established during the current (2013/14) Permit term. Permittees would be required to modify the program by the deadline proposed for adoption and implementation of the draft revisions to Appendix 1. The implementation schedule Ecology proposes for New Permittees is similar to the timelines applied to Permittees during the current (2013) Permit term (E.WA did not have any new Permittees in the 2014 Permit). An additional year is proposed for New Permittees in western Washington to review and revise LID-related development codes.

The proposed language carries forward the timeframe provided for projects to start construction which were approved under previously adopted local standards. If construction is not started by the date specified in the Permits, then the currently adopted local standards must be applied to the proposed project. The Washington State Supreme Court upheld this Permit language in December of 2016.⁵² Applications submitted after codes were updated and adopted, as required under the 2013/2014 Permits, do not have a date by which construction must start before the 2019 Permit standards must apply; the proposed changes to Appendix 1 and the SWMMWW/SWMMEW are not significant enough to require the administrative tracking and review of projects submitted and reviewed under updated 2013/2014 programs.

6.5.38 Proposed changes to Eastern Washington

- Permit language is reorganized, however it should be noted that the “track changes” version unfortunately shows Permit language that was moved (from one sub-section to another) as redlined so that it appears more language is added than was moved. However, in most cases language was moved intact instead of added.

S5.B.4: Construction Activities proposed changes

- Permit language was moved to clarify the need for Permittees to investigate complaints about sites that apply the Erosivity Waiver in the same manner as one will investigate complaints about sites that have submitted Construction SWPPPs for review and don’t receive a waiver.
- Construction activity requirements are enhanced as follows. These proposed changes will promote the proper planning, preparing, and installation of BMPs and applies more consistent requirements across the state.
 - Review of plans and a site inspection prior to clearing for construction (at sites with high potential for sediment transport).
 - An inspection during construction to ensure proper installation of BMPs is proposed.
- Recordkeeping and training requirements were consolidated in both construction and post-construction sections, rather than distributed throughout different subsections.

S5.B.5: Post-construction proposed changes

- See above – changes to all three Permits. Ecology does not propose significant changes to this section of the Permit. All the changes are either to simplify language and clarify the requirements for continuing Permittees and New Permittees. Permittees must update programs to include the changes proposed in Appendix 1 and adopt the 2019 Stormwater Management Manual for Eastern Washington. The regional technical manuals approved by Ecology may continue to be relied upon for the 2019 permit cycle. Ecology recommends that those relying on an Ecology-approved manual begin to plan the needed updates to align with the 2019 SWMMMEW.
- Maintains the requirement that Permittees allow low impact development. See the Fact Sheet for the E.WA Phase II Permit (November 4, 2011): available here:

<https://ecology.wa.gov/Asset-Collections/Doc-Assets/Water-quality/Water-Quality-Permits/MS4-permits/EWA-PhII/EWAPhaseIIFactSheet>.

6.5.39 Proposed changes to Western Washington

- A date is provided by which code updates related to Appendix 1 and site and subdivision scale requirements must be completed and applied to submitted Permits.

The significant revisions to Appendix 1 are provided in Appendix 10. Appendix 10 lists the minimum changes a Permittee must make to its local program adopted as required by the 2013 Permits. Phase I Permittees will be required to submit their local programs for approval by Ecology. Following past processes, Phase II Permittees do not need to submit their local programs for approval. See additional discussion on the Phase I Permit local program review and approval process under ‘proposed changes to Phase I’, below.

- Clarify definition and therefore requirements related to *stormwater treatment and flow control BMPs/facilities*.

In the 2013 Permits, Ecology introduced a new term *stormwater treatment and flow control BMPs/facilities*. This term has been developed in part to clarify the extent to which LID is included in various SWMP minimum performance measures. See the ‘definitions’ section of this document for additional discussion. Proposed revisions are shown as underlined text:

Stormwater treatment and flow control BMPs/facilities means detention facilities, ***permanent*** treatment BMPs/facilities; ***and*** bioretention, vegetated roofs, and permeable pavements that help meet treatment and flow control requirements.

The term clarifies that long-term maintenance and inspection requirements would not apply to smaller project sites.

- Ecology maintained the 80% inspection rate.

The 80% rate was put in place for the Permit in 2009 to recognize the impacts of the economic downturn on local governments. Ecology proposes to retain this inspection rate in the 2019 Permit for WWA Permittees. The long-term inspections and maintenance requirements applies to BMPs and facilities in project areas that had to meet treatment and flow control requirements. Maintaining this level of effort may help to addresses some of the concerns raised in informal comments regarding additional workload on local government staff. This requirement is consistent with existing requirements for long-term inspections and maintenance.

- The requirements related to the updates to broader development codes (i.e. broader than site and subdivision scale requirements found in Appendix 1) requiring low impact development (LID) to be the preferred and commonly used approach, and the section on watershed-scale stormwater planning, have evolved for continuing and new Permittees.

These requirements are now found in the Comprehensive Stormwater Planning section of the Permits.

6.5.40 Proposed changes to Western Washington Phase II

- The program to verify adequate long-term operation and maintenance (O&M) of privately owned stormwater treatment and flow control BMPs/facilities that are permitted and constructed pursuant to S5.C.6 is now found in the Operation and Maintenance Permit section (S5.C.7.b.i) (formerly *Municipal Operations and Maintenance*).

This follows the Phase I Permit structure. All long-term O&M requirements will be found in the same section. This proposed change meets Ecology’s goal of aligning the Permit structures of the western Washington Permits.

6.5.41 Proposed changes to Phase I

- Requirements to apply updated programs to projects that have not started construction by specified dates.

The 2013 Phase I Permit required Permittees to submit their updated local programs to Ecology for review and approval. The programs were reviewed for equivalency with Appendix 1 and the SWMMWW (as amended in 2014). The deadline for the local adoption of these programs was based on a date in the Permit, which could be extended by the amount of time exceeded due to Ecology’s review of the programs which was exercised, therefore each Permittee had a different adoption date. The proposed date to start construction follows the 2013 permit structure of providing five-years after the program adoption date. Each schedule is listed individually. We considered retaining the June 30, 2020 start of construction date, as listed in the 2013 Permit, as well as relying on the latest date listed in the schedule (e.g. March, 2021) to give all Permittees the same date. The preliminary determination is to follow the 2013 permit structure, but to provide each Permittee with its own schedule. Ecology invites comments on this proposal.

- Ecology proposes to require that Phase I Permittees submit draft revised codes, rules, standards, and other enforceable documents prepared to comply with S5.C.5.b to Ecology for review and approval.

Based on experience from the previous Permit cycles, Ecology retains Ecology’s review time period of 90 days to accommodate any iterative review and revision process with Permittees to finalize approved language. The specific required revisions and format are found in Appendix 10. Ecology expects a streamlined review process. Ecology proposes that the Permittee prepare the submittal for review in a specified format that directly calls out where the revisions were made. Ecology will limit its review to those required sections, unless a Permittee requests review of other sections. A request for review must be complete, all needed information must be submitted with the request or it will be rejected and not part of Ecology’s review and approval.

Once approved, Ecology will list the approved manuals and codes in Appendix 10 of a modified Phase I Permit. This list of approved manuals and codes can be used by Phase II Permittees who choose to adopt a Phase I program that Ecology deems to provide a functionally equal or similar level of protection to the minimum requirements, thresholds, and definitions in Appendix 1.

Between July 1, 2020, which is the deadline for submitting the amendment package, and the July 1, 2021 adoption deadline, Permittees would be responsible for the following:

- Responding to Ecology’s comments. Based on previous experience, several iterations may be necessary before all comments are resolved. However, Ecology intends to bring structure to this review process so that it does not result in an extension beyond July 1, 2021.
- Finalizing documents that reflect the resolution of Ecology’s comments.
- Conducting the public process for adoption.
- If necessary following public processes, making changes and coordinating such changes with Ecology to ensure approvability.
- Adoption by elected officials.
- Make program effective.

6.5.42 Coordinating with Updates of Stormwater Manuals, Guidance, and the Hydrology Model

Ecology is updating the stormwater manuals which provide guidance to local governments and developers on how to design projects to meet the requirements of these Permits.

Stormwater Management Manual for Eastern Washington, Department of Ecology (expected publication: December 2018 or January 2019).

- Ecology released a draft SWMMEW for public comment May 25-July 25, 2018. Proposed edits were based on early comments received and needed updates to better integrate UIC and LID BMP guidance.

Stormwater Management Manual for Western Washington, Department of Ecology (expected publication: July 2019)

- Ecology released the proposed edits of the SWMMWW for public review on July 13, 2018, a month earlier than the public comment period of the formal draft Western Washington Permits. Ecology heard the request to from Permittees and others to have additional time to review the proposed SWMMWW changes ahead and separate from the proposed Permit changes. The close of the comment period for the SWMMWW coincides with the comment period for the Permits.

See Appendix 1 section of this Fact Sheet for related information.

6.5.43 Operations and Maintenance Program (Phase I: S5.C.10; W.WA Phase II: S5.C.7; E.WA Phase II: S5.B.6)

The changes proposed for this section requires continuing implementation of the operation and maintenance programs developed during the current (2013/14) Permit term. Proposed changes are for clarity and streamlining Permit language where appropriate. In eastern Washington, this program still only applies to *municipal* O&M but is discussed here.

6.5.44 Proposed changes to all three Permits

- Maintenance Standards – In this section Ecology sets a deadline for cities and counties to update maintenance standards to be consistent with those in the SWMMWW/SWMMEW.

The proposed deadline is the same as the schedule for adoption of proposed site and subdivision requirements in the Controlling Runoff sections of the relative Permits.

- SWPPP Requirement – Ecology proposes to clarify what should be included in a proper SWPPP as well as include relevant SWPPP to the required training for this program.
- Permit language is clarified to include connections to public or private storm systems when conducting catch basin inspections for maintenance needs. This phrasing is used to ensure that the contributing area to where a discharge leaves the MS4 are included and not left out of the inspection area.

6.5.45 Proposed changes to Eastern Washington Phase II

- Format changes for structure and clarity.
- Discharge point is added.
- Street cleaning is added as a municipal activity required to be addressed.

These proposed additions promotes statewide consistency among the Municipal Stormwater Permits. Permittees in western and eastern Washington are engaged in or starting effectiveness studies related to municipal street sweeping programs; results may inform future Permit requirements.

6.5.46 Proposed changes to western Washington Phase II

- Long-term O&M requirements of stormwater treatment and flow control BMPs/facilities that are permitted and constructed pursuant to S.5.C.6. are now found in the “*Operations and Maintenance*” section for the Phase II Permit.

This follows the Phase I Permit structure and creates one section for all of these related O&M requirements.

6.5.47 Source Control Program for Existing Development. Western WA Only - (Phase I S5.C.8; W.WA Phase II S5.C.8)

This provision is based upon EPA rules at 40 CFR 122.26(d)(2)(iv)(A) which call for a stormwater management program that includes, among other things, source control measures.

Ecology is proposing to add the Source Control Program to the W.WA Phase II Permit, the proposed Permit language is modeled from the Phase I Permit language.

The Source Control Program for Existing Development is a proactive, preventative, inspection-based program that is focused on addressing pollution from existing land use and activities that have the potential to release pollutants to the MS4. This program relies on local authority to

inspect businesses and properties, and if necessary requires operation or structural source control BMPs in order to prevent pollution from entering the MS4.

6.5.48 Proposed changes for Western Washington Phase II

Ecology received input in the fall of 2016 from a group of Permittees that recommended adding this program to the WWA Phase II Permit. At Ecology-held listening sessions on Permit reissuance (in spring 2017), Ecology proposed adding this program to the Permit. Ecology has considered the comments and proposed Permit language in the WWA Phase II Permit that addresses comments received.

Preventing pollutants from coming into contact with stormwater and entering the MS4 is the best way to reduce impacts of municipal stormwater and thus protect receiving waters. This program has been effective within the Phase I Permit coverage areas, as well as within Phase II communities implementing similar programs voluntarily. Ecology expects better protection of receiving waters by expanding this program to all western Washington Permittees. The compliance strategy should include technical assistance and education and outreach as the first approach to gain compliance. Enforcement actions are only needed when other approaches are found to be ineffective. While each Permittee will need to have local authority to require the use of BMPs, Permittees may work together or form regional partnerships as a means to implement the inspection program locally.

The proposed Permit requirement provides a transition period to develop the program and begin inspections. This allows time to form regional partnerships to help meet this requirement. As proposed, the requirements provide:

- Three years to adopt any necessary ordinances and develop the inventory of businesses.
- Three and a half years to begin inspections.

These timeframes are based on the input Ecology received at the listening sessions. Permittees requested additional time in order to conduct outreach to the existing business community ahead of ordinance adoption. This thoughtful and planned approach to develop the program may gain local support for the program, creating a better adoption process. Additional time allows planning for the needed resources for implementation.

The Permit requires a program to identify potentially pollutant generating sites. The categories of land uses and businesses listed in Appendix 8 are based on the Stormwater Management Manual for Western Washington. Unlike cities, counties do not have local business license programs. Permittees may use other records, such as land use maps and parcel information to generate the inventory provided the inventory represents and encompasses the business types listed in Appendix 8. The inventory must be created once during the permit cycle, and will follow the practice of being updated once every five years as called for in the Phase I Permit. A complaint-based response program is also required; this can be combined with the requirement for a citizen complaints/reports telephone number for the illicit discharge detection and elimination program.

The number of annual inspections is equal to 20% of the businesses or properties on the inventory list.

The Permit requires an inspection and enforcement program for identified sites. Note that while the Permits call for inspecting 20% of the identified sites each year, Ecology does not expect inspection of 100% of the sites over the 5 year term of the Permit. Follow-up inspections count towards the annual inspection rate. Permittees may prioritize sites, categories of land use, or geographic areas. If a jurisdiction knows that a health district or industrial stormwater inspector will inspect a particular business/property for stormwater management needs, the Permittee may choose to prioritize other businesses/properties to inspect. Those sites where the property owner denies entry and there is no legal authority to inspect the site may be excluded from the onsite inspection, however, the Permittee is still responsible for enforcement of applicable local laws related to pollution or evidence of an illicit or contaminated discharge can be documented without entering the property.

The Permit requires implementation of a progressive enforcement policy to assure compliance with stormwater requirements within a reasonable time period. The reason for this requirement is to ensure Permittees’ implement the legal authority required in the EPA rules and in S5.C.

Training for the source control program may be combined with training for the illicit discharge detection and elimination program and operation and maintenance programs.

6.5.49 Proposed changes to Phase I

Ecology clarifies that the Source Control Program applies to public and private properties that meet the criteria of the program. No significant changes proposed.

6.5.50 Structural Stormwater Controls. Phase I Only - (S5.C.7)

Phase I Permittees are required to implement a program for Structural Stormwater Controls (SSC) as part of their Stormwater Management Program (SWMP). Ecology aims this program toward retrofitting existing developed areas; and promotes planning and prioritization of these projects to reduce impacts to watershed hydrology and pollutant discharges from MS4s. Qualifying projects reduce or prevent negative water quality impacts from MS4s. This program also addresses regional stormwater facilities and stormwater impacts inadequately controlled by other Permit requirements.

6.5.51 Proposed Retrofit Incentive Point Requirement

Ecology proposes a defined level of effort for the SSC Program. The level of effort is counted in “retrofit incentive points,” which is an accounting system created to standardize quantification of project benefits for a wide range of qualifying project types that are implemented to varying degrees of effectiveness across a multitude of landscapes, land uses, and scales. Ecology is proposing a minimum SSC point requirement of 300 incentive points.

Including a minimum point requirement in the Phase I Permit means there needs to be a deadline for conducting the compliance tally, clarity on project status that qualifies for tallying, and a target number of retrofit incentive points to achieve over the course of the tallying period.

- Ecology proposes December 31, 2022 as the cut-off date for calculating points toward the required minimum. This allows for reporting by March 31, 2023 in advance of the Permit expiration date. This equates to a tallying period of 3.5 years.

- The projects that qualify for tallying must be at defined project stage(s) or frequencies. This Permit cycle’s minimum point requirement is intended to allow for a “ramp up” adjustment to reflect program planning, and therefore includes a level of effort for design-stage incentive points as well as complete/maintenance-stage incentive points. Complete/maintenance-stage incentive points may substitute for design-stage incentive points, however a minimum of complete/maintenance-stage incentive points must be achieved by the date proposed. Qualifying maintenance projects which sum annual activities are to be reported and tallied individually per year (e.g., separate line items in Appendix 12 reporting).
- Points to be achieved must be both goal-oriented and reasonable. Ecology proposes the following defined level of effort for the 2019-2024 Permit cycle:
 - 225 design-stage retrofit incentive points, and
 - 75 complete/maintenance-stage incentive points.

This level of effort was based on Ecology’s analysis of data from the 2013-2018 Phase I Appendix 11 submittals, Permittee provided point estimations of projects completed during the 2013-2019 Permit cycle; and best professional judgement. Permittees’ reported funding of these projects from a mix of local, state, and federal funds. The minimum level of effort proposed therefore reflects some inclusion of these funding sources. The proposed Permit requirement to demonstrate a minimum level of effort will not make projects ineligible for state grant and loan funding. While water quality funding sources and levels have remained relatively stable over the years, Ecology makes no assumptions that that will be the case in the future. Grant and loan sources will remain competitive with no guarantee of securing funding for individual projects that may contribute to SSC incentive points.

Ecology’s proposed calculation of a project’s retrofit incentive is intended to reflect MS4 retrofit priorities as well as receiving water conditions and project effectiveness. This Permit cycle’s minimum point requirement is intended to allow for a “ramp up” adjustment to reflect program planning, and therefore includes a level of effort for design-stage incentive points as well as complete/maintenance-stage incentive points.

Points are assigned differently to each qualifying project type. The scaling basis of point assignments is relative and is used solely for calculating compliance with the retrofit incentive point requirements of the SSC Program. Many point assignments are based on an “equivalent area” calculation. Ecology bases the equivalent area calculation on a scale that compares the amount of runoff treatment or hydrologic control achieved through the proposed project to the amount achieved if you designed the project to meet the new and redevelopment criteria for the area draining to the new BMP(s).

Equivalent area is then used for LID (MR #5), runoff treatment (MR #6), or flow control (MR #7) benefit standardization, reflected as a ratio. Because hydrologic and treatment benefits from stormwater facilities vary, Ecology has divided each into different levels of project achievement. Each level is given a retrofit incentive point multiplier that reflects a point system that is used to define the required SSC Program level of effort.

When creating the point system, Ecology placed particular emphasis on:

- Reducing negative water quality impacts from existing MS4 discharges;
- Project effectiveness (as compared to minimum technical requirements for new/redevelopment projects);
- Addressing receiving water quality impairments (i.e., 303(d) listings); and
- Preventing future negative water quality impacts from the creation of MS4s (i.e., permanent protection from development) and MS4-related discharges.

The point system is intended to accommodate:

- Separate Incentive points for Design and Construction of a single project to provide credit for taking a project beyond the 60% design level.
- Diverse qualifying project types – For example, projects that involve habitat protection or reforestation are difficult to quantify in terms of a hydrologic and/or runoff treatment benefit. Thus, Ecology based the retrofit incentive points on the land area protected or restored.
- Different MS4 service area scales, landscapes and land uses – Cities and counties have distinctly different landscapes in their MS4 service areas, and thus present different opportunities for SSC project types.

In general, the proposed Retrofit Incentive Point structure is intended to result in:

- More incentive points for projects that improve water quality discharges to a water body with known water quality problems (such as 303(d) listing or contaminated sediment cleanup site).
- More incentive points for projects that treat greater volumes of stormwater runoff (using a metric based on the 91% volume required for new and redevelopment projects) than projects with runoff treatment facilities that treat lesser volumes of water.
- More incentive points for projects that provide greater “large storm” (MR #7) hydrologic benefit as compared to the standard flow control requirement
- More incentive points for projects that provide greater “small storm” (LID, MR # 5) hydrologic benefit as compared to the LID Performance Standard.
- More incentive points for runoff treatment projects that quantifiably address targeted pollutants, such as dissolved metals, phosphorus or other chemicals of concern.
- Modest incentive points for property acquisition or other permanent protection of forest cover and riparian habitat.
- Fewer incentive points for expensive capital maintenance projects and for enhanced maintenance activities that provide variable or conditional outcomes.
- Fewer incentive points for projects that restore riparian buffer because this project type can be construed to, at least in part, mitigate for prior negative impacts from MS4 discharges, hydromodification, or land disturbing activities. Due to its likely direct

improvement to surface water quality via shade and vegetative cover, riparian restoration is assigned slightly more points than forest restoration.

Projects that restore forest cover and reconnect floodplains receive the least amount of incentive points because these project types can be construed to, at least in part, mitigate for prior negative impacts from land disturbing activities.

6.5.52 S5.C.7.a Project Types for Consideration

Ecology proposes the following changes for qualifying project types:

- Ecology proposes to remove ‘riparian habitat acquisition’ as its own project type, as this project would qualify under ‘property acquisition for water quality and/or flow control facilities.
- The addition of ‘permanent removal of impervious surfaces’ as a project type. Doing so changes the Project Type Numbers that were used during the 2013-2018 Permit cycle.
- Ecology proposes the LID BMP project type as separate from the flow control facility (after having combined them as a result of public comments on the 2013-2018 Permit). This enables LID BMPs to receive independent credit for achieving the LID Performance Standard. Doing so changes the Project Type Numbers that were used during the 2013-2018 Permit cycle.
- Ecology proposes to include modest additional credit for qualifying projects related to the MS4 which implement an Ecology-approved basin plan (refer to Permit Appendix 1, Section 7), a watershed-scale stormwater plan from the 2013-2018 Permit’s Special Condition S5.C.5.c, a TMDL (refer to Appendix 2), or an Ecology-approved adaptive management plan (refer to Permit’s Special Condition S4F.3 and Appendix 13). The 2013-2018 Permit included, as a distinct qualifying project type, “capital projects related to the MS4 which implement an Ecology-approved basin or watershed plan.” Ecology proposes to remove this as an independent qualifying project type because qualifying projects are included in other Project Type categories. Instead, such projects are given additional retrofit incentive points. Ecology proposes the addition of 0.10 to the applicable multiplier. Ecology proposes to limit this addition to capital projects and explicitly exclude maintenance actions under Project Type #10.

The following information describes and provides clarifying information for each project type that must be considered in Permittees’ SSC programs:

(1) New flow control facilities (S5.C.7.a.i(a))—Flow control facilities need not be regional. These facilities do not have to meet the “standard flow control requirement” (refer to Permit Appendix 1 Section 4.7) but they shall be new facilities designed to control stormwater flow from existing development. Project proponents that don’t follow design criteria from the SWMMWW, or equivalent manual, should be prepared to provide additional project details at Ecology’s request to support calculations for equivalent area, water quality benefits, and retrofit incentive points. Qualifying projects in this category will be compared against the Flow Control Standard for retrofit incentive point calculations.

(2) New runoff treatment facilities (S5.C.7.a.i(b))—Runoff treatment facilities include facilities that provide oil control, phosphorus treatment, enhanced (dissolved metals) treatment, and basic treatment. Facilities in this category do not have to meet runoff treatment requirements (e.g. treat 91% of the average annual runoff) but they shall be new facilities that provide a treatment benefit for existing development. Project proponents that don't follow design criteria from the SWMMWW, or equivalent manual, should be prepared to provide additional project details at Ecology's request to support calculations for equivalent area, water quality benefits, and retrofit incentive points. Maintenance activities are not classified under this project type. Qualifying projects in this category will be compared against the Runoff Treatment Standard for retrofit incentive point calculations.

(3) New LID BMPs (S5.C.7.a.i.(a)-(b))—These facilities are consistent with the lists of On-Site Stormwater Management BMPs of Minimum Requirement 5 and reduce the volume of runoff by infiltrating runoff from the small, more frequent storms. Qualifying new LID BMP projects result in the reduction or prevention of hydrologic changes through use of on-site (e.g., infiltration, dispersion, evapotranspiration, rainwater harvesting) stormwater management BMPs. LID principles reflected in site design techniques do *not* qualify because projects that apply LID principles in a retrofit setting should be accommodated in other qualifying project types (such as property acquisition and restoration of forest cover). Qualifying projects in this category will be compared against the LID Performance Standard for retrofit incentive point calculations.

(4) Retrofitting of existing stormwater facilities (S5.C.7.a.i(c))—Retrofitting is expected to occur on previously constructed stormwater facilities that, if modified, would provide additional hydrologic or runoff treatment benefits. For example, Ecology considers the retrofit of a stormwater pond to provide a settling area and more storage a retrofit to a stormwater facility. Maintenance activities such as removing sediment to re-establish wet pool volume but not increasing volume beyond the initial design are not classified under this project type.

(5) Property acquisition to provide additional runoff treatment and/or flow control benefits (S5.C.7.a.i(d)) — This category excludes the purchase of property for the siting of a stormwater facility. Instead, purchase of a likely development site to permanently prevent it from being developed would qualify under this category. This category includes forest protection and conservation easements. Riparian habitat acquisition qualifies under this project type. Property used for dispersion does not qualify under this project type; it is considered a new LID BMP (Project Type 3).

(6) Maintenance with capital construction costs \geq \$25,000 (S5.C.7.a.i(e)) — This project type applies to repair projects that improve the hydrologic or treatment performance of stormwater facilities. This project type is directly related to Operations and Maintenance Program requirements at S5.C.9.a.ii which reflects that maintenance projects, including repairs, which require capital construction \geq \$25,000 are not subject to the required 2-year window for completing the maintenance. These projects typically compete with the other types of retrofit projects for limited capital construction funding. Ecology intends that these projects be reflected in the SSC program in order to provide a comprehensive view of MS4 maintenance activities and requirements. Permittees may

develop criteria for identifying maintenance projects that reach the capital construction cost threshold on an area-wide or system-wide basis per the requirement in S5.C.7.b.ii (g). A maintenance project that removes sediment from an existing pond to re-establish the original design volume, will qualify under this project type.

(7) Restoration of riparian buffers (S5.C.7.a.ii(a)) — This project type is retained from the 2007 Permit, this project type is not directly related to stormwater (i.e. not driven by stormwater capital planning) but provides stormwater benefits.

(8) Restoration of forest cover (S5.C.7.a.ii(b)) — This project type is retained from the 2007 Permit, however this project type is not directly related to stormwater (i.e. not driven by stormwater capital planning) but provides stormwater benefits.

(9) Floodplain reconnection projects on water bodies that are not flow control exempt per Appendix 1 (S5.C.7.a.ii(c)) – Qualifying floodplain reconnection projects will have an MS4 nexus and provide flow reduction and runoff treatment benefits. Ecology added this project type in response to comments on the 2013-2018 Permit.

(10) Permanent removal of impervious surfaces- (S5.C.7.a.ii(d)) Permanent removal of impervious surfaces and replacement with pervious vegetated surfaces meeting BMP T5.13 or trees that promote infiltration, dispersion, and uptake by plants or reduce the amount of pollution generating impervious surfaces qualify under this project type.

(11) Other actions to address stormwater runoff into or from the MS4 not otherwise required in S5.C (S5.C.7.a.ii(e)) — Ecology included this project type in the SSC Program to allow Permittees to count the runoff treatment (pollutant removal) and/or hydrologic benefits of maintenance actions that address existing stormwater runoff into or from the MS4 not otherwise required in the Stormwater Management Program requirements of S5.C. Ecology intends this category to encompass “enhanced maintenance” projects, such as high efficiency street sweeping and line cleaning not otherwise used to comply with S5.C.10 (i.e., catch basin inspection alternatives). In order for any action to receive credit under the SSC Program, it must have a quantifiable hydrologic or runoff treatment/pollutant removal benefit and sufficient recordkeeping to verify implementation and benefits. While this project type will generally consist of “activities,” Ecology considers them “projects” due to the data collection and analysis that are necessary to support assignment of retrofit incentive points.

6.5.53 S5.C.7.b SWMP requirements for the SSC Program

The required written documentation of the Permittee’s SSC program is substantially unchanged.

6.5.54 S5.C.7.c Structural Stormwater Control Reporting

The reporting of planned projects over the Permit term is substantially unchanged.

6.6 S6 - Stormwater Management Program for Secondary Permittees

Secondary Permittees are public entities such as ports, park districts, school districts, colleges and universities, state institution campuses, state military campuses, irrigation districts, and diking and drainage districts that are located in a Phase I and Phase II coverage areas and own or

operate a regulated MS4. This section of the Permit describes the requirements that apply to Secondary Permittees and makes up the core elements of their Stormwater Management Program.

The SWMP for Secondary Permittees is intended to apply to a wide variety of Secondary Permittees. The requirements of Special Condition S6 will apply differently depending on the type and function of the public entity, the size and nature of the coverage area, and the specifics of the entity’s MS4. For example, ports covered by the Permit may lease property to other entities that manage stormwater on the leased property, and in some cases that property may be covered by the *Industrial Stormwater General Permit* or another NPDES stormwater permit. Alternatively, many colleges and universities have resident and commuter student populations. Diking and drainage districts may serve more than 1,000 residents because their service areas are now partially in urbanized areas, but they have little or no authority over activities on those properties. Some Permittees may rely on the local jurisdiction to regulate discharges into their MS4s, others may rely on another NPDES permit for such discharges, while others such as school districts may rely on internal policies that control operations on all the lands served by their MS4.

Ecology’s is not proposing any significant changes to the Secondary program. For purposes of this Fact Sheet, a description of the program is provided.

6.6.1 S6.A New Secondary Permittees

Secondary Permittees may begin Permit coverage at any time during the Permit term, and the implementation schedule may extend from one Permit term to the next. Secondary Permittee implementation schedules are calculated based on the date of Permit coverage. As New Secondary Permittees begin Permit coverage and fully implement their requirements, they will be subject in future Permit terms to deadlines for the “initial” date of Permit coverage. Ecology uses this approach to direct continuing Secondary Permittees to continue implementing their programs according to their individual schedules, and to direct New Secondary Permittees to phase in their programs according to individual schedules over a four and one-half year period. Once the SWMP is fully implemented, Ecology expects all Secondary Permittees to continue full program implementation.

6.6.2 S6.D Stormwater Management Program

The purpose of the SWMP is revised to include descriptions of the planned program activities for the upcoming year. This could be relatively short, and could include a brief description of planned activities for public education and outreach, field screening, or stormwater system maintenance.

No significant changes proposed.

6.6.3 S6.D.1 Public Education and Outreach

No significant changes proposed.

6.6.4 S6.D.2 Public Involvement and Participation

No significant changes proposed.

6.6.5 S6.D.3 Illicit Discharge Detection and Elimination

No significant changes proposed.

6.6.6 S6.D.4 - Construction Site Stormwater Runoff Control

No significant changes proposed.

6.6.7 S6.D.5 - Post-construction Stormwater Management in New Development and Redevelopment

Secondary Permittees do not have land use authority under state law, and the requirements of this and the previous section refer to the obligation to comply with local ordinances governing these activities. Where the MS4 is interconnected with the local jurisdiction MS4, Secondary Permittees must coordinate to assist the local jurisdiction in achieving compliance with local codes. This might occur if the local jurisdiction needed assistance in addressing a discharge from a Secondary Permittee's MS4 that originated from a tenant's discharge into the MS4 of the Secondary Permittee.

6.6.8 S6.D.6 - Pollution Prevention and Good Housekeeping for Municipal Operations

The draft Permits require that operation and maintenance of the Secondary Permittee's MS4 must include standards consistent with or more protective than those in Ecology's updated *SWMMWW or SWMMEW*. The updated Ecology manuals may include new standards relevant to the Secondary Permittee's MS4.

Ecology proposes language to require Secondary Permittees to review maintenance standards to ensure they are consistent with any updates in local or Ecology standards. Secondary Permittees would update their maintenance standards to be consistent with the 2018/2019 manual updates.

6.6.9 Phase I Only - S6.E Stormwater Management Program for the Port of Seattle and Port of Tacoma

No significant changes proposed.

6.7 S7 - Compliance with Total Maximum Daily Load Requirements

Under some circumstances, when the water quality of a water body is impaired, the federal Clean Water Act requires States to set limits on the amount of pollutants that the water body receives from all sources. States may also set limits on pollutant loads when water bodies are threatened. These limits are known as Total Maximum Daily Loads (TMDLs). A TMDL is developed through a defined process to identify the maximum amount of a pollutant that may be discharged from all sources to a water body without causing violations of water quality standards. Pollutant control strategies are developed in a TMDL to keep the pollutant loading below that level. TMDLs include an assignment of Waste Load Allocations (WLAs) to NPDES permitted dischargers and Load Allocations to control the load from non-point pollution sources.

Stormwater dischargers authorized by these Permits are required to implement actions necessary to achieve the reduction in pollution called for in applicable TMDLs. Applicable TMDLs are TMDLs which EPA has approved prior to the date the final Permit is issued, or prior to the date that Ecology issues coverage under these Permits, whichever is later. Information on Ecology's

TMDL program is available on Ecology’s website at: <https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Total-Maximum-Daily-Load-process>

Ecology incorporates these required actions in the Permits through Special Condition 7. In some cases, actions are included in Appendix 2 as requirements for individual Permittees. Appendix 2 lists the actions by TMDL and by Permittee. The proposed Appendix 2 includes both updated actions from the current (2013/2014) Permit term and new actions proposed for TMDLs approved since the 2013/2014 Permits were issued.

The stormwater management program required by these Permits can help make progress in preventing pollution and cleaning up water bodies impaired in part by stormwater discharges. These two related Clean Water Act programs are integrated through Appendix 2 actions. Ecology expects the addition of TMDL actions to focus resources where Ecology and local communities identified the most severe problems and the actions needed to correct them in the TMDL process. Ecology encourages Permittees to participate in the TMDLs that are currently being developed within their jurisdiction, and to begin implementation where appropriate.

Ecology reviews EPA-approved TMDLs to identify those that assign a Waste Load Allocation to one or more municipal stormwater Permittees. Ecology then identifies the actions for Permittees and compares them to existing Permit requirements. There are three types of TMDL actions:

1. Actions already addressed by regular stormwater program implementation, such as a public education program or ongoing maintenance of the MS4. Ecology does not include these actions in Appendix 2. Special condition S7 states that for TMDLs not listed in Appendix 2, compliance with the Permit constitutes compliance with those TMDLs.
2. Actions that require a Permittee to target a SWMP requirement to a specific area or activity, such as focusing the illicit discharge screening program in the area draining to the impaired water or conducting a public education program that includes pet waste education. Appendix 2 lists these actions with a reference to the related program, and identifies the specific area, BMP, or timeline.
3. Actions in addition to the current SWMP that are not necessarily reflected in the existing program requirements, but are relevant to the MS4 and its contribution of pollutants to the impaired water body. This could include special monitoring requirements or a specific stormwater facility retrofit.

Where monitoring is required, Appendix 2 requires that it be conducted according to an Ecology-approved Quality Assurance Project Plan (QAPP).

The proposed Appendix 2 actions link to and address the potential MS4 contribution to the impairment. If the list for one Permittee is long, Ecology proposes priorities and schedules. In some cases, the draft actions for one permit term may include requirements to collect and evaluate monitoring data, then use the analysis to develop an action plan, and finally to begin implementing the action plan. This supports an adaptive management approach, to avoid requiring Permittees to monitor a site for the entire Permit term before acting on the information.

The focus is on achieving the TMDL objective, which is to meet the WLA for the MS4 contribution, and ultimately to improve or restore water quality in the receiving water.

The proposed Permits also includes updated actions for TMDLs that are listed in the current (2013/2014) permit's Appendix 2. Updates may include removing actions now completed, moving to the next logical action, or incorporating new actions based on lessons from the current Permit term.

Before releasing the draft Permits, Ecology informed affected Permittees of the range and scope of actions it expected to propose in the draft Appendix 2. In some cases, Ecology staff met with affected Permittees to review proposed language and ask for feedback. This “no surprises” approach reflects Ecology’s recognition of Permittees’ local knowledge in ground-level efforts to clean up impaired waters.

6.8 S8 - Monitoring and Assessment

6.8.1 New Permittees

Because new permittees are just starting their programs, Ecology is not requiring them to participate in regional monitoring studies or conduct monitoring during the 2019 Permit term. New permittees should plan to either participate in regional monitoring studies or conduct individual monitoring in future Permits. See respective Permits for description of program and options available.

6.8.2 Proposed changes to Eastern Washington Phase II

Permit condition S8.A of the 2014 Permit has been removed. Ecology reviewed the information provided by Permittees in their Annual Reports and found the submittals to be redundant with other Permit conditions including S4.F (Compliance with Water Quality Standards); S7 and Appendix 2 (Total Maximum Daily Loads); S5.C.3 (Illicit Discharge Detection and Elimination); and S8.B (Stormwater Management Program Effectiveness Studies).

During the 2014 Permit, all eastern Washington city and county Permittees participated in a robust and extensive process to identify, prioritize, and select stormwater management program effectiveness study topics and questions. Before the end of the Permit cycle, eight studies were chosen, and Quality Assurance Project Plans (QAPPs) were approved by Ecology for each study.

During the 2019 Permit, the eight studies identified in the 2014 Permit cycle will be completed, and new studies will be identified. There are ten designated Urban Areas in eastern Washington: Wenatchee, Ellensburg, Yakima, Sunnyside, Tri-Cities, Moses Lake, Walla Walla, Clarkston, Pullman, and Spokane. Ecology expects the Permittees associated with each Urban Area to collaborate to prioritize, plan, and begin implementation of a new study. Any number of Urban Areas may work together on a single new study (*i.e.*, all of the cities and counties in Yakima, Sunnyside, and Tri-Cities Urban Areas – or all Eastern Washington Permittees – can propose a single study as a regional group). This will result in up to, but no more than, ten new studies beginning by the end of the 2019-2024 Permit.

For a new study, Ecology encourages Permittees to utilize the list of study topics and questions submitted per S8.B.3 of the 2014 Permit. For a new study, Permittees may decide to conduct a

second or follow-up phase of one of the eight studies begun under the 2014 Permit. The new study answer may address questions that remained unanswered in the first study, provide deeper research, or be otherwise closely tied to the original study. Studies do not need to be completed within the 2019-2024 Permit cycle, but the QAPPs must include complete project timelines.

Study design proposals and QAPPs must follow the format and instructions in the three QAPP templates produced during the 2014 Permit cycle for studies of structural BMPs, operational BMPs, and education and outreach BMPs⁵³. The QAPP templates are available on Ecology's website.

Effectiveness studies of retrofit projects will use the QAPP template for structural BMP studies, but TAP-E requirements do not need to be met for these studies. Grant-funded capital projects provide good opportunities for collecting high quality data to document water quality benefits of retrofit and redevelopment stormwater projects. Permittees may submit proposals for monitoring these types of projects as effectiveness studies. Such a proposal must complement the grant-funding process and take into account the uncertainty of capital project funding.

Ecology expects every Permittee to participate in one or more of the following ways:

1. Actively leading a study: serving as Lead Entity and providing project management oversight of the study from QAPP completion through implementation and completion.
2. Providing staff or in-kind services: participating in the project's Technical Advisory Committee, reviewing draft study documents, arranging field sampling locations, lending equipment, conducting field work.
3. Contributing funds through an interagency agreement or other arrangement with the Lead Entity or directly via a contract with a study sub-contractor.

These studies are associated with the Permittees' Stormwater Management Programs, and should be included therein. All Permittees are expected to keep track of their assigned duties and record their participation in meetings, proposal development, project reviews, and study implementation. A summary of these activities will be included in each Permittee's Annual Report.

6.8.3 Proposed changes to Western Washington (Phase I and Western Washington Phase II)

This section defines adaptive management monitoring requirements for Permittees in western Washington. The 2019 Permits continue the collaborative regional stormwater monitoring program (RSMP) approach that began in the 2013 Permits. The RSMP is now called Stormwater Action Monitoring (SAM). SAM's primary audience is stormwater managers, and a SAM communication strategy was developed and implemented in 2017.

Ecology accepted the Stormwater Work Group stakeholder group's 2010 recommendations describing a comprehensive framework with status and trends monitoring in receiving waters, effectiveness studies, and source identification. Because the Permits do not include compliance monitoring, and very few Permittees have continued stormwater discharge characterization monitoring, Ecology needs the receiving water monitoring to evaluate and continue to adapt the Permits over time. The effectiveness studies provide more regionally applicable and robust

findings than would be produced by requirements for each individual Permittee conducting their own studies.

Permittees choose to collaborate with each other, and other stakeholders, by funding SAM through their S8 requirements. Making contributions to SAM cost-share accounts relieves Permittees of the duty to conduct individual adaptive management monitoring projects. SAM conducts regionally relevant projects that provide adaptive management feedback information to improve Permittees' stormwater management program implementation and to inform Ecology's Permit requirements. SAM projects are prioritized and approved by a formal stakeholder group. SAM projects include: receiving water monitoring, effectiveness studies, and source identification.

Permittees make annual contributions to SAM cost-share accounts that are managed by Ecology and overseen by the formal stakeholder group. The Permits provide the option of either paying into the SAM accounts or conducting stormwater discharge monitoring as was required in the 2007 Phase I Permit and for Clark County in the 2013 Phase I Permit, and was provided as an alternative to participating in the effectiveness studies component of SAM in the 2013 Phase I and Phase II Permits. Phase I Permittees also have the option of conducting an effectiveness study in lieu of paying half of the annual cost-share account contribution for effectiveness studies.

SAM was launched in 2014. By the summer of 2018, five Puget Sound receiving water studies were completed, and fourteen effectiveness studies and three source identification projects – all relevant to Permittees across western Washington – were in various stages of completion; and four more SAM projects were in development. The 2019 Permits introduce a new regional urban streams monitoring program in geographic areas of the Lower Columbia (LC) River basin covered by the Permits.

Background

Ecology's Permits have never included compliance monitoring, but instead have required stormwater discharge characterization and effectiveness studies by Phase I Permittees. The earlier Permits' Phase I monitoring requirements provided useful information, but at significant cost and effort. In 2005 a group of Phase I and Phase II Permittees formally asked Ecology to consider a different approach to MS4 permit monitoring. The Puget Sound Monitoring Consortium (PSMC) was funded by the state legislature in 2007 at the request of local jurisdictions and other stakeholders.

The 2007 Phase I Permit required each individual Permittee city, county, and port to conduct stormwater discharge monitoring, stormwater treatment and flow control facility evaluation monitoring, and targeted program effectiveness monitoring. The 2007 Phase II Permit did not include monitoring requirements; it required each Permittee to submit an effectiveness study proposal in their Annual Report in 2011. The lack of Permit monitoring requirements in the 2007 Phase II Permits was challenged, and the Pollution Control Hearing Board (1) concluded that Ecology should require monitoring in subsequent Phase II Permits and (2) endorsed the PSMC process for framing a collaborative regional monitoring program.

In 2008 the PSMC convened the Stormwater Work Group (SWG), with Ecology providing staff support. The SWG is a formal stakeholder group with a charter and bylaws; the SWG updates its biennial work plan each year. SWG members are designated as official representatives by the caucuses of federal and state agencies; by a local jurisdiction caucus; and by environmental and business groups. Additional seats at the table are designated for tribes, ports, and agriculture. In 30-plus meetings from 2008-2010, the SWG deliberated and reached consensus agreement on nearly all of the 88 stakeholder recommendations the group submitted to Ecology for a comprehensive scientific framework, implementation plan, and Permit monitoring requirements. Ecology then wrote the 2013 Permit monitoring requirements to implement the SWG's recommendations.

The collective S8 requirements in both of the 2013 Phase I and Phase II Permits – S8.B status and trends monitoring, S8.C stormwater management program effectiveness studies, and S8.D source identification and diagnostic monitoring – replaced the individual monitoring requirements in the 2007 Phase I Permit that otherwise would be continued into future Phase I and Phase II Permits.

Process for selecting SAM studies

The SWG selects and approves all activities funded by the SAM cost-share accounts. The SWG gathers stakeholder input and sets priorities for each of the three strategic categories where SAM activities are targeted to answer stormwater management questions: receiving water monitoring, effectiveness studies, and source identification.

SAM projects provide regionally applicable information to improve how stormwater is managed either by informing Permittees' or developers' implementation of BMPs or by improving Ecology's permits, guidance documents, or BMPs in the *Stormwater Management Manual for Western Washington*. SAM studies work together to provide information about how our overall approach to stormwater management is working: Are conditions in receiving waters improving? Do BMPs function as intended? What are the sources of pollution and how can we find and reduce them?

Topics for study under SAM are developed in stages, and continue to evolve reflecting the needs for feedback information from stormwater managers. For Puget Sound receiving waters, the scientific framework completed in 2010 included the scientific approach and study design for the studies which were first conducted in 2015-2016. In 2013, the SWG recommended a list of six priority topics for the first two solicitation rounds for SAM effectiveness studies. In 2012-2013, an EPA-funded literature review and scoping paper described the need for a Source Identification Information Repository with two components: Results and Findings, and Methods and Approaches.

The SWG conducted solicitation rounds in 2014 and 2017 to identify and select SAM effectiveness studies. The solicitation process included technical reviews by Ecology's engineers and the SWG's effectiveness subgroup (of Permittees, consultants, and state and federal agency scientists) and Permittee voting to rank the proposals. Another SWG subgroup (of mostly IDDE field practitioners) recommended the first four SAM source identification projects for SWG approval. Permittees will continue to vote on individual effectiveness studies and source

identification project proposals prior to SWG approval for SAM funding. A third solicitation round is planned for fall 2019; it will solicit studies and projects in both effectiveness and source identification categories. In 2018, the SWG began a year-long process to adjust the study design approach and priorities for future status and trends monitoring, effectiveness studies, and source identification projects. A workshop is planned to gather feedback on the proposed priorities for the 2019 solicitation round.

Communicating and applying findings from SAM studies

Each contracted SAM project is described on the web pages at ecology.wa.gov/SAM where Permittees and stakeholders can follow project development and findings. A two-page fact sheet is posted at the main SAM web page for each completed SAM project. The fact sheet includes details about the stormwater management problem addressed by the project, study findings, and recommendations. The fact sheets also include sections titled “Why does this study matter?” and “What should we do with this information?” and “What will Ecology do with this information?” Permittees should read through the fact sheets and apply the findings to their stormwater management programs as applicable. Stormwater managers may also read the full reports posted on the SAM web pages.

Oversight of SAM contracting decisions and expenditures

Ecology agreed to manage the SAM program, per the SWG’s 2010 recommendations, with the condition that the SWG oversee and make decisions for funding projects with the SAM cost-share accounts. The SWG’s Pooled Resources Oversight Committee (PRO-C) provides this oversight, with a focus on projects’ scopes, schedules, and budgets. Ecology’s roles are to collect, administer, and manage the SAM cost-share accounts and contracts. Ecology contracts with local governments and others to conduct the SAM studies that have been approved by the SWG. Each spring, Ecology outlines the progress SAM made during the prior calendar year in an Annual Report to Permittees. Ecology also delivers regular budget and progress reports to the PRO-C and SWG as part of the SAM oversight process. These reports, and SAM project deliverables, are posted on the SAM web pages.

The PRO-C ensures transparency, efficiency, and accountability in Ecology’s SAM contracting decisions and cost-share account expenditures. The PRO-C has a charter and bylaws, and the seven PRO-C members formally represent Permittees and other stakeholders. The PRO-C meets regularly for detailed program management discussions with Ecology’s SAM Coordinator. The PRO-C and SWG provide feedback to Ecology on SAM implementation.

Cost allocation approach

A table listing each Permittee’s cost shares for S8.A Regional status and trends monitoring and S8.B effectiveness studies and source identification is provided in new Appendix 11. The costs were allocated by population using the same approach as for the 2013 Permit with updated data from OFM that was available in April 2018. The regional population covered by the Phase I and Phase II Permits increased by 14.2% but the annual cost-share amount for nearly every Permittee is lower than in the 2013 Permits.

New Permittees in the 2013 Phase II Permit were not included in the cost allocations for the 2013 Permits but are included in the cost allocations for the 2019 Permit for both S8.A.2 and S8.B.2. New Permittees in the 2019 Phase II Permit are not included in the cost allocations.

The Ports of Seattle and Tacoma do not have residential populations but they participate in SAM and are included in the cost allocations. The assigned population for the Ports' 2013 Permit cost allocations was increased by 10% for the 2019 Permit cost allocations.

The Washington State Department of Transportation (WSDOT) is covered by a separate MS4 Permit. WSDOT participates in the SAM regional receiving water monitoring in Puget Sound and the Lower Columbia and conducts effectiveness studies per the requirements of their separate Permit. WSDOT was not included in the cost allocations for the 2013 Permits but WSDOT is included in the cost allocations for regional receiving water monitoring in the 2019 Permits. As agreed by stakeholders for the Puget Sound and Lower Columbia receiving water monitoring programs, WSDOT's cost allocation is set equivalent to the City of Kent for Puget Sound and to the City of Longview for the Lower Columbia region.

Future annexations could potentially affect the proportional allocation of cost shares determined by this approach. Because Permittees' cost shares will not be amended during the 2019-2024 Permit term, Ecology encourages local jurisdictions to consider addressing their financial commitments to SAM in future annexation agreements.

Proposed Changes from the 2013 Permit

The 2013 Permit condition S8.A is removed from the 2019 Permits. The condition required Permittees to provide summaries of other stormwater-related monitoring information provided to them during each reporting year. In 2017, Ecology reviewed all of the reports submitted in the Annual Reports for the 2013 Permits and found the information to be redundant to other parts of the Permits, especially Special Conditions S4 Compliance with Standards (and particularly S4.F), S5 IDDE program requirements, S7 and Appendix 2 TMDL requirements, and S8 Monitoring and Assessment regional stormwater monitoring program activities.

New 2019 Permit conditions S8.A.1 and S8.B.1 require SAM contributions in the first year of the 2019 Permit by all Permittees who participated in those SAM components in the 2013 Permit. S8.A.1 and S.8.B.1 support the business practice of spreading SAM contributions over five years, lowering Permittees' annual contributions and helping the SAM Coordinator and PRO-C efficiently manage income and expenditures. This approach was presented in the informal draft Permit language that Ecology released for public comment in fall 2017; Ecology received no negative comments about this proposed payment or its timing. Permittees will be invoiced for this payment soon after the Permits are issued.

2019 Permit condition S8.A.2 is similar to the 2013 Permit condition S8.B.1 but adds new Permittees that became covered in the 2013 Permit, one Phase I Permittee and seven Phase II Permittees in Clark and Cowlitz Counties. Together they fund a Lower Columbia (LC) Urban Streams regional monitoring study that was developed during the 2013 Permit cycle and recommended by the LC stakeholders and Permittees, including WSDOT.

The 2013 Phase I Permit condition S8.B.2 is removed from the 2019 Permit. Clark County will be conducting the LC Urban Streams monitoring study in the 2019 Permit cycle. Stakeholders in the LC region came to agreement on a study design and implementation plan during the 2013 Permit. On March 30, 2018 Clark County sent a letter to Ecology expressing their intent to enter into a contract to conduct LC Urban Streams monitoring as a SAM project. Clark County's contracted work will begin in August 2020. New 2019 Permit conditions for Clark County include completing the "Quality Assurance Project Plan for Status and Trends Monitoring of Urban Streams in Clark and Cowlitz Counties in the Lower Columbia River Region – Template for Clark County, Lead Entity," including two interim submittals for specific QAPP sections, during the first year of the 2019 Permit and then, in the second and following years of the Permit, contributing to the cost-share account for LC Urban Streams, along with the seven Phase II LC Permittees. In the first year of the 2013 Permit, Phase I city and county Permittees in Puget Sound were required to contribute \$15,000 each toward status and trends monitoring startup costs including QAPP writing as a transition from their stormwater discharge monitoring Permit requirements to the regional receiving water monitoring. The QAPP template for LC Urban Streams monitoring was largely completed during the 2013 Permit cycle with grant funding from Ecology, so completing the QAPP is expected to be a small (less than \$15,000) effort. The QAPP template includes an approach for adaptively managing the study design as information is analyzed.

New 2019 Permit condition S8.B combines 2013 Permit conditions S8.C and S8.D. This approach was presented in the informal draft Permit language that Ecology released for public comment in fall 2017; the comments Ecology received were supportive of this approach.

As indicated above, the cost allocations for each Permittee have changed. In the 2013 Permit cycle the total cost-share amounts contributed annually by all participating Permittees (including WSDOT) was \$892,176 for status and trends and \$1,744,122 for effectiveness studies and source identification. The intent expressed in the informal draft Permit language Ecology shared in 2017 was to spread costs over five years rather than four, reducing the per-capita cost allocation. However, due to regional population increases, this approach represented a net increase in SAM funding over a five-year period. The SWG's and others' comments on the 2017 informal draft Permit language recommended keeping total SAM funding for the 2019 Permit cycle approximately the same as for 2013 Permit cycle.

After consideration of the comments on the 2017 informal draft language, the Ecology determined that an annual funding level of \$750,000 (\$0.1654 per person in Puget Sound) will adequately fund future rounds of SAM's Puget Sound receiving water monitoring and analyses; and that an annual funding level of twice that, or \$1,500,000 (\$0.3023 per person in western Washington permitted areas), for SAM's regional effectiveness studies and source identification will support approximately five new projects per year – a project management load that can be supported with the current SAM staffing levels. The LC Urban Streams cost allocation was set during the stakeholder process at \$0.2442 per person (equal to the 2013 Permit per-capita cost allocation amount for the first round of Puget Sound receiving water studies), resulting in \$136,466 per year for that study.

New Phase I Permit condition S8.B.2.c.ii is similar to 2013 condition S8.C.3 in the 2013 Permit. Phase I Permittees choosing this condition must submit a detailed proposal following the

template provided by Ecology. The “SWMP Effectiveness Study Proposal and QAPP Template” includes specific instructions for the information and organization required to meet both S8.B.2.c.ii.(a) and S8.B.2.c.ii.(b). This template was adapted from a document developed under an Ecology Grant of Regional or Statewide Significance for selecting and finalizing the Eastern Washington effectiveness studies during the 2014 Permit. Ecology believes the use and application of this template will improve study designs and ultimately broaden the applicability of study findings to other Permittees.

New 2019 Permit condition S8.C requires Permittees who choose not to participate in SAM, via either or both S8.A and/or S8.B, to conduct stormwater discharge monitoring. S8.C replaces 2013 Phase I Permit condition S8.B.1.b and Phase II Permit condition S8.B.2 and 2013 Phase I and Phase II Permit condition S8.C.2. S8.C is similar to 2007 Phase I Permit condition S8.D and 2013 Phase I and Phase II Permit condition S8.C.2. The SWG’s 2010 recommendation was that all Permittees be required to participate, but Ecology decided that the Permits should include an alternative option. In the 2013 Permit, one Phase I Permittee chose condition S8.C.2, one Phase I Permittee chose condition S8.B.1.b, and one Phase II Permittee chose condition S8.B.2. The 2013 Phase I and II Permits’ alternative to participation in regional status and trends monitoring of receiving waters has been removed and replaced with this new condition. Implementation of 2013 Phase I Permit S8.B.1.b and Phase II Permit S8.B.2 was challenging for Permittees and required substantial additional project management by Ecology staff. Many of the streams sites were nested and therefore duplicative, and the sites provided a relatively insignificant contribution to the regional findings. Ecology decided that Permittees’ local receiving water monitoring should be targeted to meet individual jurisdictions’ needs and not diverted to geographically limited replications of the regional monitoring.

Compliance with monitoring requirements

Permittees who participated in SAM in the 2013 Permit and Permittees who choose to participate in SAM in the 2019 Permit must submit required payments to Ecology by the indicated due dates. Ecology will invoice Permittees three months in advance of each SAM payment due date. Receipts for each Permittee’s annual payments into the SAM cost-share accounts are entered into PARIS by Ecology staff.

All Permittees must inform Ecology before the December 1, 2019 as to which option under each section S8.A and S8.B the Permittee chooses to implement for the remainder of the Permit. Each Permittee must choose only one option for the duration of the 2019 Permit. Timely annual payments into the SAM cost-share account(s) fully satisfy a Phase I or Phase II Permittee’s obligations under S8.A.2.a and/or S8.B.2.a; and partially satisfies a Phase I Permittee’s obligations under S8.B.2.c.

Ecology will administer the cost-share accounts and execute contracts to implement SAM projects under the oversight of the SWG and PRO-C. The status of SAM project implementation and production of monitoring data, related information, and other contract deliverables shall have no effect on any Permittee’s compliance with this Permit.

Permittees who choose not to participate in SAM must fulfill the requirements of S8.C and Appendix 9. Phase I Permittees who choose S8.B.2.c must fulfill the additional requirements in S8.B.2.c.ii.

Other monitoring

Ecology believes that the responsibility for stormwater-related monitoring is shared among Permittees, the State, and the federal government. SAM does not, nor is it intended to, represent the total effort to collect meaningful information about stormwater impacts on receiving waters and effectiveness of stormwater management practices. Other local, State, and federal monitoring programs provide additional data, meaning, and context for SAM findings.

Participation in SAM does not fulfill a Permittee’s requirement to conduct monitoring that may be required to implement the requirements of other sections of the Permits. SAM is not designed or intended to address locally-specific monitoring driven by illicit discharges, TMDLs, and other needs and priorities. Ecology recognizes that many individual jurisdictions invest a significant level of resources in these other types of monitoring both to implement these Permit-required activities and to otherwise inform their efforts to protect local water bodies.

The provisions of this Permit section meet Ecology’s needs for adaptive management information and should be considered part of Permittees’ stormwater management programs, as opposed to their monitoring programs. Some Permittees have asked Ecology to provide “credit” for their local monitoring activities in lieu of contributing funds for SAM receiving water monitoring, but the study designs and approaches to answer different questions at different scales are not scientifically compatible. To the extent that comparable methods are used for parameters common to SAM and local monitoring programs, the efforts can learn from – but not replace – each other.

Ecology has embraced the SWG formal stakeholder group recommendations for SAM’s, collaborative regional approach to Permit-required monitoring to minimize the diversion of resources away from local monitoring efforts and to provide meaningful information as a benefit to all Permittees.

6.9 S9 - Reporting Requirements

Ecology proposes to retain the same timing for Annual Reports for the 2019-2024 Permit term, which is a report for the previous calendar year to be submitted by March 31. The first year Annual Report due by March 31, 2020 will cover the period from January 1, 2019, through December 31, 2019. Permittees will report on implementation of the continuing programs required by the 2013/2014 Permits and any new requirements due or implemented as required by the 2019 Permits.

6.9.1 Annual Report Appendices

Ecology applies the following list of objectives when developing the draft Annual Report appendices:

1. Track the compliance status of Permittees.
2. Gather information to improve Permits.

3. Identify needs for technical assistance.
4. Identify successful outcomes of program for the public.
5. Help Permittees coordinate internally.
6. Gather meaningful quantitative information statewide.

Because of the variation in requirements and implementation schedules, Ecology provides separate Annual Reports for cities, towns and counties that are continuing Permittees (Appendix 3) and those that are New Permittees (Phase II only, Appendix 5). The Annual Report for Secondary Permittees (Appendix 4) is intended both for continuing Secondary Permittees and for New Secondary Permittees, as the deadlines are tied to the initial Permit coverage date. The Phase I Permit also has an Annual Report for the Ports (Appendix 5).

The draft appendices include questions that Ecology intends to address using the six objectives listed above. The number of questions with numerical answers is reduced, although some remain as indicators of compliance and for reporting statewide outcomes. There are a few more questions requesting summaries of activities intended to provide information on meaningful successes and outcomes, needs for technical assistance, and opportunities to improve the Permits.

6.10 General Conditions

Ecology has revised General Condition G3 Notification of Discharge, Including Spills. This condition requires Permittees to notify the proper entities when there is knowledge of a discharge, including spills, into or from a MS4 which could constitute a threat to human health, welfare, or the environment. The revision proposed for G3 prepares for alternative reporting methods currently under development.

Follow-up actions responsive to a G3 report should be tracked by the Permittee and reported in the Annual Report per the requirements of Phase I: S5.C.9; W.WA Phase II: S5.C.5; and E.WA Phase II: S5.B.3.

6.11 Definitions and Acronyms

Ecology's revisions to the Definitions section of the Permits reflect objectives of improving consistency across the Municipal Stormwater General Permits, simplifying and clarifying language, and improving the accuracy of definitions of the terms as used in the Permits. Specific edits proposed to Definitions include the following types of changes:

1. Addition of terms and definitions new to the Permits.
2. Correction of a previous definition to match the use of the term in the Permits.
3. Edits for consistency with other NPDES stormwater general permits, or for consistency across all three Permits.

Ecology lists the proposed revised terms below according to the type of change.

6.11.1 Addition of terms and definitions new to the Permits.

6.11.2 Proposed changes to all three Permits

Overburdened Communities (added to all three Permits). Proposed definition:

Overburdened Communities means Minority, low-income, tribal, or indigenous populations or geographic locations in the United States that potentially experience disproportionate environmental harms and risks. This disproportionality can be as a result of greater vulnerability to environmental hazards, lack of opportunity for public participation, or other factors. Increased vulnerability may be attributable to an accumulation of negative or lack of positive environmental, health, economic, or social conditions within these populations or places. The term describes situations where multiple factors, including both environmental and socio-economic stressors, may act cumulatively to affect health and the environment and contribute to persistent environmental health disparities.

See Education and Outreach section for additional discussion. This term is from the USEPA Environmental Justice guidance⁵⁴. Several early commenters recommended greater emphasis on inclusion of all our Washington communities in the education and outreach program.

6.11.3 Proposed changes to Eastern Washington

The proposed revisions to the following definitions bring consistency to all of the Municipal Stormwater Permits.

Conveyance system. Proposed definition:

Conveyance system means that portion of the municipal separate storm sewer system designed or used for conveying stormwater.

This proposal brings consistency to the definitions across all three Permits.

Discharge point. Proposed definition:

Discharge point means the location where a discharge leaves the Permittee's MS4 through the Permittee's MS4 facilities/BMPs designed to infiltrate.

This definition pertains specifically to facilities/BMPs designed to infiltrate that are owned or operated by the Permittee. Locations that inadvertently infiltrate are not included in this definition. In locations where Discharge Points overlap with other features that are required to be mapped (such as stormwater treatment and flow control BMPs/facilities) both features should be mapped and distinguishable - as Permit requirements relate to the features differently. For example, Discharge Point would be used for an infiltration BMP designed as a retrofit project, whereas a stormwater treatment and flow control BMP/facility is used to meet Minimum Requirements in Appendix 1 and has specific inspection and maintenance requirements contained elsewhere in the Permit. As a result, it will be important for O&M section compliance purposes to know where these latter features are located.

Receiving Waterbody or receiving waters. Proposed definition:

Receiving waterbody or receiving waters means naturally and/or reconstructed naturally occurring surface water bodies, such as creeks, streams, rivers, lakes, wetlands, estuaries, and marine waters, or ground water, to which a MS4 discharges.

Receiving waters is intended as a sub-set of waters of the state, no expansion of permit terms are created nor intended.

6.11.4 Correction of a previous definition to match the use of the term in the Permits.

6.11.5 Proposed changes to Western Washington

Stormwater treatment and flow control BMPs/ facilities. Proposed revised definition:

Stormwater Treatment and Flow Control BMPs/Facilities means detention facilities, **permanent** treatment BMPs/facilities; **and** bioretention, vegetated roofs, and permeable pavements that help meet minimum requirement #6 (treatment), #7 (flow control), or both.

The term *stormwater treatment and flow control BMPs/facilities* was added to the 2013 Permits' *Definitions* section. The 2007 Permits applied various terms to refer to stormwater facilities and BMPs, such as stormwater controls, structural BMPs, stormwater post-construction BMPs, and permanent stormwater treatment and flow control facilities. There was concern that the definition limited the mapping and O&M requirements for BMPs put in place that do not help to meet MR 6, or 7, or both which were required to be mapped and inspected/maintained under the 2007 Permit requirements. The proposed revision is intended to restore mapping and O&M requirements as detention and facilities and permanent treatment BMPs/facilities that were included under the 2007 Permit. The intent to limit the mapping and O&M requirements of permeable pavement, bioretention, and vegetated roofs to those that help to meet MR #6 and 7, or both, is maintained. From the 2011 Fact Sheet, which supports the 2013 Permits:

Although it applies to a broader set of BMPs and facilities, Ecology developed this term in part to clarify the extent to which low impact development (LID) is included in various SWMP minimum performance measures, including mapping. Ecology uses the term to distinguish certain low impact development (LID) BMPs and facilities that have been constructed to help meet treatment and flow control requirements in Appendix 1 from those that do not. The draft Permit requires that the BMPs and facilities that help meet the treatment and flow control requirements must be mapped for maintenance purposes.

This term applies to requirements under mapping (PH I S5.C.2/ WWA PH II S5.C.4), and maintenance of post-construction runoff controls in (PH I S5.C.5/WWA PH II S5.C.6) as well as operations and maintenance in (PH I S5.C.10/WWA PH II S5.C.7).

Stormwater Action Monitoring (SAM). Proposed revised definition:

Stormwater Action Monitoring is the regional stormwater monitoring program for western Washington. This means, for all of western Washington, a stormwater-focused monitoring and assessment program consisting of: status and trends monitoring in small streams and marine nearshore areas, stormwater management program effectiveness studies, and source

identification projects. The priorities and scope for SAM are set by a formal stakeholder group that selects the studies and oversees the program’s administration.

Minor revisions to the definition used for Regional Stormwater Monitoring Program (RSMP) – RSMP was renamed to SAM in 2017.

6.11.6 Edits for consistency with other NPDES stormwater general permits, or for consistency across all three Permits.

6.11.7 Proposed changes to Eastern Washington

The proposed revisions bring more consistency to the terms used in all of the Municipal Stormwater Permits. Consistency in terms promotes better understanding when all share the same language.

Outfall — The proposed definition describes a discharge to surface waters only, instead of waters of the state. Proposed revised definition:

Outfall means a point source as defined by 40 CFR 122.2 at the point where a discharge leaves the Permittee’s MS4 and enters a surface receiving waterbody or surface receiving waters. Outfall does not include pipes, tunnels, or other conveyances which connect segments of the same stream or other surface waters and are used to convey primarily surface waters (i.e., culverts).

New development. This proposal matches the SWMMEW and brings consistency to all three Permits. Proposed revised definition:

New development means land disturbing activities, including Class IV general forest practices that are conversions from timber land to other uses; structural development, including construction or installation of a building or other structure; creation of impervious surfaces; and subdivision, short subdivision and binding site plans, as defined and applied in Chapter 58.17 RCW. Projects meeting the definition of redevelopment shall not be considered new development

Redevelopment. This proposal matches the SWMMEW and brings consistency to all three Permits. Proposed revised definition:

Redevelopment means on a site that is already substantially developed, the replacement or improvement of impervious surfaces, including buildings and other structures, and replacement or improvement of impervious parking and road surfaces that is not part of a routine maintenance activity. (Any new impervious surfaces created by a redevelopment project are subject to the requirements for new development.)

6.12 Appendices

The appendices - where the content is similar or matches - are reordered for consistency across all three Permits. For examples, in the 2013/2014 Permits, all have an Annual Report for cities and counties, but in Phase I, this was appendix 12, in both the Phase II Permits it was appendix 3. Now the Annual Report for cities and counties is in all three Permits is appendix 3.

Table 3: Proposed order of Appendixes for 2019 Permits

	Phase I	W.WA Phase II	E.WA Phase II
APPENDIX 1.	Minimum Technical Requirements for New Development and Redevelopment		
APPENDIX 2.	Total Maximum Daily Load Requirements		
APPENDIX 3.	Annual Report Questions for Cities and Counties		
APPENDIX 4.	Annual Report Questions for Secondary Permittees		
APPENDIX 5	Annual Report Questions for the Port of Seattle and the Port of Tacoma	Annual Report Questions for New Permittees	
APPENDIX 6.	Street Waste Disposal		
APPENDIX 7.	Determining Construction Site Sediment Damage Potential	IDDE Reporting Data and Format	
APPENDIX 8.	Businesses and Activities that are Potential Sources of Pollutants		
APPENDIX 9.	Stormwater Discharge Monitoring		
APPENDIX 10.	Equivalent Programs for Runoff Controls for New and Redevelopment and Construction Sites		
APPENDIX 11.	Annual contribution amounts for regional monitoring		
APPENDIX 12.	Structural Stormwater Controls Project List	IDDE Reporting Data and Format	
APPENDIX 13.	Adaptive Management Requirements		
APPENDIX 14	IDDE Reporting Data and Format		

6.12.1 Appendix 1 – Minimum Technical Requirements for New Development and Redevelopment

See additional discussion in section *Controlling Runoff from New Development, Redevelopment and Construction Sites*.

Appendix 1 is the same in the Western Washington Permits. Eastern Washington's minimum technical requirements are different from western Washington due to geographic and climatic differences in the regions.

6.12.2 Proposed changes to Eastern Washington Appendix 1

Ecology's general approach to changes for Appendix 1 is to simplify where appropriate, and to clarify and improve consistency with the Municipal Stormwater Permits, Construction Stormwater General Permit, and changes proposed in the Draft Stormwater Management Manual for Eastern Washington (released for public comment May 25, 2018-July 25, 2018). Several changes are proposed in the following sections.

Exemptions: Clarifications to Permit language is proposed. Including minor updates to clarify the commercial agriculture exemption and road and parking area preservation/ maintenance exemptions.

Core Element #2: The proposed language is updated to align with the 13 Elements as described in the current Construction Stormwater General Permit (CSWGP). The current CSWGP went into effect May 5, 2017.

No significant changes proposed.

6.12.3 Proposed changes to Western Washington Appendix 1

See additional discussion in section *Controlling Runoff from New Development, Redevelopment and Construction Sites* (PH I: S5.C.5; PH II: S5.C.6) of this Fact Sheet.

Proposed language for Appendix 1 includes those requirements, definitions, and thresholds that Ecology intends the Permittees to adopt into local codes or other enforceable documents and apply to new and redevelopment projects. Most of the proposed changes in Appendix 1 are to clarify the intent of the existing requirements. Ecology's goal for the updated language is improved implementation of the existing Permit requirements.

Text edits were made to refer to BMPs by the specific name and number within the SWMMWW, rather than by referring readers to sections within the SWMMWW. This is a more precise reference style.

While implementing these changes, Ecology also identified the following changes that must be made in order to continue to provide the best environmental protection available:

- **Continuous Simulation Modeling:** The proposed language is updated to be consistent with the latest and most accurate modeling available (e.g. using the 15-minute time step instead of the 1-hour time step).

- **Minimum Requirement (MR) 2:** The proposed language is updated to align with the 13 Elements as described in the current Construction Stormwater General Permit (CSWGP). The current CSWGP went into effect May 5, 2017.
- **MR 5:** The proposed language requires BMP T5.13 (Soil Quality and Depth) when choosing to use the LID Performance Standard to meet MR 5 for MR 1-5 projects. The 2014 SWMMWW text only required BMP T5.13 with the LID performance standard for MR 1-9 projects. Ecology considers this an important BMP essential to providing environmental protection and is proposing this revision to correct this oversight with this update.
- **MR 7:** The proposed language is updated to ensure that a TDA discharging to a marine waterbody meets all exemption requirements before it can be determined to be Flow Control exempt. This will ensure the same protection of waterways between the TDA discharge point and the marine waterbody as is provided with other types of exempt waterbodies.

Section 1: Exemptions

Minor changes to clarify the language.

Specifically, in the “Pavement Maintenance” subheading, edits were made to simply define the type of surface, and then direct readers to the thresholds in Section 3. Ecology found through user feedback that the previous text, which stated which MRs applied for those surfaces, was not as clear.

Section 2: Definitions

Minor changes for consistency with the SWMMWW.

The following definitions were updated by more than minor text edits:

New impervious surface (new definition)

A surface that is:

- changed from a pervious surface to an impervious surface (e.g. resurfacing by upgrading from dirt to gravel, asphalt, or concrete), or
- upgraded from gravel to asphalt or concrete, or
- upgraded from a bituminous surface treatment (“chip seal”) to asphalt or concrete.

This definition already existed in the “Pavement Maintenance” subheading from Section 1. Ecology found through user feedback that this term is often misunderstood, and has added it to the glossary to aid in finding this definition.

Threshold Discharge Area (figure updated)

Ecology has updated the figure that accompanies this unchanged definition. The updated figure adds clarity for TDA delineation on roadway or other long linear projects.

Vehicular Use (updated)

Ecology updated this definition to state that “sidewalks not subject to drainage from roads for motor vehicles” are not subject to vehicular use.

Section 3: Applicability of the Minimum Requirements

Subheading 3.5 was determined to be redundant and removed. After detailed review, Ecology concluded that the information provided in subheading 3.5 was repetitive to the information provided more prominently in Section 7. The information was consolidated into Section 7.

Additional changes for clarity include:

- Subheading updated from “Thresholds” to “Minimum Requirement Thresholds”.
- Subheadings 3.2 and 3.3 were updated to clarify that they are discussing PROJECT Thresholds, as opposed to the TDA thresholds that are discussed in MRs 6 and 7.
- In subheading 3.3, the text was revised text from “project limits” to “same site” to use a term that is defined and has the same meaning.
- In subheading 3.4, the text was updated to refer to the “Site”. The definition of “Site” already matches what was described in the text.

Section 4: Minimum Requirements

Minimum Requirement #1

No changes.

Minimum Requirement #2

The proposed language is updated to align with the 13 Elements as described in the current Construction Stormwater General Permit (CSWGP). The current CSWGP went into effect May 5, 2017.

Text in Element 6 and Element 8 was revised to reflect modeling using the latest continuous simulation modeling software, specifically the use of 15 minute time steps rather than the results from a one hour time step increased by a factor of 1.6.

Additional specific edits for clarity include:

- Revised text to use the full/correct name of the CSWGP.
- Revised subheading as “Project” Thresholds to clarify that these are thresholds determined at the project level, not at the TDA level like MRs 6 and 7.
- Revised text to consistently refer to “Construction SWPPP” and “Construction SWPPP Elements.”
- Element 9d: removed "such as a closed loop recirculation or upland application." Neither of these are an on-site treatment system, which is referenced in the first half of the sentence.

- Element 9f: identified recycled concrete stockpiles as a source of contamination by pH modifying sources.
- Element 9i: added food grade vinegar as an option to adjust pH.
- Element 13a: updated to clarify that the element applies to all LID BMPs, not just bioretention and rain gardens.
- Element 13b: updated to apply to all LID BMPs that infiltrate.

Minimum Requirement #3

No changes.

Minimum Requirement #4

No changes.

Minimum Requirement #5

The proposed language requires BMP T5.13 (Soil Quality and Depth) when choosing to use the LID Performance Standard to meet MR 5 for MR 1-5 projects. The 2014 SWMMWW text only required BMP T5.13 with the LID performance standard for MR1-9 projects. BMP T5.13 may be feasible for projects applying MR 1-5 and must be considered. Ecology is proposing to correct this oversight with this update.

Additional specific edits for clarity include:

- Removed subheading title “Applicability” while maintaining the content of that section. MRs 5, 7, and 8 were the only ones with this subheading, although all the MRs had similar text.
- Removed “on-site” in the introduction– if using the LID performance standard, BMPs may not be “on site” (LID) BMPs.
- Removed “project” in the introduction – text revised to the more general term "thresholds" since the thresholds, as explained further in the text, relate to multiple things (project, parcel, etc.). This changes makes the introductory text more consistent between MRs 5, 6, 7, and 8.
- Proposed text clarifies what Ecology means by a Flow Control exempt project, as opposed to a Flow Control exempt TDA described in MR 7.
- Ecology revised the structure of this MR for clarity. Revisions include clear subheading titles, three project types (MR1-5, MR1-9, and Flow Control Exempt), new subheadings for the two compliance methods (the List Approach and the LID Performance Standard), and a List #3 for Flow Control exempt projects. List 3 is not new, it was previously described within the text of MR 5 and has been restructured to be included as a list. The lists are now presented in a table format.

Minimum Requirement #6

Specific edits for clarity include:

- Added an introduction statement for consistency in layout with the other MRs.
- Revised the subheading from “Project Thresholds” to “TDA Thresholds” to be more precise with the Threshold language within this MR. The MR had relied on TDA Thresholds in the last permit cycle, but the title did not reflect that. Further, this seeks to eliminate confusion with the “Project Thresholds” identified in Section 3.
- Added introduction text within the TDA Thresholds subheading to clarify the steps needed to determine the requirements for each TDA. This text matches text from MRs 7 and 8.
- Updated the existing text within the TDA Thresholds subheading for clarity.
- Revised subheading to “Runoff Treatment Performance Goal Thresholds” for consistency with terms.
- Updated the Runoff Treatment Performance Goal Thresholds text for consistency with the SWMMWW. This text was created based on existing text from 2 places in the manual and the Permit. The language was merged so that it is consistent in both documents.
- Runoff Treatment Performance Goal Thresholds: Basic Treatment – removed text saying that basic treatment is not needed if infiltrating through soils that meet the soil suitability for infiltration treatment, because infiltrating through appropriate soil and subsurface conditions meet Basic Treatment.
- Runoff Treatment BMP Sizing – subheading name updated for consistency in terms.
- Runoff Treatment BMP Sizing –paragraph added to introduce the concept that Runoff Treatment BMPs are sized by either a volume or flow rate, depending on the BMP.
- Term changed from "water quality design storm volume" to "water quality design volume". The volume is not tied to a specific storm, but ensuring that a percentage of the runoff file gets treatment. This better matches the term "water quality design flow rate."
- The Water Quality Design Volume language was updated to more clearly define the two ways Ecology allows the volume to be calculated.
- The Water Quality Design Flow Rate text was updated for consistency in terms and clarity.
- Additional Requirements – removed second half of sentence saying that untreated stormwater may be infiltrated through soils that meet the soil suitability for infiltration treatment. As noted above, this is a circular statement, because by infiltrating through soils that meet the soil suitability for infiltration treatment, you are getting Runoff Treatment.

Minimum Requirement #7

The proposed language is updated to ensure that a TDA discharging to a marine waterbody meets all exemption requirements before it can be determined to be Flow Control exempt. This will ensure the same protection of waterways between the TDA discharge point and the marine water body as is provided with other types of exempt waterbodies.

The proposed language is updated to require the approved continuous runoff model for the 2019-2024 Permit cycle. Specifically, text in the TDA Thresholds subheading was revised to eliminate the option of using a threshold of a 0.10 cfs increase using a one hour time step. The approved continuous runoff model uses the other existing threshold that allows a 0.15 cfs increase with 15 minute time steps.

Additional specific edits for clarity include:

- Removed “Applicability” subheading for consistency with other MRs. Updated into text for consistency with other MRs.
- Added subheading for TDA Exemption. Minor revisions to TDA exemptions text for clarity.
- Removed text “If the discharge is to a stream that leads to a wetland, or to a wetland that has an outflow to a stream, both this minimum requirement (Minimum Requirement #7) and Minimum Requirement #8 apply.” This text was in the exemption subheading, and it is not an exemption. Also, it is giving direction for MR8, which is not appropriate in MR7.
- Changed subheading “thresholds” to “TDA Thresholds” to eliminate confusion with the “Project Thresholds” identified in Section 3.
- Added introduction text within the TDA Thresholds subheading to clarify the steps needed to determine the requirements for each TDA. This text matches text from MRs 6 and 8.
- Updated existing TDA Thresholds text for clarity.
- Removed text from footer and added it to main text, stating that the 0.15 cfs increase should be from existing condition, not historic/forested. Many users missed this text when it was in the footer.
- Updated heading to “Flow Control Performance Standard” – this creates consistent style with MR5’s “LID Performance Standard”.
- Changed “available” to “provided” – the project proponent must provide the info described.
- Changed “WWHM” to “approved continuous simulation model” – Ecology does not want to name specific models. Ecology will name the specific approved models within the SWMMWW.
- Removed text saying the performance standard is waived for sites that infiltrate all runoff – it is circular. The requirement isn’t waived, it is met.

Subheading updated to “Alternative Flow Control Performance Standard” for consistency in terms.

Minimum Requirement #8

Specific edits for clarity include:

- Removed “Applicability” subheading, while maintaining the content. Updated intro text for consistency with other MRs.
- Revised the subheading from “Project Thresholds” to “TDA Thresholds” to eliminate confusion with the “Project Thresholds” identified in Section 3.

Minimum Requirement #9

No changes.

Sections 5: Adjustments

No changes.

Sections 6: Exceptions/Variations

No changes.

Section 7 – Altering the Minimum Requirements with Basin Plans

Specific edits for clarity include:

- Revising the section title from “Basin/Watershed Planning” to “Altering the Minimum Requirements with Basin Plans.” This was done while consolidating the information from Section 3.5 into this Section 7.
- Text edits for clarity and consolidation with Section 3.5 from the previous Permit.

6.12.4 Appendix 2 – Total Maximum Daily Load Requirements

See discussion of Special Condition S7 *Total Maximum Daily Load Requirements*.

6.12.5 Appendix 3 – Annual Report Questions for County, Town and City Permittees

See discussion of Special Condition S9 *Reporting Requirements*. Annual Report questions for cities and counties was Appendix 12 in the 2013 Phase I Permit.

6.12.6 Appendix 4 – Phase II Only - Annual Report Questions for Secondary Permittees

See discussion of Special Condition S9 Reporting Requirements.

6.12.7 Appendix 5 - Phase II Annual Report Form for New Permittees (Eastern and Western Washington)

This Annual Report form was Appendix 8 in the 2013 W.WA Phase II Permit. This is new for the E.WA Phase II Permit. See discussion of Special Condition S9 Reporting Requirements.

Appendix 5 used to hold the Notice of Intent form. This form will be available online at Ecology’s website. Starting on December 21, 2020, Ecology must follow EPA’s electronic reporting rule and accept electronic Permit applications in order to provide the required reports to EPA. The paper application found in Appendix 5 of the 2013/2014 Permits will be converted to an electronic application, similar to the electronic Annual Report process.

6.12.8 Appendix 5 - Phase I Only – Annual Report Questions the Port of Seattle and the Port of Tacoma

This was Appendix 3 of the 2013 Phase I Permit. See discussion of Special Condition **Error!**
Reference source not found.

6.12.9 Appendix 6– Street Waste Disposal

No changes proposed for Appendix 6.

6.12.10 Appendix 7 – E.WA Phase II only - IDDE Reporting Data and Format

This appendix is provided in all three Permits, but with different appendix numbers. Ecology may remove this appendix when the WQWebIDDE is completed, prior to issuance of the Permits. It is included to document the information required to submit as well as the format for the Annual Report submittal, as described in the IDDE section.

6.12.11 Appendix 7 – Western Washington only - Determining Construction Site Sediment Damage Potential

No changes proposed for Appendix 7.

6.12.12 Appendix 8 – Western Washington only - Businesses and Activities that are Potential Sources of Pollutants

This appendix has been updated to reference NAICs industry supersector codes. The crossover from the '87 SIC major group numbers to the 2017 NAICs supersector group numbers isn't exact, however Ecology is only using these groups as a general description of the types of businesses that should be inspected under S.5.C.8 in both the Phase I and Phase II Permits. Group descriptions have also been updated to more closely align with NAICs industry supersector groups listed on the Bureau of Labor Statistics website⁵⁵. It is a new appendix for the W.WA Phase II Permit.

6.12.13 Appendix 9 - Western Washington only – Stormwater Discharge Monitoring

This section in both the Phase I and Phase II Permits defines the approach for meeting individual stormwater discharge monitoring requirements for Permittees in western Washington who choose not to participate in SAM, the regional stormwater monitoring program. See fact sheet language for S8. Monitoring and Assessment for more information.

Changes from the 2013 Permits:

This appendix was updated to reflect changes in laboratory methods and to cite the updated references for the standard protocols that were developed in 2009 to ensure consistent and quality implementation of the monitoring. Based on lessons learned during prior monitoring,

flexibility was granted for each Permittee to identify the appropriate antecedent dry period condition for their local conditions.

Based on Ecology’s analysis of the Phase I discharge monitoring data collected for the 2007 Permit, these poorly performing and/or very rarely detected parameters have been removed from the required stormwater sample collection and analyses: mercury, toxicity (WET), 2,4-D, carbaryl, chlorpyrifos, NWTPH gas-fraction, and BTEX (benzene, toluene, ethyl-benzene, and xylene).

Ecology has continued to review scientific study findings and has determined that the following new parameters should be added to the in-line stormwater solids screening: dichlobenil, phenolics, phthalates, polybrominated diphenyl ethers (PBDEs), and a lower resolution method for PCBs.

6.12.14 Appendix 10 – Western Washington only - Equivalent Programs for Runoff Controls for New and Redevelopment and Construction Sites

The draft Permits require Permittees to continue to implement the ongoing programs established during the current (2013) Permit term. Permittees would be required to modify the local program by the deadline proposed for adoption and implementation of the draft revisions to Appendix 1. Appendix 10 describes the needed changes to a local program adopted under the 2013 Permits. Appendix 10 is new for WWA Phase II and lists the significant changes to Appendix 1. Phase II Permittees are not required to submit their local programs to Ecology for review and approval. Phase I Permittees are required to submit their local programs to ensure equivalency with Appendix 1 and the SWMMWW.

In the Phase I Permit, Appendix 10 has three Parts.

- Part 1 - lists of Ecology-approved local programs that meet the requirements for controlling runoff.
- Part 2 – lists the significant changes to Appendix 1.
- Part 3 – is the placeholder section which will list the local programs approved to meet the 2019 (or Part 2) local program requirements.

Because there are so few changes, Ecology created a streamlined Appendix 1 and manual equivalency process for Phase I as described below.

There were three main categories of changes that were considered enhancements that are required to be included in the 2019-2024 stormwater programs to be equivalent with Ecology’s Appendix 1/SWMMWW update:

1. Adjustments to align with the Construction Stormwater General Permit (CSWGP),
2. Incorporation of an updated continuous runoff model that is more suitable to LID implementation, and
3. Updating the requirement for sites only subject to Minimum Requirements #1-5 choosing the LID Performance Standard to include Soil Quality and depth (BMP T5.13).

The focus of the required changes were where those changes were critical to ensuring that the practices put in place would provide an advancement in the level of protection provided equivalent to the 2019-2024 Permits and 2019 SWMMWW. Below are some examples where the new language is recommended, but not required to ensure equivalency.

Some construction BMPs that can be used to meet Minimum Requirement #2, were edited and some new BMPs were added in the 2019 SWMMWW. The 2019 SWMMWW BMPs may be useful to projects with compatible activities but are not required to ensure that a municipality complies with Minimum Requirement #2. The 2014 guidance is still valid and should result in the same level of protection.

There were also changes and additions to the Source Control BMPs within the 2019 SWMMWW, used to satisfy Minimum Requirement #3. Some of these additions provide guidance targeted to categories of pollutant sources not similarly categorized in the 2014 SWMMWW. While those pollutant sources were not similarly categorized in the 2014 SWMMWW, Ecology expects that the same level of source control can be attained using the information within similar categories within the 2014 SWMMWW.

In contrast, Minimum Requirements 5, 6, 7 and 8 in Appendix 1 of the Permits rely on the approved continuous runoff model to ensure the level of protection described. Ecology's enhancement for the 2019-2024 Permit cycle uses considering models that employ Ecology's approved LID algorithms and the accompanying 15-minute time step. These changes impact how the Minimum Requirements will be met and this change is required to ensure an equivalent program. The table in Appendix 10 indicates where those changes need to be made.

The 2014 SWMMWW has several reference to a 1-hour continuous runoff model option. The references do not need to be deleted since the approved model does not use that time step, so the option will simply not be used. Jurisdictions may choose to update their guidance to avoid confusion, but have recourse within the added enhancements (as shown in the table above) to indicate that the approved continuous runoff model only uses the 15-minute time step.

6.12.15 Appendix 11 – Western Washington only - Annual Contribution Amounts for Regional Monitoring

This new section in both the Phase I and W. WA Phase II 2019 Permits defines cost-share account contribution amounts required by Permittees in western Washington and WSDOT who choose to participate in SAM, the regional stormwater monitoring program. This appendix replaces the tables that were included in S8.B and S8.C and S8.D in the 2013 Permits. See fact sheet language for S8. Monitoring and Assessment for more information.

6.12.16 Appendix 12 – W.WA Phase II only - IDDE Reporting Data and Format

This appendix is provided in all three Permits, but with different appendix numbers. Ecology may remove this appendix when the WQWebIDDE is completed, prior to issuance of the Permits. It is included to document the information required to submit as well as the format for the Annual Report submittal, as described in the IDDE section.

6.12.17 Appendix 12 - Phase I only - Structural Stormwater Controls Project List

For general information about Appendix 12 see SSC section of this Fact Sheet. This was Appendix 11 in the 2013 Phase I Permit. The appendices in the Permits were reordered to align the Permits more consistently.

Ecology requires Permittees to include an updated list of planned individual projects scheduled for implementation during the term of the Permit with their Annual Reports. The proposed Appendix 11 provides a standardized reporting format that allows for transparent benefit and incentive point calculations and limited project details, such as costs and funding sources.

Ecology intends the SSC Program's defined level of effort as reflected in Retrofit Incentive Points to achieve the following goals:

- Allow for comparisons of runoff treatment and hydrological benefits. Benefits from LID BMPs are quantified for hydrological benefit separately from flow control facilities.
- Allow for comparisons of project types across jurisdictional landscapes. This acknowledges that Washington's Phase I Permittees consist of cities and unincorporated counties.
- Provide a standardized means to quantify the benefits each project and each jurisdiction achieves.
- Count the following types of projects within the structural controls requirement:
 - Regional facilities that provide hydrologic or treatment benefit for existing MS4 discharges that is not otherwise required. Regional facilities that do not have a system to credit new development and redevelopment projects will fully qualify. Regional facilities that provide for use of fee-in-lieu, minimum technical requirement transfer, or other new/redevelopment-benefitting program, only partially qualify under the SSC Program; the portion of the regional facility that is preserved to address existing MS4 service area (such as roadways) may be counted in the SSC program.
 - The retrofit of existing MS4 runoff by providing additional hydrologic or treatment capacity in a stormwater facility being constructed as part of a new or redevelopment project (i.e. those required under a development project approval but also providing additional new treatment or flow control). The portion of the project serving the existing area, not otherwise required to be addressed, will qualify for the SSC Program.
 - Projects not directly related to stormwater (i.e. not driven by stormwater capital planning) but providing stormwater benefits. This includes forest protection (i.e., acquisition), forest conservation easements, forest cover restoration, and riparian buffer restoration.
 - Operations and maintenance projects with large capital construction costs and projects that go beyond Permit O&M requirements (ex. whole system pipeline cleaning, or intensive facility maintenance/upgrades).
 - Source control work that goes beyond source control Permit requirements.

6.12.18 Appendix 13 – Phase I only- Adaptive Management Requirements

Appendix 13 was added to the Phase I Permit during the Permit modification in 2016. The appendix incorporates requirements in response to a significant long-term MS4 adaptive management response effort under Special Condition S4.F.3. Appendix 13 is applicable to one Permittee: the City of Seattle. Ecology expects that in the future, as additional significant adaptive management response plans applying to other municipal stormwater Permittees and/or other geographic areas are developed, they will become incorporated into Appendix 13 of the Phase I Permit, or similar Municipal Stormwater Permit appendices, as appropriate.

The proposed Appendix 13 contains requirements specific to the City of Seattle’s MS4 discharges to the Lower Duwamish Waterway (LDW) in accordance with Special Condition S4.F.3. The City of Seattle has developed a comprehensive Source Control Implementation Plan (SCIP) to control sources of sediment pollution in the LDW to support the pending sediment Superfund cleanup. Ongoing relevant and applicable aspects of the SCIP are municipal stormwater adaptive management response actions described in Appendix 13 of the Permit. This Permit also includes the requirement to submit a SCIP update to reflect an updated assessment of data and priorities, and identify additional projects for the 2021 – 2026 timeframe.

6.12.19 Appendix 14 – Phase I only – IDDE reporting data and format

This appendix is provided in all three Permits, but with different appendix numbers. Ecology may remove this appendix when the WQWebIDDE is completed, prior to issuance of the Permits. It is included to document the information required to submit as well as the format for the Annual Report submittal, as described in the IDDE section.

¹ Pickett S.T.A et al., 2011. *Urban ecological systems: Scientific foundations and a decade of progress*. Journal of Environmental Management, 92:331-362.

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Appendix A: Citation List

This citation list contains references for data, factual information, studies, or reports on which the agency relied (RCW 34.05.370(f)).

At the end of each citation is a number in brackets identifying which of the citation categories below the sources of information belongs. (RCW 34.05.272). These are the same citations as the end notes used above, but this list includes the citation category.

Citation Categories

- 1 Peer review is overseen by an independent third party.
- 2 Review is by staff internal to Department of Ecology.
- 3 Review is by persons that are external to and selected by the Department of Ecology.
- 4 Documented open public review process that is not limited to invited organizations or individuals.
- 5 Federal and state statutes.
- 6 Court and hearings board decisions.
- 7 Federal and state administrative rules and regulations.
- 8 Policy and regulatory documents adopted by local governments.
- 9 Data from primary research, monitoring activities, or other sources, but that has not been incorporated as part of documents reviewed under other processes.
- 10 Records of best professional judgment of Department of Ecology employees or other individuals.
- 11 Sources of information that do not fit into one of the other categories listed.

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