

FACT SHEET

For the
National Pollutant Discharge Elimination System (NPDES) and State Waste
Discharge General Permit for Washington State Department of Transportation's
Municipal Separate Storm Sewers

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

December 5, 2018

Revised March 6, 2019

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I. INTRODUCTION

This Fact Sheet accompanies the proposed *Draft of Washington State Department of Transportation NPDES and State Waste Discharge Permit for Municipal Stormwater, December 5, 2018*. The Fact Sheet serves as the documentation of the legal, technical, and administrative decisions the Washington State Department of Ecology (Ecology) has made in the process of developing and issuing this permit.

This permit authorizes the discharge of stormwater to waters of the State of Washington from municipal separate storm sewers that are owned or operated by Washington State Department of Transportation (WSDOT). WSDOT land uses covered include highways, ferry terminals, rest areas, park and ride lots, maintenance facilities, vector decant and street sweepings facilities, and winter chemical storage facilities. As required by paragraph 402(p)(3) of the Clean Water Act, this permit must effectively prohibit non-stormwater discharges into storm sewers that discharge to surface waters and apply controls to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP). As authorized by the Revised Code of Washington, RCW 90.48.030 and RCW 90.48.162, Ecology must take action through the issuance of this permit to control impacts of stormwater discharges to all waters of Washington State, including ground waters, unless the discharges are authorized by another regulatory program.

This permit does not directly regulate 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. These types of discharges may be regulated by local or other state requirements if they discharge to municipal separate storm sewers. This permit authorizes the municipal separate storm sewer to discharge stormwater that comes from construction sites or industrial activities under certain conditions.

On March 6, 2014, Ecology issued the current municipal separate storm sewer system (MS4) permit for WSDOT and the permit became effective on April 5, 2014. The 2014 permit expires on April 5, 2019, and the proposed public draft permit is scheduled to be issued in 2019. Edits and formatting changes have been made to the 2019 permit which are intended to make the 2019 permit more consistent with the other municipal stormwater permits Ecology has issued to Phase I and II communities in the state. Specifically, Section S5 of the 2019 permit and Chapter 3 of WSDOT's Highway Runoff Manual (HRM) will include actions and activities that are designed to reduce and prevent the discharge of pollutants from MS4 to the maximum extended practicable to meet the state AKART requirements and to protect water quality. The permit requires WSDOT to adopt and implement a stormwater management program plan (SWMP) which details how WSDOT plans to achieve compliance with the permit requirements. WSDOT will annually update their SWMP and make it available to the public for review and comment.

II. PUBLIC INVOLVEMENT OPPORTUNITIES

Public Comment Period

Ecology invites public comments on the proposed Draft Permit, Fact Sheet and Appendices from December 5, 2018 until **11:59 PM, January 18, 2019**. Ecology welcomes all comments on these

formal draft documents. Ecology requests the following information be included with any comments:

- The specific language in the permit that is the subject of the comment. Please include the Special Condition number and page number.
- The basis for the comment, and in particular the legal, technical, administrative, or other basis for the concern.
- A suggested alternative to address the concern.

Submit electronic comments online through <http://ws.ecology.commentinput.com/?id=fHamY>, or written comments to:

Foroozan Labib
Department of Ecology
Water Quality Program
PO Box 47696
Olympia, WA 98504-7696

Ecology will host a public workshop followed by a public hearing on the Draft Permit during the public comment period at:

Friday, January 11, 2019, at 1:30pm
Department of Ecology
300 Desmond Drive SE
Lacey, WA 98503
(360) 407-6600

The purpose of the workshop is to explain how the permit has changed from the 2014 permit and to answer questions. Ecology accepts formal oral testimony or comments on the Draft Permit or Fact Sheet at a public hearing following the public workshop.

Ecology will issue the final permit after receiving and considering all public comments. Ecology expects to issue the final permit in March 2019. The permit will become effective 30 days after issuance. Ecology will send a copy of the Notice of Issuance to all persons who submitted written comments.

When Ecology issues the final permit, the summary and response to comments will become part of the file on the permit and parties submitting comments will receive a notice on how to obtain copies of the final permit and Ecology's response to comments. Ecology will issue its response to comments and the resultant changes to the proposed permit as an appendix to the Fact Sheet titled Response to Comments.

You may download a copy of the final and draft permit and fact sheet at <https://ecology.wa.gov/WSDOTpermit>. You may request copies of the permit or fact sheet from the Water Quality Program reception at (360) 407-6600.

Please direct questions about the permit or fact sheet to Foroozan Labib at foroozan.labib@ecy.wa.gov, or (360) 407-6439.

The Stormwater Problem

Stormwater is the leading contributor to water quality pollution in our urban waterways and is also Washington's fastest growing water quality problem. Pollutants in stormwater can cause a wide range of impacts. Some pollutants such as metals, oil and grease, and organic compounds carried by stormwater are toxic to aquatic organisms if concentrations are high enough. Silt and fine particles in stormwater runoff cause tissue abrasion and gill clogging in fish, they reduce light and impair algal growth, they smother fish spawning habitat, and they transport other pollutants. Stormwater and sediments carried by stormwater contribute nutrients to surface waters that can accelerate eutrophication of surface waters and result in nuisance algal blooms, reduce clarity, produce odors and degrade drinking water quality. Stormwater runoff from impervious surfaces can increase the temperature of rain water and pose problems to fish and invertebrates that are sensitive to temperature and cannot survive in overly warm water bodies.

Impervious surfaces in urban areas increase the quantity and peak flows of runoff, which in turn cause hydrologic impacts such as scoured streambed channels, in-stream sedimentation and loss of habitat. Furthermore, because of the volume of runoff, mass loads of pollutants carried by stormwater significantly degrade water quality.

Impacts from stormwater are highly site-specific and vary geographically due to impervious surfaces, local land use conditions, hydrologic conditions, and the type of receiving water.

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

- **Human Health:** In general, untreated stormwater is unsafe. It contains bacteria, toxic metals, and organic compounds. Untreated stormwater is not safe for people to drink, and is not recommended for swimming.
- **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 seeping into the ground can contaminate aquifers that are used for drinking water.
- **Salmon Habitat:** In western Washington urban stormwater impairs streams that provide salmon habitat. Impervious surfaces cause higher winter stormwater flows that erode stream channels and destroy spawning beds. Also, because more water flows offsite rather than seeping into the ground during the wet season, streams lose summertime base flows, drying out habitat needed for salmon rearing.
- **Shellfish Industry:** The State's multimillion dollar shellfish industry is increasingly threatened by closures due to contaminants carried by stormwater.
- **Degraded Water Bodies:** Across Washington State changes in land cover resulting from residential, commercial and industrial land development has drastically altered, stream channels in urban areas. Fish resources, and other beneficial uses, have been and will

continue to be severely degraded, and in many cases permanently lost, due to the impacts of urban land development.

Characterization of Stormwater

Hydraulic impacts and the characterization of pollutants vary but can be generalized by land uses such as residential, commercial, industrial and open space.¹ In general, the wet season's first flush rains carry the most pollutants to receiving waters, the wettest months are October through May.

Many pollution sources contaminate stormwater including land use activities, operation and maintenance activities, illicit discharges and spills, atmospheric deposition, and vehicular traffic conditions. Many of these sources are not under the direct control of WSDOT. Table 1 lists sources of pollutants for several typical stormwater pollutants.

¹ Pitt et al 2004, *The National Stormwater Quality Database*, <http://www.cwp.org>

Table 1: Common Pollutants in Stormwater and Some Potential Sources²

Pollutant	Potential Sources
Lead	Motor Oil, Transmission Bearings, Gasoline ³
Zinc	Motor Oil, Galvanized Roofing, Tire Wear, Down Spouts
Cadmium	Tire Wear, Metal Plating, Batteries
Copper	Brake Linings, Thrust Bearings, Bushings
Chromium	Metal Plating, Rocker Arms, Crank Shafts, Brake Linings, Yellow Lane Strip Paint
Arsenic	ASARCO Smelter, Fossil Fuel Combustion
Bacterial/Viral Agents	Domestic and Wild Animals, Septic Systems, Animal & Manure Transport
Oil & Grease	Motor Vehicles, Illegal Disposal of Used Oil
Organic Toxins	Pesticides, Combustion Products, Petroleum Products, Paints & Preservatives, Plasticizers, Solvents
Sediments	Construction Sites, Stream Channel Erosion, Poorly Vegetated Lands, Slope Failure, Vehicular Deposition, Sanding Operations
Nutrients	Sediments, Fertilizers, Domestic and Wild Animals, Septic Systems, Vegetative Matter
Heat	Pavement Runoff, Loss of Shading Along Streams
Oxygen Demanding Organics	Vegetative Matter, Petroleum Products
PAHs	Motor oil, tire wear, vehicle exhaust, coal-tar based sealants

Oregon has collected and characterized data on the quality of stormwater discharges. The rainfall patterns and land cover characteristics in Oregon are sufficiently similar to Washington to provide an indication of the general quality of stormwater discharges in Washington. Table 2 shows the mean of the “event mean concentrations” (EMCs) of common stormwater pollutants for different land use categories.⁴ The EMC is defined as the total constituent mass discharge divided by the total runoff volume. EMCs are typically based on flow weighted composite samples. Total phosphorus concentrations for comparative purposes only, since phosphorous concentrations were not found to be consistent among similar land use stations. Total phosphorous concentrations may be more affected by soil type than by land use.

² Adapted from a number of sources: Novotny, V. and G. Chesters, 1981. *Handbook of Nonpoint Pollution*. Van Nostrand Reinhold Company, New York, p. 322. Galvin D. and R. Moore, 1982. *Toxicants in Urban Runoff*, METRO Toxicant Program, Report #2. METRO, Seattle, pp 3-89 - 3-92. PTI Environmental Services, 1991. *Pollutants of concern in Puget Sound*. Puget Sound Estuary Program, U.S. EPA, Seattle, pp 47-51. URS et al, 1988. City of Puyallup, Stormwater Management Program. *Technical Memorandum WQ-1: Stormwater Quality Issues*. Table 1.

³ Although lead is no longer an additive to gasoline, it is still present in trace amounts and remaining lead on the ground is picked up by stormwater runoff.

⁴ Strecker et al. 1997. *Analysis of Oregon Urban Runoff Water Quality Monitoring Data Collected from 1990 to 1996*, prepared for the Oregon Association of Clean Water Agencies, Table 3-2.

Table 2: Land Uses Mean Concentrations for Selected Pollutants

Oregon Urban Runoff Water Quality Data					
Land Use	TSS mg/l	Total Cu mg/l	Total Zn mg/l	Dissolved Cu mg/l	Total P mg/l
In-pipe Industrial	194	0.053	0.629	0.009	0.633
Instream Industrial	102	0.024	0.274	0.007	0.509
Transportation	169	0.035	0.236	0.008	0.376
Commercial	92	0.032	0.168	0.009	0.391
Residential	64	0.014	0.108	0.006	0.365
Open	58	0.004	0.025	0.004	0.166

The National Stormwater Quality Database (NSQD)⁵ collected and evaluated data from a representative number of municipal stormwater permit holders across the country. To date it serves as the largest urban stormwater database ever developed.

Notable observations from the NSQD include the following:

- Preliminary statistical analyses found significant differences among land use categories for all pollutants. The National Urban Runoff Program (NURP) findings show no significant differences in urban runoff concentrations as a function of common urban land uses (EPA, 1983).
- Freeway locations generally had the highest median values, except for phosphorus, nitrates, fecal coliforms, and zinc.
- The industrial sites had the highest reported zinc concentrations.
- Total Kjeldahl Nitrogen (TKN), copper, lead, and zinc observations are lowest for open space areas.
- Lead concentrations, as expected, have decreased by an order of magnitude over the last 20 years, largely assumed to be the result of instituting unleaded gasoline regulations.
- Nutrient concentrations between NSQD and NURP show relatively similar data..

Tables 3 and 4 from the NSQD are provided to give an indication of the general quality of stormwater discharges for a broader range of parameters than the Oregon data set.

⁵ Pitt et al 2004, *The National Stormwater Quality Database*

Table 3: Median Values and EMCs for Selected Parameters in the NSQD, Version 1.0

Parameter	Overall	Residential	Commercial	Industrial	Freeways	Open Space
Area (acres)	56	57.3	38.8	39	1.6	73.5
% Imperv.	54.3	37	83	75	80	2
Precip. Depth (in)	0.47	0.46	0.39	0.49	0.54	0.48
TSS (mg/L)	58	48	43	77	99	51
BOD5 (mg/L)	8.6	9	11.9	9	8	4.2
COD (mg/L)	53	55	63	60	100	21
Fecal Coliform (mpn/100 mL)	5081	7750	4500	2500	1700	3100
NH3 (mg/L)	0.44	0.31	0.5	0.5	1.07	0.3
N02+NO3 (mg/L)	0.6	0.6	0.6	0.7	0.3	0.6
Nitrogen, Total Kjeldahl (mg/L)	1.4	1.4	1.6	1.4	2	0.6
Phos., filtered (mg/L)	0.12	0.17	0.11	0.11	0.2	0.08
Phos., total (mg/L)	0.27	0.3	0.22	0.26	0.25	0.25
Cd, total (ug/L)	1	0.5	0.9	2	1	0.5
Cd, filtered (ug/L)	0.5	ND	0.3	0.6	0.68	ND
Cu, total (ug/L)	16	12	17	22	35	5.3
Cu, filtered (ug/L)	8	7	7.6	8	10.9	ND
Pb, total (ug/L)	16	12	18	25	25	5
Pb, filtered (ug/L)	3	3	5	5	1.8	ND
Ni, total (ug/l)	8	5.4	7	16	9	ND
Ni, filtered (ug/L)	4	2	3	5	4	ND
Zn, total (ug/L)	116	73	150	210	200	39
Zn, filtered (ug/L)	52	33	59	112	51	ND

ND = not detected, or insufficient data to present as a median value.

Table 4: Summary of Selected Organic Information

	Methylene - chloride (ug/L)	Bis (2- ethylhexyl) phthalate (ug/L)	Di-n- butyl phthalate (ug/L)	Fluor- anthene (ug/L)	Phen- anthrene (ug/L)	Pyrene (ug/L)	Diazinon (ug/L)	2, 4-D (ug/L)
Number of observations	251	250	93	259	233	249	79	101
% of samples above detection	36	30	16	19	13	14	22	35
Median of detected values	11.2	9.5	0.8	6	3.95	5.2	0.06	3
Coefficient of variation	0.77	1.13	1.03	1.31	1.00	1.24	1.9	0.86

Controlling Stormwater Discharges

Stormwater quality is difficult to manage because discharges are not continuous, highly predictable events. Rather, stormwater discharge depends on weather (i.e., rainfall and snowmelt) and flows intermittently. The range of pollutants in stormwater vary in type and concentrations depending on storm events. Further difficulty in controlling stormwater discharges from roads and highways comes from the large number of conveyance systems where stormwater is being discharged (hundreds or even thousands of outfalls within a highway system is typical). These features of stormwater runoff make it difficult to apply conventional end-of-pipe treatment options to existing discharges.

Three basic control strategies exist for stormwater. First, stormwater managers can prevent pollutants from coming into contact with stormwater by using source control best management practices (BMPs). Second, managers can apply treatment BMPs prior to discharge to surface or ground waters to reduce pollutants in the discharge. Third, managers can control the flow rate of stormwater through flow control BMPs.

Source control BMPs can effectively prevent stormwater contamination. Source control BMPs include diverse activities such as:

- changing vehicle and equipment maintenance activities to prevent the leaking of oil or other fluids;
- design, installing, and maintaining landscapes at rest areas, maintenance facilities etc., to minimize stormwater runoff;
- product replacement or substitution (e.g., replace galvanized downspouts that are sources of zinc contamination with downspouts that are coated with non-polluting materials) at rest areas, maintenance facilities etc.;
- minimizing the removal of forests and native vegetation;

- covering materials and equipment stored outside and exposed to rainfall and runoff; and
- prohibiting or restricting the use of certain chemicals that are causing a pollution problem (e.g., pesticides or phosphorus in watersheds that drain to lakes).

Treatment BMPs include ponds, swales, filtration, and infiltration devices that capture runoff and treat it using physical, biological, and/or chemical processes. The effectiveness and feasibility of treatment BMPs is variable, subject to some debate, and much remains to be learned.

Flow control BMPs usually detain (control release rates) or retain (infiltrate to the ground). Flow control prevents accelerated stream channel erosion and protects wetlands from changes in water elevations.

In summary, the complexity inherent in stormwater discharges and the difficulty of controlling such discharges will require many years to fully implement a program to adequately mitigate or prevent adverse environmental impacts.

Limitations of the Permit in Protecting Water Quality

In developing this permit, Ecology recognizes that permits alone cannot prevent all stormwater impacts and preserve natural resources and their associated beneficial uses. For multiple reasons, the cumulative impact of unregulated stormwater will continue to contribute to water quality degradation.

Ecology is required to implement the federal Clean Water Act and State Water Pollution Control Act. Ecology has developed this draft permit within the framework created by these statutes and has adopted WSDOT's Stormwater Management Program to meet state and federal requirements. In this Fact Sheet, Ecology has documented the rationale for many of the proposed permit requirements. The permit does not address all stormwater management needs associated with highways, ferry terminals, rest areas, park and ride lots, maintenance facilities, vector decant and street sweepings facilities, and winter chemical storage facilities and will not prevent all stormwater impacts. Citizens, state and local governments will need to work together to implement other actions to protect our water bodies.

Recent Regional Efforts

Over time, Ecology intends to inform and improve the stormwater management programs required in the permits by evaluating regional data to better understand the sources and pathways of pollutants and target effective management approaches. In recent years, four major regional efforts briefly discussed in this section have contributed to an understanding of stormwater impacts on the beneficial uses of Washington waters:

- A Stormwater Monitoring Work Group worked for several years to develop recommendations for a comprehensive stormwater monitoring program in Puget Sound.
- Ecology and others issued a 2010 report, *Toxics in Surface Runoff to Puget Sound*⁶, Phase 3 of a study to estimate toxic chemical loadings from surface runoff in the Puget Sound

⁶ Herrera Environmental Consultants, Inc. 2011. *Toxics in Surface Runoff to Puget Sound, Phase 3 Data and Load Estimates*, Washington State Department of Ecology, Olympia, WA.

Basin. The studies began in 2006 and included a multi-partner steering committee of federal, state, and local government agencies, consultants, and reviewers.

- Phase I cities and counties and the ports of Tacoma and Seattle conducted stormwater outfall monitoring as required by the Phase I Municipal Stormwater General Permit and submitted the preliminary data to Ecology.
- A Sediment Phthalates Work Group evaluated information to better understand how phthalates are reaching Puget Sound. The work group identified data gaps and made recommendations in a 2007 report, *Sediment Phthalates Work Group: Summary of Findings and Recommendations*, prepared by the City of Tacoma, the City of Seattle, King County, EPA, and Ecology.

Stormwater Monitoring Work Group

The Stormwater Monitoring Work Group brought together 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, and the various pathways by which those effects are transmitted. The primary task of the Stormwater Monitoring Work Group was to develop the monitoring approach proposed in the Phase I and Western Washington Phase II draft permits for the Puget Sound region. However, in the process of coming to a consensus on monitoring 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 our region. Figure 1, below, 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 approach.⁷

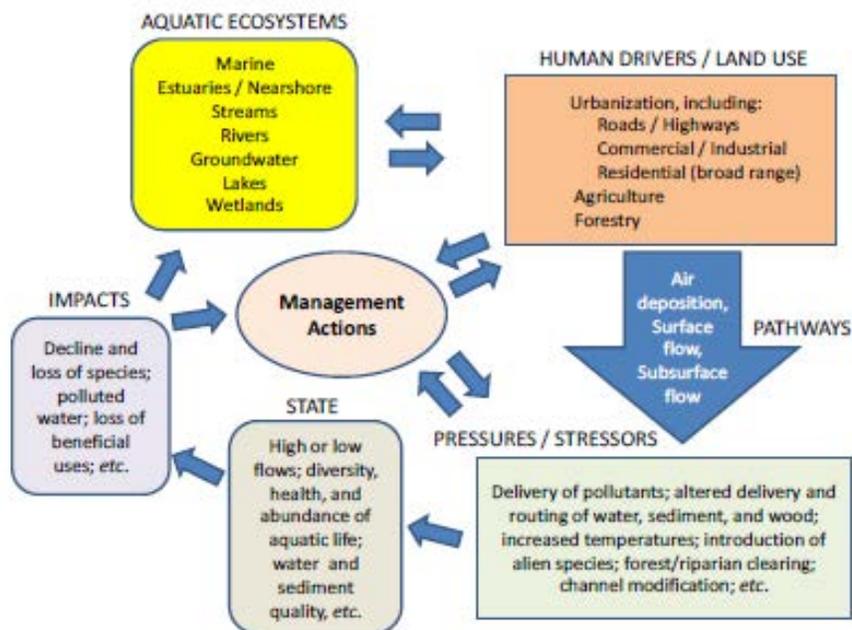


Figure 1: Stormwater Stressors and Pathways

⁷ Puget Sound Stormwater Work Group. 2010. *Stormwater Monitoring and Assessment Strategy for the Puget Sound Region, Volume 1: Scientific Framework*, Washington State Department of Ecology, Olympia, WA.

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

Toxic Loading Study for Puget Sound

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 or human health criteria for the following parameters: dissolved copper, lead, and zinc; total mercury; total polychlorinated biphenyls (PCBs); several carcinogenic polycyclicaromatic 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 than during 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.

III. LAWS AND REGULATIONS

Federal Clean Water Act

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

Amendments to the Clean Water Act in 1987 established new statutory requirements to control industrial and municipal stormwater discharges to waters of the United States. Waters of the United States include most surface water bodies and ground waters that are hydrologically connected to surface waters. The 1987 CWA amendments Congress directed EPA to study remaining sources of stormwater discharges and propose regulations, based on the study, to designate and control other stormwater sources.

In 1990 the EPA promulgated the phase I regulations. Phase I also included Washington State Department of Transportation. In 1999, EPA promulgated the Phase II rule which extends coverage to "small" municipal separate storm sewer systems.

Operators of separate storm sewers serving populations of 100,000 or greater are required to have a National Pollutant Discharge Elimination System (NPDES) permit to discharge stormwater. Operators with populations of 250,000 or more are defined as "large" while those with populations between 100,000 and 250,000 are defined as "medium". Under the Act the permit requirements for discharges from municipal separate storm sewer systems are:

- “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.” (33 U.S.C. §1342 (p)(3)(B))*

The regulatory definition of an MS4 (40 CFR 122.26(b)(8)) is *"a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created to or pursuant to state law) including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the Clean Water Act that discharges into waters of the United States. (ii) Designed or used for collecting*

or conveying stormwater; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."

In practical terms, operators of MS4s include municipalities and local sewer districts, state and federal departments of transportation, public universities, public hospitals, military bases, and correctional facilities.

EPA Rules

EPA implemented regulations that 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, 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 are also required to be covered under the permit program. This includes state highway systems such as those owned or operated by WSDOT. Other examples of other publicly-owned storm sewer systems include ports, drainage districts, and flood control districts located within named municipalities.

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

- Permits must require the implementation of stormwater management programs rather than establishing numeric effluent standards for stormwater discharges (40 CFR 122.26(d)(2)(iv)).
- Permits must cover a large geographic area rather than individual "facilities." A permit coverage area may include hundreds or even thousands of individual outfalls discharging stormwater (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)).
- Permits allow, and even encourage, a watershed approach to comprehensively manage stormwater (40 CFR 122.26(a)(3) & (d)(2)(iv)).
- Permits emphasize pollution prevention with some provisions requiring eliminating or controlling pollutants at their source. Permittees must 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 establish a two part application process, but did not establish actual permit requirements. EPA deliberately allowed the permitting authority flexibility to establish permit requirements that are appropriate for the local area under regulation.

Chapter 90.48 RCW - The Water Pollution Control Act and Implementing Regulations

Along with requirements in federal law, state law requires the control of pollution. RCW 90.48.010 establishes "the public policy of the state of Washington (is) 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.”

RCW 90.48.020 defines the terms “pollution” and “waters of the state.” The statute does not define the phrase “all known available and reasonable methods” but authorizes Ecology to define it.

State law requires a permit to discharge pollutants or waste materials to waters of the state (RCW 90.48.162). A discharger must make an application to obtain a discharge permit. Ecology has an obligation to investigate the application and determine whether the use of public waters for the waste disposal will pollute state waters in violation of the public policy of the state (RCW 90.48.170). Unless Ecology finds the disposal of waste materials will pollute the waters of the state in violation of the public policy (RCW 90.48.180), Ecology must issue a permit.

In 1987 the state legislature passed RCW 90.48.520 into law. When issuing or renewing state and federal wastewater discharge permits, Ecology must review an applicant's operations and incorporate permit conditions which require all known, available, and reasonable methods to control toxicants in the applicant's wastewater. The discharge of toxicants which would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria is prohibited. (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: Ch. 173-200 WAC Ground Water Quality Standards; Chapter 173-201A WAC Water Quality Standards for Surface Waters; and Ch. 173-204 WAC, Sediment Management Standards. These standards generally require that permits issued by Ecology to ensure standards are not violated, or a compliance schedule be in place to bring discharges into compliance.

The State Waste Discharge General Permit Program regulation, Chapter 173-226 WAC, establishes a general permit program applicable to the discharge of pollutants, wastes, and other materials to waters of the state. WAC 173-226-110 requires the preparation of a draft permit and an accompanying fact sheet before Ecology can issue a general permit under the NPDES permit program.

IV. RELATIONSHIP TO OTHER STORMWATER PERMITS

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

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. A wide range of industrial facilities listed at 40 CFR 122.26(b)(14) must obtain NPDES permits from Ecology to authorize discharges to surface waters or to MS4s that discharge to surface waters. In Washington State, Ecology has also issued several industry-specific permits that authorize stormwater discharges from those facilities, including the Sand and Gravel General Permit and the General Permit for Boat Building and Repair Facilities. Under 40 CFR 122.26(d)(2)(iv)(C), Phase I municipal permittees must establish a program to address stormwater discharges from industrial facilities that the Permittees determine are contributing a substantial pollutant loading to the MS4. EPA describes this dual responsibility in the preamble to the Phase I stormwater regulations:

Although today's rule will require industrial discharges through municipal separate storm sewers to be covered by separate permit, EPA still believes the municipal operators of large and medium municipal systems have an important role in source identification, and the development of pollution controls for industries that discharge stormwater through the municipal separate storm sewer systems is appropriate. Under the CWA [*Clean Water Act*] large and medium municipalities are responsible for reducing pollutants in discharges from municipal separate storm sewers to the maximum extent practicable. Because stormwater from industrial facilities may be a major contributor of pollutants to municipal separate storm sewer systems, municipalities are obligated to develop controls for stormwater discharges associated with industrial activity through their system in their stormwater management program. (EPA, Federal Register, Vol. 55, No. 222; November 16, 1990, p.48090).

Construction Stormwater General Permit

Under this permit, WSDOT must adopt and implement measures to prevent sediment and other pollutants associated with construction activity from impacting water quality and to comply with *NPDES Construction Stormwater General Permit* (CSWGP). The construction stormwater permit is issued 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 issued by Ecology will be in compliance with the construction site runoff control requirements of the municipal stormwater permit.

Large and Medium (Phase I) Municipal Stormwater General Permits

Ecology issued the first Phase I Municipal Stormwater Permits in 1995 and most recently reissued a general permit in 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.

Phase I and Phase II permittees share basins, have interconnected conveyance systems, and discharge into many of the same water bodies. During the current (2013) permit cycle, Phase I and Phase II communities in western Washington cooperated in a number of permit programs and grant projects, and worked together through coordination groups.

Wherever possible, Ecology coordinates the requirements of the municipal stormwater permits. 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 WSDOT and local jurisdictions. Ecology has established expectations in this permit for regional coordination in monitoring efforts.

Western and Eastern Washington Phase II Municipal Stormwater General Permits

Ecology issued the Eastern and Western Washington Phase II Municipal Stormwater General Permits at the same time as the Phase I permit to cover small municipal storm sewer systems. Small MS4s are part of EPA's NPDES regulatory program for stormwater discharges to surface waters.

Many of the Phase II Permittees in western Washington are located in counties regulated by the Phase I permit. WSDOT shares basins with Phase I and Phase II permittees, has interconnected conveyance systems, and discharges into many of the same water bodies. In areas where conveyance systems are interconnected or discharges go to the same water body, successful implementation of stormwater management programs requires coordination between WSDOT and local jurisdictions. Ecology has established expectations in this permit for coordination with local jurisdictions in implementing the various elements of its stormwater management program plan.

V. ANTIDegradation

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.

This permit addresses antidegradation of Tier I, Tier II and Tier III waters.

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).*

How the WSDOT Stormwater Permit Meets the Antidegradation Requirement

Ecology's process for reissuance of WSDOT's stormwater general permit 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. The permit is issued for a fixed term of five years. Each time Ecology reissues the general permit, it evaluates the permit conditions to determine if additional or more stringent requirements should be incorporated.

Ecology's evaluation of the WSDOT stormwater permit 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 will review and use public comment and testimony from public hearings during the public comment period on the draft 2019 permit 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. WSDOT also updates the Highway Runoff Manual periodically to make sure it is functionally equivalent to Ecology manuals. This improves the effectiveness of stormwater controls for protecting water quality and meeting the intent of the antidegradation provisions of the water quality standards.

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. Ecology funded the Washington Stormwater Center to revise the protocols and the TAPE guidance manual and re-opened the revised program in 2010 after a two-year suspension. The guidance is revised periodically as improvements to the TAPE process are made.
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, and is compiling an interactive stormwater BMP toolbox.
5. WSDOT compliance reports. Each year, WSDOT submits to Ecology an annual report describing, among other requirements, the status of their stormwater management program plan implementation. Also annually, WSDOT submits the results of their research and monitoring studies. 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.

The low impact development requirements in the WSDOT stormwater permit is a part of the adaptive process to improve stormwater management and protect surface waters from degradation. Low impact development stormwater management is a nationally recognized innovative land use and stormwater management approach. Ecology is funding an update to the Western Washington Hydrologic Model to address LID BMPs, as well as a project to develop guidance and training on maintenance of LID BMPs. In eastern Washington, Ecology is using incremental steps toward eventual broad implementation of LID as appropriate to the climate, soils, and geology of that region. These statewide requirements will 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 permit also helps satisfy the anti-degradation requirements for adaptive management. The draft permit would require monitoring studies to evaluate the effectiveness of individual BMPs and/or elements of stormwater programs. A repository of information for Source Identification and Diagnostic Monitoring proposed for western Washington would benefit WSDOT and other stormwater permittees statewide in improving programs to eliminate pollution sources. The proposal for monitoring status and trends in Puget

Sound receiving waters as well as Lower Columbia River basin would provide information to evaluate water quality changes in urban areas where programs are being implemented. The proposed permit requires WSDOT participation in the planned status and trends monitoring studies in Puget Sound basin and the Lower Columbia River basin, or WSDOT could choose to do outfall monitoring as defined in S7.

VI. EXPLANATION OF PERMIT

Summary

This stormwater NPDES permit requires the implementation of a stormwater management program for municipal separate storm sewers owned or operated by WSDOT. Implementation of the stormwater management program required under this permit constitutes reduction of pollutants to the maximum extent practicable (MEP) during the life of the permit, as required in section 402(p)(3)(B) of the federal Clean Water Act.

The conditions defining the stormwater management program requirements are based on EPA regulations for the municipal stormwater permit program (Code of Federal Regulations (CFR) title 40, §122.26), the stormwater elements of the Puget Sound Water Quality Management Plan, the State Water Pollution Control Act, Chapter 90.48 RCW and the annual reports submitted by the permittees under the previous municipal stormwater permit.

Ecology is issuing this permit under joint federal and state authorities. Under the federal Clean Water Act permits are required for point source discharges of pollutants to waters of the United States. Under that State Water Pollution Control Act (Chapter 90.48 RCW) permits are required for the disposal of waste materials into waters of the State. Under chapter 90.48 RCW the definition of ‘waters of the state’ includes underground waters whereas the definition of waters of the United States does not.

S1 – Permittee and Permit Coverage

This permit is solely for WSDOT. This section of the permit defines the area covered under this permit.

The permit covers discharges from WSDOT’s Municipal Separate Storm Sewer Systems (MS4s), as defined by EPA at 40 CFR 122.26(b)(4) and (7), in all municipal stormwater Phase I and Phase II areas on the date the 2019 Permits are issued. Prior to the effective dates of 2019 Permits, the coverage areas are the same as in WSDOT 2014 permit. This permit also covers stormwater discharges to any water body for which there is a U.S. Environmental Protection Agency (EPA) approved Total Maximum Daily Load (TMDL) with wasteload allocations and associated implementation documents specifying actions for WSDOT stormwater discharges. For TMDL areas that are not within the Phase I and Phase II areas, WSDOT shall be responsible for the TMDL implementation actions found in Appendix 3 of the permit.

To comply with the requirements of Ch. 173-226 WAC, the General Permit Rule, WSDOT submitted an application that contains the information specified in WAC 173-226-200. WSDOT submitted an application to Ecology on October 5th, 2018.

S2 – Authorized Discharges

S2.A – This section of the permit authorizes the discharge of stormwater from municipal separate storm sewers, owned or operated by WSDOT, to waters of the state, subject to certain limitations. Consistent with the federal rules, this permit does not cover direct discharges to surface waters from privately owned or operated storm drains. Discharges into and from municipal separate storm sewers owned or operated by WSDOT must comply with the terms and conditions of the permit.

This permit authorizes discharges from new municipal separate storm sewers, constructed by WSDOT after the issuance date of this permit provided those discharges have received all applicable state and local permits, including compliance with the State Environmental Policy Act (SEPA). The control measures required under the permits are area-wide and will apply to any future discharges from the municipal storm sewer systems regulated under this permit.

S2.A.1 – In accordance with state law Ecology regulates both discharges to surface waters and discharges to ground waters. Discharges to ground water are covered under the permit because portions of the areas regulated under these permits may include discharges of stormwater to the ground from municipal separate storm sewers. Stormwater management programs required under these permits should apply area-wide, regardless of where water is discharged, and that measures are taken to reduce the discharge of pollutants to ground waters as well as surface waters. However, as stated in paragraph S2.A.1 of the permit, discharges to ground water regulated under the Underground Injection Control (UIC) program are not covered under this permit to avoid overlapping regulation of these discharges.

Stormwater may be discharged to ground water via infiltration or injection techniques. Injection facilities such as drywells that are classified as UIC facilities are covered under the UIC program (Chapter 173-218 WAC); this permit does not cover UIC discharges. However, stormwater management programs developed to comply with this permit may be used to satisfy some of the requirements of the UIC program. This permit covers many infiltration facilities, including infiltration basins and trenches and dispersion techniques that are not classified as UIC wells because State law requires that they be addressed.

S2.A.2 – Clarifies that stormwater discharges to ground waters that are not subject to federal regulation are regulated only by state authority. EPA policy and case law support the regulation of stormwater discharging to groundwater where hydrologic connectivity exists with surface water. (See e.g., *Exxon Corp. v. Train*, 554 F.2d 1310, 1312, n.1 5th Cir. 1977); *McClellan Ecological Seepage Situation v. Weinberger*, 707 F.Supp. 1182, 1195-96 (E.D. Cal. 1988); and *Washington Wilderness Coalition v. Hecla Mining*, case # CS 94-233 FVS). The best guidance on this issue comes from the United States District Court Eastern District of Washington (*Washington Wilderness Coalition v. Hecla Mining*, 870 F. Supp 983, 990). The court held that “since the goal of the CWA is to protect the quality of surface waters, any pollutant which enters such waters, whether directly or through groundwater, is subject to regulation by NPDES permit.” The court went on to hold, “[I]t is not sufficient to allege groundwater pollution, and then to assert a general hydrological connection between all waters. Rather, pollutants must be

traced from their source to surface waters, in order to come within the purview of the CWA.” The decision on hydraulic continuity depends upon the pollutant (type and mobility in soils), the pollutant loading, the soils at the site, and the hydrology of the site.

S2.B.1 – Since municipal separate storm sewers carry stormwater and other flows, this permit authorizes the discharge of stormwater commingled with other flows, under certain circumstances. Section 402(p)(3)(B)(ii) of the federal Clean Water Act clearly states that municipal permits must effectively prohibit non-stormwater discharges to the municipal separate storm sewer system. However, another NPDES permit may authorize such discharges to municipal separate storm sewers (other than this municipal stormwater permit). This permit does not authorize industrial process wastewater and non-process wastewater discharges.

S2.B.2 – In accordance with 40 CFR 122.26(d)(2)(iv)(B)(1), this permit authorizes discharges from emergency fire fighting activities, in accordance with 40CFR122.26(d)(2)(iv)(B)(1). Training is not considered an emergency fire fighting activity. This permit does not authorize discharges from fire fighting training activities into the permittees MS4.

S2.B.3 – This permit requires all other non-stormwater discharges to be addressed through the program to detect and remove illicit discharges and improper disposal as required under this permit. In addition, Section S2.B.3 is modified to include non-stormwater “Allowable Discharges” and “Conditionally Allowable Discharges” of non-stormwater sources. This language was moved from Appendix 5 of WSDOT’s 2014 permit and placed under S2.B.3 for clarity.

S2.C – This permit does not authorize illicit discharges and other non-stormwater discharges except as allowed under the illicit discharge detection and elimination requirements of the stormwater management program required under S5.C of this permit. Coverage under and compliance with this permit does not relieve WSDOT from compliance with other state and federal laws including but not limited to CERCLA (Superfund), and the Oil Pollution Act of 1990.

S2.D – This permit authorizes the discharge of stormwater associated with industrial activities through municipal separate storm sewers. For further explanation of the reasons for the separate stormwater permit requirement, see the preamble to the amendments to 40 CFR parts 122, 123, and 124 published in the Federal Register, November 16, 1990.

S2.E - This permit does not authorize discharges of stormwater to waters within Indian Country. The language in the 2019 permit has been modified from that in the 2014 permit for clarity.

S3 – Responsibility of the Permittee

This section states that WSDOT is solely responsible for compliance with this permit, however, this permit allows WSDOT to rely on another entity to meet permit requirements. EPA regulations for large and small MS4s explicitly allow such an arrangement. Ecology allows WSDOT to rely on other entities such as Health Districts or Conservation Districts to implement

parts of their stormwater management programs and have included this provision. However, WSDOT retains ultimate responsibility for meeting all applicable permit conditions.

S4 – Compliance with Standards

Ecology's permitting strategy for municipal stormwater discharges covered under this permit will:

- Require the adoption and implementation of a stormwater management program that meets federal requirements.
- Assess the effectiveness of those programs through monitoring and/or other evaluation efforts.
- Require in subsequent permits, implementation of more effective and/or more targeted stormwater best management practices if necessary to protect or restore water quality.
- Evolve towards eventual compliance with water quality standards through successive permit cycles

Consistent with Ecology's priority of preventing future impacts to water quality from municipal stormwater discharges, existing discharges were to meet the MEP standard by implementing the SWMP required under S5.C plus any TMDL requirements, and new discharges were not to cause or contribute to a violation of water quality standards.

S4.A – This condition prohibits the discharge of toxicants to waters of the State of Washington which would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria. RCW 90.48.520 provides the basis for this condition as follows:

*“In order to improve water quality by controlling toxicants in wastewater, the department of ecology shall in issuing and renewing state and federal wastewater discharge permits 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. Such conditions may include, but are not limited to: (1) Limits on the discharge of specific chemicals, and (2) limits on the overall toxicity of the effluent. The toxicity of the effluent shall be determined by techniques such as chronic or acute bioassays. Such conditions shall be required regardless of the quality of receiving water and regardless of the minimum water quality standards. **In no event shall the discharge of toxicants be allowed that would violate any water quality standard, including toxicant standards, sediment criteria, and dilution zone criteria.**”* (Emphasis added)

Chapter 90.48 RCW does not define the term “toxicants” and there is no readily available legislative history which would help define which specific pollutants would be considered toxicants. Nor did the state water quality standards in existence at the time the legislature adopted RCW 90.48.520 include a definition for either toxicant or toxic pollutant.

At the time that RCW 90.48.520 was adopted, the federal Clean Water Act did contain a definition for toxic pollutant:

“The term "toxic pollutant" means those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available to the Administrator, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring.” (33 U.S.C. § 1362(13))

The federal Clean Water Act at that time included a list of toxic pollutants. (33 U.S.C. § 1317(a)(1)) The list of toxic pollutants comprises the priority pollutant list. Based on the absence of legislative history, for this permit Ecology assumes the term ‘toxicant’ has the same meaning as ‘toxic pollutant’ as defined by the federal Clean Water Act and EPA’s implementing regulations. This is similar to the term “toxic substance” which is used in the Water Quality Standards for Surface Waters of the State of Washington, Chapter 173-201A WAC.

S4.B – This condition does not authorize a violation of Washington State surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (chapter 173-204 WAC), or human health-based criteria in the national Toxics Rule (Federal Register, Vol. 57, NO. 246, December 22, 1992, pages 60848-60923).

This section does not require strict compliance with water quality standards for municipal stormwater discharges under § 1342(p)(3)(B) of the federal Clean Water Act. EPA distinguishes between the maximum extent practicable permitting standard for municipal stormwater permits and the requirement under 33 U.S.C. § 1311(b)(1)(C) that permits include any more stringent limitation, including those necessary to meet water quality standards. In *Defenders of Wildlife v. Browner*, the Ninth Circuit Court determined:

“...the text of 33 U.S.C. § 1342(p)(3)(B), the structure of the Water Quality Act as a whole, and this court's precedent all demonstrate that Congress did not require municipal storm-sewer discharges to comply strictly with 33 U.S.C. § 1311(b)(1)(C).”

(Note to readers: 33 U.S.C. § 1311(b)(1)(C) is the part of the federal Clean Water Act requiring any more stringent effluent limitations necessary to meet water quality standards.)

Although the Clean Water Act does not require municipal storm sewer discharges to comply strictly with U.S.C. § 1311(b)(1)(C), U.S.C. § 1342(p)(3)(B)(iii) states: “[p]ermits for discharges from municipal storm sewers . . . shall require . . . such other provisions as the Administrator . . . determines appropriate for the control of such pollutants.” (Emphasis added)

This provision gives Ecology discretion to determine whether strict compliance with U.S.C. § 1311(b)(1)(C) is appropriate. In this permit, Ecology has adopted an interim BMP-based

approach towards meeting the goals of the Clean Water Act and eventual compliance with water quality standards.

Consistent with the EPA permitting approach for municipal stormwater discharges, Ecology has not established numeric end-of-pipe effluent limits for the discharges covered under this permit. EPA policy, transmitted in 1996, explains an alternative approach to effluent limits that is appropriate for storm water permits:

“Due to the nature of storm water discharges, and the typical lack of information on which to base numeric water quality-based effluent limitations (expressed as concentration and mass), EPA will use an interim permitting approach for NPDES storm water permits.”

The interim permitting approach uses best management practices (BMPs) in first-round storm water permits, and expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards. In cases where adequate information exists to develop more specific conditions or limitations to meet water quality standards, these conditions or limitations are to be incorporated into storm water permits, as necessary and appropriate.” (EPA policy, Interim Permitting Approach for Water-Quality Based Effluent limits in Storm Water Permits, September 1, 1996.)

While the permit does not require strict compliance with state water quality standards for municipal stormwater discharges (except where compliance may be required by RCW 90.48.520), neither does Ecology intend the permit provide a categorical exemption from compliance with state water quality standards for municipal stormwater discharges. Because compliance with the water quality standards is an eventual goal of this permit, it is appropriate to use the water quality standards as a measure of the effectiveness of WSDOT’s Stormwater Management Plan (SWMP) and to help identify priorities.

Ecology acknowledges that WSDOT may need decades to address the water quality impacts of existing municipal stormwater discharges. In part, this is because of the difficulty and challenges associated with reversing the water quality impacts of existing stormwater discharges. The focus of this permit is to prevent further water quality impairment due to new stormwater discharges and make reasonable progress in addressing existing sources of water quality impairment.

S4.C – This condition requires WSDOT to reduce the discharge of pollutants to the maximum extent practicable, based on U.S.C § 1342(p)(3)(B)(iii). Neither Congress nor EPA has defined "maximum extent practicable" (MEP), and they have instead left the determination of what constitutes MEP up to the individual permitting authorities. As a result, permit requirements established by Ecology must be tempered and limited by state law. For example, the application of post construction stormwater controls on new development and re-development required by this permit must be done within the context of state vesting laws. Similarly, the inspection requirements of this permit must be carried out in a manner that is consistent with the state constitution and state law.

In adopting both the Phase I and Phase II rules, EPA recognized that state law and at times local law may limit or restrict the scope of permit requirements (FR Vol. 55, No. 222, pg 48041) and (FR Vol. 64, No. 235, pg 68766).

Ecology has determined the development, implementation and enforcement of stormwater management programs required under this permit constitute the controls necessary to reduce the discharge of pollutants to the maximum extent practicable.

S4.D – This condition requires the use of all known, available, and reasonable methods of prevention, control, and treatment to prevent and control pollution of waters of the State of Washington, based on RCW 90.48.170 and RCW 90.48.520. Ecology has determined compliance with this permit including the development, implementation and enforcement of stormwater management programs required under this permit constitute the use of all known, available and reasonable methods of prevention, control, and treatment to prevent and control pollution.

S4.F – In a 2009 ruling, the Pollution Control hearing Board (PCHB) clarified that “*..when a Permittee follows the notification process in S4.F, the Permittee remains in compliance with permit conditions S4.A and S4.B prohibiting discharges that violate water quality standards*”

S5 – Stormwater Management Program

S5.A.1 – Consistent with state and federal law, this section requires that WSDOT design the SWMP to reduce the discharge of pollutants to the MEP, and meet state AKART requirements. However, WSDOT can continue to implement existing stormwater management programs that go beyond what is required in this permit where they are necessary to reduce the discharge of pollutants to the MEP. This section of the permit establishes the requirements for WSDOT to reorganize its stormwater management program plan (SWMP) and to annually update it as necessary and make it available on their website for public to review and comment. The updated SWMP must be submitted to Ecology with each annual report.

S5.A.2 – WSDOT must track the cost of implementation of the SWMP. 40 CFR 122.26 requires a fiscal analysis of the necessary capital and operations and maintenance expenditures to implement the SWMP; and 40 CFR 122.42(c) requires reporting of annual expenditures and proposed budgets. Ecology has deviated from the EPA requirement by requiring tracking of expenditures. The anticipated cost and resources available to implement the program are not part of the basis for deciding whether the SWMP meets the MEP standard for this permit. Tracking of expenditures is still necessary; however, to evaluate the MEP standard established in future permits.

S5.B – This section of the permit establishes the requirements for WSDOT to continue implementing its stormwater management program (SWMP) described in Appendix 5 of 2014 permit

During the initial SWMP development process in 2009, WSDOT identified key activities and performance indicators associated with each minimum required activity. Those performance indicators are incorporated into the body of the 2019 permit..

S5.C Revisions:

S5.C has been edited to include the requirements of implementing SWMP and reorganized for more consistency with the Phase I and II permits.

Stormwater Management Program Plan (SWMP) Components

This fact sheet describes SWMP components and minimum performance indicators required under 40 CFR 122.26. The SWMP needs to include administrative and legal components that WSDOT has in place to ensure program implementation, as well as components which should directly effect pollutant reductions and reduction of impacts.

Legal Authority

This requirement is drawn directly from EPA regulations (40 CFR 122.26). However, the language requiring legal authority to prohibit illicit discharges, and carry out inspections and enforcement (within the limitations of state law) applies to discharges coming into the MS4 from another jurisdiction. As an operator of an MS4, WSDOT receives, conveys, and discharges pollutants from third parties, and is responsible for those pollutants. By accepting discharges, whether passively or not, the operator of the MS4 accepts responsibility and the consequences of those discharges. These discharges may cause or contribute to a condition of contamination or exceedances of receiving water quality standards. WSDOT can control the contribution of pollutants into its system through a broad range of actions – source control inspections and follow-up technical assistance programs; targeted inspection and maintenance programs; coordination with entities having the legal authority to enforce local water quality ordinances and cooperative agreements with adjoining municipalities or other public entities.

Ecology recognizes controlling the contribution of pollutants from adjoining municipalities or permittees whose storm sewers interconnect with those of WSDOT may be difficult, particularly if the adjoining municipality is not covered under a municipal stormwater NPDES permit. However, as explained above, a permittee cannot passively accept pollutants into its MS4 from outside sources. Adequate control in these circumstances means, at minimum, having an established process and point of contact for working with the adjoining municipality or co-permittee to resolve problems.

Coordination

This permit requires WSDOT to establish coordination mechanisms both internally and externally to aid in the implementation of the SWMP.

Internal coordination requires WSDOT to establish communication and coordination mechanisms necessary to comply with the permit. The permit does not specify how the coordination will take place, allowing WSDOT the flexibility to design coordination systems to meet this requirement.

For external coordination WSDOT must develop mechanisms to increase intergovernmental coordination as a necessary part of a SWMP since drainage basins seldom follow jurisdictional

boundaries. This requirement is based on EPA regulations (40 CFR 122.26(d)(2)(iv)) calling for intergovernmental coordination, where necessary, to reduce the discharge of pollutants to the MEP. Ecology will accept coordination through watershed councils to fulfill this requirement. Note that Ecology encourages coordination with Tribes and others, but does not mandate it under this permit, because Tribes are not covered under an NPDES permit issued by Ecology.

Municipal Separate Storm Sewer System Mapping and Documentation (MS4 Asset Mapping)

This condition is a continuation of the requirement in the existing permit to gather and maintain adequate information to conduct planning, priority setting and program evaluation activities. The SWMP contains the procedures and protocols related to responding to non-construction-related spills. This includes the procedures to identify and eliminate illicit discharges and illegal connections to WSDOT's MS4 (see IDDE section below). This section also includes the procedure for traffic accident related spills and notification. This spills cleanup and notification procedure was developed and tested with involvement from Washington State Patrol, Ecology, WSDOT, King County, and City of Seattle.

Controlling Runoff from New Development, Redevelopment, and Construction Sites

The EPA regulations require Phase I municipal stormwater permittees to “develop, implement and enforce controls to reduce the discharge of pollutants from municipal separate storm sewers which receive discharges from areas of new development and significant redevelopment” (40 CFR Part 122.26(d)(2)(iv)(A)(2)). The rules also require a program “to reduce pollutants in storm water runoff from construction sites.” (40 CFR Part 122.26(d)(2)(iv)(D)).

Ecology requires the permittees to update their stormwater requirements to be consistent with Ecology's updated stormwater manuals. WSDOT's Highway Runoff Manual has been revised, reviewed, and approved for consistency with Ecology's manuals. The HRM will be appended to this permit for public review and comment. In developing the content for this section of the reissued permit, Ecology also considered the requirements in more recently issued federal rules for the Phase II municipal stormwater permittees (40 CFR 122.34.(b)(4) and (5)).

The program for post-construction stormwater management in new development and redevelopment must:

- Develop and use strategies which include a combination of structural and/or non-structural BMP's that are appropriate for the community;
- Use an ordinance to address stormwater to the extent allowable under law;
- Ensure adequate long-term operation and maintenance of BMP's.

Chapter 3 of HRM identifies the minimum requirements and thresholds for their applicability. Chapter 5 of HRM includes criteria for the design of stormwater BMPs and standards for their maintenance. The standards are used for determining when maintenance actions are required for conditions identified through inspections. The inspections are part of post construction activities.

How the Permit is Consistent with Federal Rules

The most effective way to minimize the impacts of stormwater discharges from areas of new development and redevelopment (as called for in the federal rules) is to design developments using techniques that:

- 1) minimize the generation of stormwater runoff (low impact development);
- 2) reduce exposure of pollutants to precipitation and stormwater runoff (source control BMP's);
- 3) remove pollutants in stormwater runoff (treatment BMP's); and
- 4) control either the volumetric flow rate of stormwater discharged (for discharges to streams), or control the volume of water discharged (if discharging to a wetland).

The most recent editions of the Eastern and Western Washington stormwater manuals provide the latest technical guidance from the Department of Ecology on measures to control the quantity and quality of stormwater runoff from new development and redevelopment projects. The stormwater manuals, consistent with federal stormwater regulations, represent a generic, presumptive approach to meeting federal and state water quality requirements. The presumption is the procedures and best management practices outlined in the manual will generally result in compliance with the statutes.

This generic presumptive approach to meeting water pollution control laws is intended to handle the vast majority of new and redevelopment projects. There are literally thousands of those projects every year. There are not sufficient human resources or time to do the type of site-by-site analysis that occurs with municipal sewage treatment and industrial wastewater discharges. In addition, a site-specific analysis is difficult to perform for stormwater because of its ephemeral nature and variable pollutant concentration over the course of a discharge event. So, EPA, some state water pollution control agencies, and some local governments have published or adopted stormwater manuals that provide an established process for identifying appropriate prevention, treatment, and flow management practices.

However, there are instances where because of the size of a project or the sensitivity of a receiving water, or because of some other regulatory need to ensure compliance with standards (e.g., a certification under section 401 of the Clean Water Act that the discharge will comply with water quality standards), a site-specific stormwater analysis is necessary. In those instances, the appropriate level of treatment will be developed through a basin planning process and the treatment and control of stormwater runoff may be different from what is identified in the Highway Runoff Manual.

The permit allows the WSDOT to adopt alternative minimum requirements, thresholds, adjustments, definitions, and approaches demonstrating compliance with the state water quality standards on site and project specific basis as compared to those in Appendix 1 (HRM), if they have been approved by Ecology as equivalent. WSDOT must demonstrate to Ecology's satisfaction that its alternative provides equal protection of receiving waters and equal levels of pollutant control when compared to the provisions in Appendix 1. In addition, WSDOT may propose alternative site planning processes, and BMP selection and design criteria. WSDOT must demonstrate to Ecology's satisfaction that their alternative approaches will protect water

quality, meet the “maximum extent practicable” requirement of federal statutes, and meet the all known, available and reasonable methods of prevention, control, and treatment requirements of the state’s Water Pollution Control Act.

This condition requires that WSDOT establish legal authority to conduct inspections and enforce maintenance standards for all projects approved under the new development and redevelopment provisions of this permit. This provision is included in response to case law in this state which limits a municipality’s ability to gain access to private property without permission from the owner or tenant (*City of Seattle v. McCready*, 123 Wash. 2d 260, 868 P.2d 134 (Wa. 02/24/1994)).

Ecology established minimum performance measures for WSDOT to demonstrate capability to implement stormwater requirements. Those measures include review of all stormwater site plans submitted prior to construction records of performance of 95% of the required pre-project, active project, and completed project inspections. Pre-project inspections are required only for projects that have a high potential for sediment transport as identified by use of the criteria in Chapter 6 of the HRM, Appendix 1 to the permit. The information in Chapter 6 is now contained in a stand alone manual entitled “*WSDOT Temporary Erosion and Sediment Control Manual (TESCM)*.” Chapter 6 of HRM references TESCM and provides a link to it. That information in TESCM was developed in conjunction with local government stormwater managers.

The permit does not include any specific minimum measures for WSDOT’s enforcement strategies, however, Ecology expects WSDOT will establish clear thresholds for escalating levels of enforcement action in response to violations.

Provisions for Adequate Recordkeeping and Training of Stormwater Staff

To help organize, track, and document achievement of stormwater program implementation, the permit includes a requirement for WSDOT to maintain records for reviews, inspections, enforcement actions, training, and the staff trained. Ecology may use these records to evaluate WSDOT’s compliance with permit requirements.

Structural Stormwater Controls (Stormwater Retrofit for Existing Highways)

EPA rules in 40 CFR 122.26(b)(2) require a stormwater management program that includes, among other things, structural and source control measures, accompanied with an estimate of the expected reduction of pollutant loads and an implementation schedule. Ecology has not set a minimum expectation for the level of effort for this requirement. Ecology understands that it is not feasible to provide structural controls to mitigate the impacts of runoff from all existing development. WSDOT will set priorities and address the highest-ranked problems subject to the limitations of available resources.

SWMP describes WSDOT’s stormwater BMP retrofit program to address existing impervious surfaces that do not have treatment or flow control, or for which treatment or flow control is substandard. WSDOT’s retrofit program includes the “Cleanup Plan-triggered” element as the fourth element in the WSDOT’s stormwater facilities retrofit program. This element includes the TMDL-related retrofit obligations in the permit Section S6 and the retrofit obligations associated with the superfund site remediation to prevent recontamination.

Source Control Program for Existing Development

EPA rules in 40 CFR 122.26(b)(2) require a stormwater management program that includes source control measures.

The permit requires WSDOT to identify sites which potentially generate pollutants. A complaint-based response program which WSDOT may combine with the requirement for a citizen complaints/reports telephone number for the illicit discharge detection and elimination program.

This condition also requires an inspection and enforcement program for identified sites. The permit calls for inspecting 100% of the sites over the 5 year term of the permit. WSDOT may prioritize sites, categories of land use or geographic areas. Those sites where the property owner denies entry and where WSDOT has no legal authority to inspect the site may be excluded from onsite inspection. Evidence of an illicit or contaminated discharge can be documented without entering the property.

WSDOT may combine training for the source control program with training for the illicit discharge detection and elimination program and operation and maintenance programs.

Illicit Connections and Illicit Discharges Detection and Elimination (IDDE)

EPA requires a program to control illicit discharges and improper disposal in 40 CFR 122.26(d)(2). The requirements are based on the provision in the Clean Water Act that municipal stormwater NPDES permits include a requirement to effectively prohibit non-stormwater discharges into the storm sewers. This section requires continued implementation of an IDDE program with an implementation deadline concurrent with the effective date of this permit.

Ecology determined that the following types of non-stormwater discharges do not contribute significant sources of pollutants and therefore need not be addressed by the SWMP: diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, foundation drains, footing drains, air conditioning condensation, springs, water from crawl space pumps, footing drains, and flows from riparian habitats and wetlands.

The requirement to conduct screening to detect illicit connections comes directly from the EPA rules [40 CFR 122.26(d)(2)(B).] Ecology has specified the screening methods in Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assistance, published by the Center for Watershed Protection in October 2004. The manual is available at <http://www.cwp.org/>. Ecology has reviewed this manual and finds it provides a comprehensive, understandable and reasonable methods to detect, trace, identify and fix illicit connections.

The requirements to prevent, respond to, and clean up spills and improper disposal into the MS4 comes directly from EPA rules [40 CFR 122.26(d)(2)(B).]

The permit specifies the timeframes for response to illicit discharges based on experience of Ecology field staff in conducting similar investigation and enforcement actions. The proposed 2019 draft permit has compliance language in Section S5.C.4 for WSDOT to investigate and report illicit discharges and connections to its MS4. Ecology encourages WSDOT to

communicate and coordinate with Ecology regional office staff when investigating illicit discharges.

Proposed Changes to the Tracking and Reporting of IDDEs

For this Permit cycle, and consistent with the other MS4 (Phase I and II) permits, Ecology proposes to collect the IDDE information 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.

WSDOT is required to track and maintain records of the activities conducted to meet the requirements of the IDDE section. In the Annual Report, WSDOT submits data for all of the illicit discharges, including spills and illicit connections reported to, or investigated by WSDOT 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 WSDOT.

Ecology issued guidance for other MS4 Permittees in western Washington to meet this reporting requirement during their 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 the MS4 Permittees with smaller numbers of incidents to report. WSDOT may either use its own system or the form in WQWebIDDE for recording this data. If using your own tracking system, Ecology prefers that WSDOT's 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 2

Operation and Maintenance Program

The permit also includes requirements to achieve adequate long-term operation and maintenance of stormwater facilities. WSDOT must implement maintenance standards that are at least as protective as those in the 2019 Western Washington Stormwater Management Manual in western Washington and those in the 2019 Stormwater Management Manual for Eastern Washington for eastern Washington. The maintenance schedules for stormwater facilities that are included in the permit were originally drafted with the participation of local government stormwater managers during the effort to develop the "Tri-County" stormwater proposal as part of a response to the Endangered Species Act listing of Chinook salmon. Those maintenance standards have been adopted into the HRM.

The purpose of the maintenance standard is to determine if maintenance is required. The maintenance standard is not a measure of the facility's required condition at all times between inspections. Exceeding the maintenance standard between inspections and/or maintenance is not a permit violation.

WSDOT must continue inspecting all facilities owned or operated by the them annually. The inspection program should be designed to inspect all sites, and achieve at least a 95% inspection ratio.

The maintenance inspection frequencies may be changed where there are records or a formal affidavit attesting to maintenance experience. Ecology recognizes that facilities require maintenance at different frequencies depending circumstances such as surrounding land use, soils, type and age of facility.

This section requires annual inspection and maintenance of catchbasins to remove accumulated sediment, trash, oily residue and other materials captured by catchbasins. Two strategies for conducting inspections are allowed in the permit. In the first a subset of catch basins are inspected and based on that information all catchbasins in that conveyance are cleaned. An alternative method of inspecting all catchbasins and then cleaning individual basins as needed is also allowed.

A clarifications is made in Section S5.C.7.c.iii of the 2019 proposed draft permit regarding achieving an annual deficiency correction rate of 100% within one year. The 100% deficiency correction rate was changed to 98% to account for human error, situations where it may be extremely costly to get to the one remaining catch basin in the specified time of 1 year.

The section also requires proper disposal of decant water in accordance with the requirements in the Ecology stormwater manuals. The street waste liquids or decant water is generated in the process of maintaining stormwater BMPs. The BMPs capture settleable solids from stormwater runoff and may also minimize the discharge of oily runoff by retaining floatable oils in the BMP. The settled solids typically have high concentrations of adsorbed metals, oils and grease. The agitation involved in removing the solids from catch basins results in the resuspension of the fine fraction of the sediments. The pretreatment and treatment requirements are designed to remove the fine sediment and sheen causing oils (if any), from the decant water before it reaches the receiving water.

In previous permits a Spill Control Catch Basin was specified as a pretreatment requirement to remove oil. Ecology has determined that such devices do not provide sufficient reliability to make the presumption that they will function reliably enough to prevent oily sheens in receiving waters (see Volume V of the Western Washington Stormwater Manual). WSDOT may use any BMP (e.g., spill control catch basin, or decant methods) that can be demonstrated to prevent the discharge of sheen-causing oily discharges to eliminate the need for an approved oil water separator, as part of the treatment train.

The permit requires implementation of practices to reduce stormwater impacts associated with the permittee's parking lots, streets, roads and highways. [Based on EPA rules in [40 CFR 122.26(d)(2)(iv)(3)]. WSDOT may use the following guidance documents to develop this program:

- Ecology guidance for street waste disposal (2012 Stormwater Management Manual for Western Washington for street waste solids). This has been added to the permit as Appendix 5.

- The 2012 Stormwater Management Manual for Western Washington, Vol. II Construction Stormwater Pollution Prevention and Vol. IV Source Control.

As land owners, WSDOT has the ability to directly control the quality of stormwater runoff from their own practices. This section of the permit requires WSDOT to establish and implement policies and procedures to reduce pollutants from lands they own or maintain.

Of particular concern are the selection and application of insecticides and herbicides. US Geological Survey (USGS) has detected insecticides and herbicides (collectively termed pesticides) in all rivers, lakes and streams sampled across the United States. In King County researchers detected 23 pesticides in water from urban streams during rainstorms and the concentrations of five of these pesticides were at levels that pose danger to aquatic life. *Our Built and Natural Environments: A Technical Review of the Interactions between Land Use, Transportation and Environmental Quality* 21 May, Christopher W. 1996. *Assessment of Cumulative Effects of Urbanization on Small Streams in the Puget Sound Lowland Ecoregion: Implications for Salmonid Resource Management*. PhD Dissertation, University of Washington. 22 USGS Fact Sheet 097-99. April 1999. Since pesticides are difficult or impossible to remove from water, Ecology is focusing on the use of integrated pest management plans as a way to reduce both the need and use of pesticides.

RCW 17.15 provides the definition for Integrated Pest Management (IPM) as:

“Integrated pest management” means a coordinated decision-making and action process that uses the most appropriate pest control methods and strategy in an environmentally and economically sound manner to meet agency programmatic pest management objectives. The elements of integrated pest management include:

- 1) Preventing pest problems;
- 2) Monitoring for the presence of pests and pest damage;
- 3) Establishing the density of the pest population, that may be set at zero, that can be tolerated or correlated with a damage level sufficient to warrant treatment of the problem based on health, public safety, economic, or aesthetic thresholds;
- 4) Treating pest problems to reduce populations below those levels established by damage thresholds using strategies that may include biological, cultural, mechanical, and chemical control methods and that must consider human health, ecological impact, feasibility, and cost-effectiveness; and
- 5) Evaluating the effects and efficacy of pest treatments.

Reducing the use of pesticides will reduce the risk of the chemicals being carried to streams by stormwater. Many sectors of agriculture have adopted the methodology. IPM provides reasonable and prudent steps to use when applying chemicals designed to kill plant or animal life. Following them will minimize the risk of discharging pesticides into the MS4.

Excess nutrients entering water ways is also a large and significant urban source of pollution. An analogous plan to manage nutrients will ensure that nutrients are only used when necessary

and in the amounts needed. At a minimum Ecology expects that WSDOT will apply fertilizer consistent with recommendation based on soil tests.

The routine practice of landscape maintenance, trash management and building cleaning can affect stormwater quality. Using relatively simple management techniques, WSDOT can minimize pollutants generated from these activities. BMPs for these activities are included in Volume IV of the 2019 Stormwater Management Manual for Western Washington.

Ecology has determined that activities at certain sites owned or operated by WSDOT are similar to activities at sites regulated under the Industrial Stormwater General Permit. For this reason, this provision of the permit calls for developing Stormwater Pollution Prevention Plans (SWPPPs) for these sites. A SWPPP document measures to identify, prevent, and control the contamination of discharges of stormwater to surface or ground water. Ecology provides a template/guidance for developing SWPPPs for industrial sites at:

<https://ecology.wa.gov/Asset-Collections/Doc-Assets/Water-quality/Water-Quality-Permits/Industrial-Stormwater/Industrial-Stormwater-Pollution-Prevention-Plan-Te>

Education and Outreach, Training, and Public Involvement

EPA rules for Phase I and Phase II municipal stormwater permit programs, and the 2000 Puget Sound Water Quality Management Plan require permittees to implement a public education program. WSDOT has developed a variety of programs to educate the public, consultants, contractors, and WSDOT personnel on stormwater issues. They include the Adopt-A-Highway Program, Highway Runoff Manual-related trainings, and internet web pages that provide access to WSDOT's stormwater-related guidance manuals, procedures, design tools, and other related resources.

The EPA Phase II regulations require public involvement and participation as part of the SWMP. Ecology felt this was a reasonable expectation for Phase I permittees as well. Ecology expects that existing public involvement and participation opportunities conducted by WSDOT are likely sufficient to satisfy this requirement.

Stormwater Management for Existing Facilities

This section describes stormwater BMP retrofit program to address existing impervious surfaces that do not have treatment or flow control, or for which treatment or flow control is substandard. This element includes the TMDL-related retrofit obligations in the permit section S6 and the retrofit obligations associated with the superfund site remediation to prevent recontamination.

S6 – Total Maximum Daily Load Allocations

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). Ecology develops a TMDL through a defined process through which Ecology identifies the maximum amount of a pollutant that may be discharged from all sources to a water body without causing violations of water quality standards. Then with stakeholders, Ecology develops pollutant control strategies to keep

pollutant loading below that level. The strategies include numeric Waste Load Allocations (WLAs) for NPDES permitted dischargers and Load Allocations (LAs) to control the loadings from nonpoint sources.

Ecology reviewed all TMDLs approved by EPA before November 6, 2018 to determine whether WSDOT stormwater sources were identified. Section S6 of the permit has the TMDL requirements applicable to WSDOT and provides specificity on the actions required of WSDOT to comply with the TMDL requirements. Applicable TMDLs and their associated action items for WSDOT are described in “Appendix 3 – Applicable TMDL Requirements”. Information on Ecology’s TMDL program is available on Ecology’s website at: <https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement>

Appendix 3 has been revised to reflect WSDOT progress in implementing the required action items under the TMDLs during the 2014 permit cycle. For TMDLs with action items have been implemented satisfactorily during the 2014 permit cycle and are no longer applicable, they would be moved to Part 2 of Appendix 3. For the 2019 permit cycle, Henderson Inlet Watershed Fecal Coliform TMDL was moved from Part 1 to Part 2. Appendix 3 is also revised to incorporate new TMDLs and their associated action items. WSDOT must implement the necessary actions for stormwater discharges covered by this permit to achieve the pollutant reductions called for in applicable TMDLs.

Applicable TMDLs include only TMDLs which have been approved by the EPA before the issuance date of the permit. For TMDLs that EPA approves after the permit is issued, Ecology may establish TMDL-related permit requirements through a formal permit modification or through the issuance of an appealable administrative order. Ecology will base any decision to enforce requirements of TMDLs completed after the issuance of the permit on the determination that implementation of actions, monitoring or reporting necessary to demonstrate reasonable further progress toward achieving TMDL waste load allocations, and other targets, are not occurring and must be implemented during the term of the permit. For this reason, Ecology encourages WSDOT to participate in development of TMDLs within their jurisdiction and to begin implementation where appropriate.

S7 – Monitoring

Background

The federal stormwater rules require municipalities to propose a stormwater monitoring program for the term of the permit (40 CFR Part 122.26(d)(2)(iii)(D)). However, EPA provided few specific requirements of such programs. In the preamble to the federal rule (See pages 48049 - 48052 of the Federal Register, Volume 55, No. 222, November 16, 1990), EPA indicates that they favor ... *"a permit scheme where the collection of representative data is primarily a task that will be accomplished through monitoring programs during the term of the permit."* In the same text, they indicate that *"an estimate of annual pollutant loading associated with discharges from municipal stormwater sewer systems is necessary to evaluate the magnitude and severity of the environmental impacts of such discharges and to evaluate the effectiveness of controls which are imposed at a later time."*

Monitoring Objectives

WSDOT did not complete all of the monitoring studies that were required under the 2014 permit. Baseline highway runoff monitoring has been completed, however, the BMP effectiveness monitoring at highway sites and at WSDOT's maintenance facilities are ongoing. These studies are expected to complete before 2021 and the permit requires WSDOT to submit an Ecology approved QAPP to begin implementing the next facilities and highways BMP effectiveness evaluation studies.

WSDOT also participates in the Stormwater Action Monitoring (SAM) regional receiving water monitoring in Puget Sound and the Lower Columbia and conducts effectiveness studies per the requirements of S7.E of this permit. WSDOT was not included in the cost allocations for the 2013 permit but contributed funds to Puget Sound status and trends monitoring as required under WSDOT's 2014 permit. WSDOT is included in the cost allocations for regional receiving water monitoring in the 2019 permit. 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

WSDOT completed the seasonal first flush toxicity testing required in the 2009 permit and no toxicity was found. After reviewing the test results, Ecology believes information to be gained from further testing would be minimal and therefore eliminated the requirement for first flush toxicity testing in the 2014 permit. WSDOT also completed 2 years of sampling under the required baseline monitoring of rest areas, maintenance facilities, and ferry terminals in 2009 and 2014 permit cycles.

Specific Parameters of Interest

A special interest across the state exists for the below-indicated parameters. After careful examination of WSDOT land uses, potential sources, sampling capabilities and impacts, Ecology chose the following parameters to be pertinent to each WSDOT land use for monitoring under the 2009 and 2014 permits and will continue in the proposed 2019 permit, where applicable:

Baseline Monitoring	Metals ¹	Phthlates	PAH's	TPH ²	TSS	Herbicides ³	MBAS	Chlorides	Nutrients	Fecal Coliform	Temperature
5 Highways (Selected Based on AADT)	√	√	√	√	√	√		√	√ (TP and Orth-P only)	√	√
6 Regional Maintenance Facilities (1 Site Selected in each WSDOT Region)	√		√	√	√	√	√	√ (storage of deicers)	√ (TP, N/N, Ortho-P and TKN)		
1 Ferry Terminal (High-use)	√		√	√	√		√			√	√
2 Rest Areas (High-use)	√		√	√	√	√		√ (only if deicer is used)	√ (TP, N/N, Ortho-P and TKN)	√	√
	Metals	Phthlates	PAH's	TPH²	TSS	Herbicides³	MBAS	Chlorides	Hardness		
First Flush Toxicity-Chemical Analysis (3 Edge of Pavement, 3 w/same BMP type/ AADT)	√	√	√	√	√	√	√	√	√		
	Metals	Phthlates	PAH's	TPH	Total solids	Herbicides³	Particle size	Phenolics	Total Organic Carbon		
5 Sediment (annually at each highway site)	√	√	√	√ Dx only	√	√	√	√	√		

Notes/Acronyms

TP = Total phosphorus

Ortho-P = Orthophosphorus

N/N = Nitrate/Nitrite

TKN = Total Kjeldahl nitrogen

PAH = Polycyclic aromatic hydrocarbons

Temp = Temperature

¹Total and dissolved copper, zinc, cadmium and lead

²TPH=total petroleum hydrocarbons, Gx (gasoline) and Dx (diesel)

³Herbicide samples required only for those herbicides that WSDOT applies on-site, stores on-site or applies by vehicles parked on-site.

NOTES ON PARAMETERS

Metals total and dissolved – The monitoring of total metals is required by Ecology of many discharge types. Stormwater under the Industrial Stormwater General Permit as well as NPDES point sources are reported as total metals. Although total metals are not directly related to water quality standards, they are useful for comparisons with these other discharge types. Total metals can be used to estimate dissolved metals with a metals translator.

Metals in sediment – The sediment management standards require arsenic, cadmium, chromium, copper, lead, mercury, and zinc.

Hardness – Hardness is defined as the sum of the calcium and magnesium concentrations. At sufficiently high concentrations hardness salts can precipitate. The impact of many metals on receiving waters is hardness-based. In cases where stormwater released to receiving waters is at relatively high flows, stormwater hardness is of particular interest. Hardness is an inexpensive analysis

PAH's – Polycyclic Aromatic Hydrocarbons should be monitored. It has been found in road dust. Asphalt sealants have been found to be a considerable source. PAHs are also products of combustion from common sources such as motor vehicles and other gas-burning engines. Many of these compounds are highly carcinogenic at relatively low levels.

TPH –Gx (gasoline range) and –Dx (diesel range) – TPH is a mixture of many different compounds. Source of TPHGx includes gasoline spills, spilled oil on pavement, and chemicals used at home or work. Source of TPHDx includes spills or leaks from diesel engines, lube oils, heavy fuel oils and other semi volatile petroleum products. TPH has been found in at least 23 of the 1,467 National Priorities List sites identified by the Environmental Protection Agency (EPA).

TSS – The USGS has been a proponent of the Suspended-Sediment Concentration (SSC) method, as in the paper, “Comparability of Suspended –Sediment Concentration and Total Suspended Solids Data”; wrir 00-4191; August 2000. The value of SSC as an indicator of the physical impact of sediments on river and stream beds may be of value for issues such as salmonid spawning. But SSC is a measurement of all solids including sediments, so that large, heavier particles influence the SSC value far more than finer sediments. Total Suspended Solids (TSS) is more appropriate for water quality indications as it represents the concentration of smaller solids with better correlation to the adsorption of metals and some organics to small solids in the water column

Herbicides – Herbicides should only be analyzed in locations probable of picking up herbicides in runoff. For example, a high traffic area of a highway that is being monitored may only contain runoff from pervious pavement with no potential for picking up herbicides in the runoff. This analysis will depend on location of the stormwater monitoring site and should be limited to those herbicides used by WSDOT.

MBAS – MBAS is a surfactant (a surface-active substance) which dissociates in water and releases cations and anions. Examples of anionic surfactants are generally called fatty acid soaps and alkylsulfonic acid salts, which is the main component of synthetic detergent. MBAS is useful for estimating the anionic surfactant content of waters. Anionic surfactants have toxic effects on aquatic organisms and have been shown to affect fish behaviors based upon smell.

Nutrients – [Nutrients, particularly ammonia to nitrate/nitrite may have a considerable oxygen demand. Nutrients are commonly monitored for runoff from highway facilities; see Table 1.

Chlorides – The chloride parameter should be retained as it is a direct indicator of any de-icer use during the time period up to the storm event. It is more reliable, and more direct than attempting to keep up with the history of de-icer use at any particular location. The chloride test is an inexpensive one.

Fecal coliform – FC are present in virtually all stormwater discharges. Sources include urban wildlife, domestic wildlife, animal hauling, and illegal cross-connections of sanitary sewers. Because roadways are impervious surfaces, defecation on those surfaces is quickly washed into the storm drainage systems.

Temperature – Discharge permits, total maximum daily loads (TMDLs), and other pollution control programs must be designed to meet all elements of the state's temperature standards (WAC 173-201A-200-210, and 600-612).

Conductivity – is an inexpensive test which helps to estimate the amount of total dissolved salts and metals as the total amount of dissolved ions in the water.

Phthlates – Phthlates are ubiquitous in the environment, but very little data exists on its occurrence in stormwater runoff.

Phenolics – Phenolics are hydroxyl derivatives of benzene. This parameter will provide data on the presence of benzene is present in crude oil, the main source of a chemical which is used as a raw material for a wide range of products. Its one major downfall is its toxicity

PCBs – Approximately 60 percent of PCBs were used in electrical applications, primarily in dielectric fluids for transformers and capacitors. PCBs also were used in hydraulic and heat transfer systems, lubricants, gasket sealers, paints, plasticizers, adhesives, carbonless copy paper, flame retardants, brake linings, and asphalt.

Particle Size – The objectives of a grain-size analysis are to accurately measure individual particle sizes or hydraulic equivalents, to determine their frequency distribution, and to calculate a statistical description that adequately characterizes the sample

% Solids – Analyzing percent solids normalizes concentrations on a dry weight basis.

Total Organic Carbon (TOC) – The organic compound in water is composed of a variety of organic compounds in various oxidation states. TOC is a more convenient and direct expression of total organic content than either biological oxygen demand and chemical oxygen demand.

Caltrans Studies

The California Department of Transportation (Caltrans) conducted a study similar to the monitoring program described in this permit. The objectives from the 2003 Caltrans Discharge Characterization Study Report include:

- Monitoring to achieve compliance with California NPDES permit requirements;
- To produce scientifically credible data that represents runoff from Department-owned facilities; and
- To provide information useful to the Department for designing effective stormwater management strategies

The California study also included a three-year statewide stormwater characterization study to characterize runoff quality from the edge of pavement of highways, monitor sediment quality and characterize runoff toxicity. The purpose of the study was to use data to design and evaluate existing and/or potentially new BMPs and/or new BMP sites, to assess current stormwater management programs, provide a foundation for long-term management decisions and use the results to prioritize pollutants in runoff from Caltrans-owned facilities.

The Caltrans study found the following criteria to have a significant impact on data results examined from edge of pavement of highways:

- AADT level
- total event rainfall
- seasonal rainfall
- antecedent dry period

Caltrans found that pollutant concentrations increased with higher traffic levels on every pollutant analyzed, as seasonal precipitation increases, pollutant concentration decreased which indicated that dry season pollutants were more prominent due to the first flush theory and that first flush effect resulted in higher pollutant concentrations in runoff and lengthy build up of pollutants on surfaces such as highways resulted in a positive correlation between runoff and antecedent dry period.

Caltrans did not employ a receiving water quality study since the study objectives were not intended to apply directly to stormwater runoff discharges. Many constituents monitored did not have relevant water quality standards or objectives.

S8 – Reporting Requirements

- A. The federal stormwater rules at [40 CFR 122.42(c)] requires municipal stormwater permittees to submit an annual report. Ecology included the annual reporting requirement in the WSDOT permit, and clarified reporting requirements consistent with other provisions in the permit.
- B. Ecology modified items for inclusion in the annual report from the federal requirements for the following reasons:

- Ecology provides additional clarification about requirements in the portion of the report on the status of implementing the components of the stormwater management program. WSDOT must address compliance with the performance standards.
 - The EPA rules require reporting on annual expenditures. Ecology has provided clarification on what kind of information is required in the portion of the report on annual expenditures.
 - Ecology deleted the federal requirement for information on revisions to the assessment of controls from the annual report. The purpose of the federal requirement is to predict the effectiveness of Stormwater Management Plans in reducing pollutants discharged. Except for qualitative observations, it is not possible to estimate pollutant reductions annually without extensive monitoring. Ecology prefers the broader monitoring program outlined in S7 to estimate concentrations and loads from representative areas or basins, evaluate management actions and evaluate the effectiveness of selected Best Management Practices.
 - Ecology retained the EPA requirements to provide a summary of monitoring data as a separate monitoring report under Special Condition S7. In addition, Ecology has requested a description of any other stormwater monitoring programs.
- C. Ecology does not want the annual reporting requirement to unnecessarily take resources away from program implementation. However, it is necessary to have enough information to evaluate compliance with permit requirements and prepare the next permit.

IDDE Reporting Data and Format (Appendix 2)

This appendix is provided in WSDOT 2019 draft permit to document the information required to be submitted as well as the format for the Annual Report submittal, as described in the IDDE section of the 2019 draft permit. Ecology may remove this appendix when the WQWebIDDE is completed, prior to issuance of the Permits.

General Conditions

General Conditions are based directly on state and federal law and regulations and have been standardized for all NPDES permits issued by the Ecology. Some of these conditions were developed for different types of discharges. Although Ecology is required by federal regulation to include them in the permit, they may not be strictly applicable.

- G1. Requires discharges and activities authorized by the draft permit to be consistent with the terms and conditions of the permit in accordance with 40 CFR 122.41.
- G2. Requires WSDOT to operate and maintain all stormwater pollution control facilities and system with terms and condition of this Permit.
- G3. Require WSDOT to notify Ecology immediately of all spills that may threaten human health and environment within 24 hours. In addition, spills that may cause bacterial contamination of shell fish must also reported to the State, Department of Health shellfish program.
- G4. This Permit prohibits bypass unless certain conditions exist in accordance with 40 CFR 122.41(m).
- G5. Require WSDOT to allow Ecology to access the facilities and conduct inspections of the facilities and records related to this Permit in accordance with 40 CFR 122.41(i), Chapter 90.48.090 RCW, and WAC 173-220-150(1)(e).
- G6. For discharges with reasonable likelihood of adversely affecting human health or the environment, this Permit requires WSDOT take all reasonable steps to minimize or prevent any discharge in violation of this Permit.
- G7. Specifies that the Permit does not convey property rights in accordance with 40 CFR 122.41(g).
- G8. Prohibits WSDOT from using the Permit as a basis for violating any laws, statutes or regulations in accordance with 40 CFR 122.5(c).
- G9. This Permit contains certain sets of monitoring requirements to insure compliance. The monitoring shall be based on representative samples of the discharge that must also include the actual flow. The samples shall be tested by an accredited laboratory based on certain pre-prescribed procedures and the results shall be retained by WSDOT for the life of the permit plus five years, or longer in case of enforcement or other litigations.
- G10. Prohibits the reintroduction of removed substances back into the storm sewer system or to waters of the state in accordance with 40 CFR 125.3(g), Chapter 90.48.010 RCW, Chapter 90.48.080 RCW, WAC 173-220-130, and WAC 173-201A-040.
- G11. Invokes severability of permit provisions in accordance with Chapter 90.48.904 RCW.
- G12. Identifies conditions for revoking coverage under the general permit in accordance with 40 CFR 122.62, 40 CFR 124.5, WAC 173-226-240, WAC 173-220-150(1)(d), and WAC 173-220-190.
- G13. Identifies the requirements for transfer of permit coverage in accordance with 40 CFR 122.41(l)(3) and WAC 173-220-200.

- G14. Identifies conditions for revoking coverage under the general permit in accordance with 40 CFR 122.62, 40 CFR 124.5, WAC 173-226-240, WAC 173-220-150(1)(d), and WAC 173-220-190.
- G15. Requires WSDOT to notify Ecology when facility changes may require modification or revocation of permit coverage in accordance with 40 CFR 122.62(a), 40 CFR 122.41(l), WAC 173-220-150(1)(b), and WAC 173-201A-060(5)(b).
- G16. Defines appeal options for the terms and conditions of the general permit and of coverage under the Permit by an individual discharger in accordance with Chapter 43.21B RCW and WAC 173-226-190.
- G17. Any person who is found guilty of willfully violating the terms and conditions of this Permit shall be deemed guilty of a crime, and upon conviction thereof shall be punished by a fine of up to ten thousand dollars (\$10,000) and costs of prosecution, or by imprisonment in the discretion of the court. Each day upon which a willful violation occurs may be deemed a separate and additional violation. Any person who violates the terms and conditions of a waste discharge permit shall incur, in addition to any other penalty as provided by law, a civil penalty in the amount of up to ten thousand dollars (\$10,000) for every such violation. Each and every such violation shall be a separate and distinct offense, and in case of a continuing violation, every day's continuance shall be deemed to be a separate and distinct violation. Describes the penalties for violating permit conditions in accordance with 40 CFR 122.41(a)(2).
- G18. Requires WSDOT to reapply for coverage 180 prior to the expiration date of this General Permit in accordance with 40 CFR 122.21(d), 40 CFR 122.41(b), and WAC 183-220-180(2). An expired permit continues in force and effect until a new permit is issued or until Ecology cancels the Permit. Only Permittees who have reapplied for coverage under this Permit are covered under the continued permit. This section is derived from Chapter 90.48.170 RCW.
- G19. Requires responsible officials or their designated representatives to sign submittals to Ecology in accordance with 40 CFR 122.22, 40 CFR 122.22(d), WAC 173-220-210(3)(b), and WAC 173-220-040(5).
- G20. Require WSDOT to notify Ecology in the event that they are unable to comply with the permit or is out of compliance with the permit.
- G21. Require WSDOT shall meet the conditions of 40 CFR 122.41(n) regarding "Upsets." "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of WSDOT. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

APPENDIX A

Response to Comments of Draft WSDOT General Permit

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Introduction

On December 5, 2018, Ecology filed a notice with the State Register to reissue the Washington State Department of Transportation (WSDOT) NPDES and State Waste Discharge General Permit for their Municipal Separate Storm Sewer System (MS4s). Ecology invited public comment on the draft permit. The public comment period ended February 5, 2019.

Organization of the Response to Comments

Ecology organized this Response to Comments by referencing comment numbers from each entity and providing responses to the comments. The comments received are enumerated for ease of reference. Those who commented are listed below. Their comments can be read in full on our website at <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/WSDOT-Municipal-Stormwater-Permit> or use the link for each commenter to go directly to their comment presented in Appendix B.

List of Commenters

- Betteridge, Russell
- City of Edmonds
- City of Vancouver
- Haase, Peter
- IDEXX – Jody Frymire
- Nature Conservancy, The
- Northwest Indian Fisheries Commission
- Puget Soundkeeper
- WA State Department of Transportation (WSDOT)

Response to Comments

Responses to comments are presented in a separate table for each commenter. Comments received are in Appendix B. Ecology received comments from 9 different commenters on the draft 2019 permit.

Many of the comments received are related to the implementation of the 2014 permit conditions by WSDOT. Comments on implementation are beyond the scope of the draft permit comment period. Ecology did not respond to implementation comments here. Documents and reports related to the 2014 permit implementation can be found online using the Ecology PARIS database at <https://fortress.wa.gov/ecy/paris/PermitLookup.aspx>. They can also be found online, by searching for “PARIS – Access Washington.” From the top menu click on “Permits/Applications” >>> “Document Search” >>> “Permit number,” then enter “WAR043000.”

Ecology’s Response to Comments focuses on the comments to the 2019 draft permit language.

Comments received from the [Washington State Department of Transportation](#)

Draft 2019 Permit - Response To Comments		
Commenter	Comment #	Response to Comment
Washington State Department of Transportation (WSDOT)	1, 2, 3, 4, 5, 8, 10, 12, 13, 15, 17, 18, 21, 22, 26, 28, 31	Clarifying and consistency edits, typos, and grammar corrections are made in permit
	6	Language in S1.B.2 is clear. The suggested language is redundant.
	7	Added a section reference to shorten the language
	9	Edits made for consistency with G3
	11	<p>Clarifying that “technical standards” include the following: “minimum requirements, thresholds, adjustments, and definitions” in the HRM.</p> <p>In addition, the technical standards include guidance and criteria in HRM on conducting engineering and economic feasibility analysis for siting and selecting BMPs. Such analysis may find BMPs in the HRM infeasible for some projects in their particular settings; and/or special design considerations would apply. Where WSDOT determines BMPs in the HRM are infeasible, HRM provides guidance for WSDOT project engineer to seek an alternative engineering approach approved by Ecology as discussed in Chapter 2 (and in other sections) of HRM. Chapter 2 also provides stormwater management guidance on ferry terminals and on the use of LID BMPs for other (non-roads and highways) WSDOT owned and operated facilities such as maintenance yards, park and ride lots, and rest areas.</p> <p>For WSDOT projects in western Washington with a federal nexus, projects may have to comply with other restrictions and standards, as determined by NOAA Fisheries and US Fish and Wildlife Services under the Endangered Species Act (ESA), Section 7 consultation. Compliance with ESA is a permit requirement based on the 2009 settlement agreement between Ecology, WSDOT, and Puget Soundkeeper Alliance. The HRM provides additional guidance on ESA compliance in Chapter 2.</p>
	14	Consistent with Phase I & II permits, clarification added in the permit that maintenance standard is not a measure of a facility’s required condition at all times.
	16	Edits made for clarity and removing redundancy
	19	Clarified that Ecology approval of QAPP does not have to be through letter.
	20	Per S5.A.2, WSDOT will provide budget information to Ecology upon request. This information is not required in the annual report.
	23	For consistency with S8 and G9, increased records retention timeline from 3 to 5 years.
24	Deleted reference to the appendix number for the management of street waste guidelines since the appendix number changed in the 2019 version of the <i>Stormwater Management Manual for Western Washington</i> .	

25	Clarified that solids generated from maintenance of the MS4 may be reclaimed, recycled, or reused when allowed by local Health Department codes and local ordinances.
27	In the definition of the “Component”, the reference to “Appendix 5 of this permit” was corrected to “Appendix 5 of the 2014 permit.” This is because the 2014 SWMP is the plan WSDOT will be operating under while their stand-alone SWMP is being developed.
29	Clarified the definition for “Regional Stormwater Monitoring Program” include monitoring in the “Lower Columbia River basin” in addition to monitoring in the Puget Sound basin.
30	Removed the publication dates of September/August 2019 for these manuals since, as of this date, these manuals have not been published on those dates.
32	Equivalency added to the Appendix 1 title for clarity.
33	<p>HRM provides appropriate management guidance for the stormwater runoff associated with the transportation activities. Ecology considers guidance in HRM to provide protection of the receiving waters from impacts of the stormwater runoff to the maximum extent practicable (MEP) and being equivalent to the guidance in Ecology manuals.</p> <p>In addition to guidance in Chapters 3, 5, and 6, the HRM contains equivalent guidance in other chapters as explained below:</p> <ul style="list-style-type: none"> ▪ Chapter 4 of HRM covers hydrologic approaches to modeling runoff and sizing BMPs that Ecology considers to be equivalent. Chapter 4 also provides design criteria and site suitability criteria for infiltration facilities that Ecology considers providing equivalent protection of the waters of state. ▪ Chapter 2 includes engineering and economic feasibility criteria for siting and selection of BMPs. When the engineering and economic feasibility analysis finds BMPs in the HRM infeasible, HRM provides guidance for WSDOT project engineer to seek an alternative engineering approach approved by Ecology as discussed in Chapter 2 (and in other sections) of HRM. Chapter 2 also provides stormwater management guidance on ferry terminals and on the use of LID BMPs for other (non-roads and highways) WSDOT owned and operated facilities such as maintenance yards, park and ride lots, and rest areas. ▪ Chapter 1 provides important regulatory context for the guidance included in HRM for WSDOT engineers to follow in design and application of the various available BMPs, measures, and protocols to mitigate stormwater impacts from WSDOT owned and operated transportation related facilities. These include a discussion of the guidelines and criteria in the HRM to comply with Ecology requirements and federal requirements related to ESA, NOAA, and USFWS. Compliance with ESA is a condition of the 2014 and 2019 permits based on the 2009 settlement agreement between Ecology, WSDOT, and Puget Soundkeeper Alliance. The HRM provides additional guidance on ESA compliance in Chapter 2. <p>Definitions for terms used in the HRM chapters are also considered equivalent.</p>

	34	This comment is addressed under comment #33.
	35	WSDOT obligations are included in the TMDL implementation plan.
	36	Rearranged TMDL list in Part 2 to follow in alphabetic order.
	37	Adjusted the dates associated with the stormwater data submission into EIM.

Comments received from [Puget Soundkeeper Alliance](#)

Draft 2019 Permit - Response To Comments		
Commenter	Comment #	Response to Comment
Puget Soundkeeper Alliance (PSA)	I. General Comments	
		<p>Ecology believes the proposed 2019 stormwater permit protects the state waters from adverse impacts of stormwater runoff from WSDOT roads and highways within the areas covered by the state Phase I and II municipal permits to the maximum extent practicable (MEP).</p> <p>The basis for the requirements and conditions in the 2019 permit has remained the same as that in the current 2014 permit. The permit requires WSDOT to treat and infiltrate runoff from roads and highways as the primary control mechanisms.</p> <p>The permit also requires WSDOT to conduct monitoring studies aimed at improving the suite of BMPs available to WSDOT for application in roads and highways settings. Such studies include adding compost layers or incorporating compost material into the vegetation on roadside embankments to improve the embankment’s capability to remove pollutants.</p>
	II. Comments regarding permit implementation	
	A.1.a.i – iii, A.1.b.i and ii, A.1.c.i and ii, A.1.d, A.2.a	<p>Many of the comments provided are related to the implementation of the 2014 permit conditions by WSDOT. Ecology response to comments focuses on the comments to the 2019 draft permit language.</p> <p>Updates on the status of WSDOT stormwater inventory mapping and other activities required under the permit are provided in WSDOT’s Annual Reports and Monitoring Reports. These reports can be obtained online through PARIS data base available at Ecology web site: https://fortress.wa.gov/ecy/paris/PermitLookup.aspx or online, by searching for “PARIS – Access Washington”, then from the top menu click on “Permits/Applications” and choose “Document Search” and for “Permit number” enter “WAR043000.”</p>

A.1.a.iv and v	In 2008, the PCHB issued a ruling that permit conditions allowing for a compliance timing outside of 3 years do not by themselves establish a violation of Clean Water Act, 33 U.S.C. § 1342(p)(4).
A.1.a.vi	S5.C.3e and S5.C.3f of the permit include provisions for requesting mapping information from WSDOT.
A.1.c.iii - v	<p>On culvert replacement, this permit covers WSDOT municipal separate storm sewer system within Phase I and II permit coverage areas. Where culverts are designed to carry stormwater runoff from the existing areas covered under this permit, retrofit opportunities may exist. The prioritization process in Section 6 of the 2014 SWMP (Appendix 5) could incorporate such retrofit opportunities.</p> <p>WSDOT will make updates to its SWMP annually and makes the updated SWMP available to public for their input. Such updates provide WSDOT the opportunity to update the stormwater retrofit the prioritization process and scoring criteria reflected in Table 6-1 of its SWMP, Appendix 5, 2014 permit.</p> <p>Updates to the future SWMP could also incorporate considerations of the environmental justice areas (available resources: USEPA’s EJ Screen, or Washington State Department of Health’s Washington State’s Health Disparity Map) and the Urban Mortality Runoff Syndrome in salmon-bearing streams.</p> <p>The Urban Mortality Runoff Syndrome (URMS) in salmon-bearing streams is a subject of some current research studies aimed at better understanding of the agent(s) involved in causing URMS. These studies also include research to find and use BMPs that can successfully eliminate UMRS. Where these studies result in new BMPs or action items being required in WSDOT permit, the Factsheet will be updated to provide the necessary background and justification for the new requirements.</p> <p>The WSDOT permit requires treatment and infiltration of runoff as the primary method of managing stormwater runoff from its road, highways, and facilities. WSDOT’s more recent research studies have focused on innovative BMPs that include adding materials/treatment layers to existing BMPs to improve their pollutant removal capabilities. Examples include adding/incorporating compost to vegetation on roadside embankments or adding compost material or incorporating oyster shells to bioswales treating runoff from WSDOT maintenance facilities for improved removal of pollutants including removing phosphorus in the stormwater discharge.</p>
A.1.c.iv - vi	<p>The level of effort for WSDOT to meet the permit retrofit requirement is defined in monetary terms based on the 2009 PCHB settlement between Ecology, WSDOT, and Puget Soundkeeper Alliance. The stormwater retrofit prioritization process and rational for assigning weighting points in Table 6-1 are explained in the SWMP, section 6.6, 2014 permit. Reference to this prioritization process and scoring criteria is added to S5.C.6 of the 2019 permit.</p> <p>WSDOT updates the prioritization scores based on new information and conditions.</p>

	A.2.b	The effectiveness monitoring studies are expected to be complete in 2021 or sooner. Special Condition S7.D requires WSDOT to submit WSDOT's next/future monitoring study QAPP within one year following submittals of both the facilities and highways study's final monitoring reports or no later than October 1, 2021.
Puget Soundkeeper Alliance (PSA)	III. Questions and concerns regarding permit language	
	A.1.a A.1.b	<p>The Pollution Control Hearings Board issued an Order regarding S4.F (PCHB 07-021-023, -026-030, and -037 Condition S4) and required Ecology to use the specific language in this provision.</p> <p>S4.F may apply to situations that are either single events or ongoing violations of water quality standards in receiving waters. The information about the receiving water and about the MS4 discharge must be credible such as data from a laboratory obtained through documented methods or data for a field-measured parameter with a documented collection method.</p> <p>Ecology will respond according to the nature of and reason for the discharge. See Ecology guidance for S4.F notifications at: https://fortress.wa.gov/ecy/publications/documents/0910068.pdf.</p> <p>For discharges that could constitute a threat to human health, welfare, or the environment, General Condition G3 of the permit requires notification within 24 hours and action taken to minimize the threat.</p>
	A.1.c	S4.F provides for an Adaptive Management Response when a WSDOT discharge is causing or contributing to a violation of Water Quality Standards; a process that requires the involvement of both WSDOT and Ecology to address and eliminate the violation of Water Quality Standards (WQS).
	A.2	This permit requires compliance with ambient water quality standards, stormwater discharges are not required to meet specific pollutant concentration limits, but they must not cause or contribute to WQS violations in the receiving water. In the event that a WQS violation is identified by either Ecology or the permittee, Ecology will direct the permittee to address the violation pursuant to the defined process contained in S4.F.
	IV. General Concern	
		Ecology appreciates PSA's comments to improve this permit. Unlike the Municipal Stormwater permits for Eastern and Western WA, Phase I and II municipalities include over 90 unique entities as permittees. WSDOT permit covers only one entity as permittee. This eliminates the range of variabilities and the complexity associated with the administration and implementation of this MS4 permit as compared to the permits to cover 90+ different Phase I and II municipalities. Therefore, as provided in WAC 173-226, Ecology followed the routine administrative procedures associated timelines for re-issuance of this permit.

Draft 2019 Permit - Response To Comments	
Commenter	Response to Comments
Northwest Indian Fisheries Commission (NWIFC)	<p>Ecology believes the proposed 2019 stormwater permit protects state waters from adverse impacts of stormwater runoff from WSDOT roads and highways within the areas covered by the state Phase I and II municipal permits to the maximum extent practicable (MEP). In addition, based on a memorandum of agreement between Ecology and WSDOT, WSDOT applied the pollution control and treatment standards contained in WSDOT stormwater manual (the HRM) to all its roads and highway projects state-wide, including areas outside of the permit coverage areas for Phase I and II communities.</p> <p>Toxics and other pollutants in urban stormwater runoff have been linked to pre-spawn mortality in fish and bio-accumulation of toxicants affecting the ecosystem including Southern Resident Orca Whales. The Urban Mortality Runoff Syndrome (URMS) in salmon-bearing streams is also the subject of current research studies involving filtration through bioretention media. The regional status and trend monitoring effort (SAM) involving federal, state, and local government agency representatives includes studies aimed at better understanding of the agent(s) involved in causing URMS. These studies are also looking into effective BMPs including, filtration through various bioretention media, that can successfully remove the toxic agents responsible. This permit requires WSDOT to contribute funding towards these studies.</p> <p>WSDOT permit requires treatment and infiltration of runoff as the primary method of treating stormwater runoff from WSDOT roads and highways and their associated facilities. In addition, the permit requires WSDOT to conduct its own monitoring studies aimed at improving the suite of BMPs available to WSDOT for application in roads and highways settings.</p> <p>WSDOT’s more recent research studies have focused on innovative BMPs that include adding materials/treatment layers to existing BMPs to improve their pollutant removal capabilities such as adding/incorporating compost to vegetation on roadside embankments or adding compost material or incorporating oyster shells to bioswales treating runoff from WSDOT maintenance facilities for improved removal of pollutants including removing phosphorus in the stormwater discharge. Where these and other research studies result in new BMPs or action items being required in the WSDOT permit, the Factsheet will be updated to provide the necessary background and justification for these new requirements.</p>

Draft 2019 Permit - Response To Comments		
Commenter	Regarding	Response to Comment
The Nature Conservancy (TNC)	1. Establish Nature-Based Solutions	<p>The stormwater permit requires the use of low impact development (LID) techniques in managing stormwater from WSDOT roads and highways and their associated facilities as described in WSDOT’s Highway Runoff Manual (HRM). These techniques use distributed stormwater management practices to mimic hydrologic processes prior to development. Unlike residential or commercial developments, WSDOT roads and highways generally have limited opportunities for implementing LIDs within their right of way. The WSDOT permit requires treatment and infiltration of runoff as the primary method of managing stormwater runoff from WSDOT roads and highways. For management of WSDOT other facilities such as maintenance yards, park and ride lots, and rest areas, WSDOT will use LIDs in Ecology stormwater manuals.</p> <p>WSDOT has developed stormwater retrofit prioritization process and scoring criteria found in Table 6-1 of its Storm Water Management Plan (SWMP), Appendix 5, 2014 permit. WSDOT updates their SWMP annually and will make the updates available to public for their input. Updates to the future SWMP provide the opportunity to look into, and incorporate considerations of, the environmental justice areas (available resources: USEPA’s EJ Screen, or Washington State Department of Health’s Washington State’s Health Disparity Map).</p>
	2. Build additional support for fixing legacy pollution with GSI retrofits	<p>The 2019 permit requires the use of low impact development (LID) approaches for mitigating stormwater runoff impacts from WSDOT new and redevelopment projects. In addition, the permit retrofit requirements are intended to address legacy pollution with associated WSDOT roads and highways in priority areas based on WSDOT’s retrofit prioritization process and scoring criteria within budgetary constraints. WSDOT updates the prioritization scores based on new information and conditions.</p> <p>The regional status and trend monitoring effort (SAM), involving federal, state, and local government agency representatives, is currently conducting research studies aimed at better understanding of the agent(s) that link death of Coho salmon to tire residues. SAM studies are also looking into effective BMPs, including filtration through various bioretention media, which can successfully remove the toxic agent(s) responsible. This permit requires WSDOT to contribute funding towards these studies.</p> <p>In addition, under this stormwater permit, WSDOT has conducted its own research studies focused on innovative BMPs including adding layers of treatment media to existing BMPs to improve their pollutant removal capabilities. Examples include adding/incorporating compost to vegetation on roadside embankments or adding compost material or incorporating oyster shells to bioswales treating runoff from WSDOT maintenance</p>

		facilities for improved removal of (toxic) pollutants including removal of phosphorus (a nutrient responsible for algal growth in fresh water) in the stormwater discharge. Where these and other research studies result in new BMPs or action items being required in WSDOT permit, the Factsheet will be updated to provide the necessary background and justification for the new requirements.
	3. Incentivize voluntary, private investment in GSI retrofits solutions	The permit allows the use of innovative stormwater management solutions on a site-specific basis, including application of innovative BMPs and collaboration and partnerships aimed at addressing local and watershed pollution issues.
	4. Plan pollution fixes with a broad, watershed scale perspective	<p>Thank you for the thoughtful comments. Please see responses to comment 3 above.</p> <p>WSDOT has a number of new and innovative stormwater treatment technologies that either have gone through or are currently undergoing pilot testing under Ecology's Emerging stormwater treatment technologies (TAPE) program. Testing of innovative technologies under TAPE allow WSDOT to use new BMPs to address stormwater pollutants generated at roads and highways and their associated facilities.</p>

Comments received from [IDEXX – Jody Frymire](#)

Draft 2019 Permit - Response To Comments	
Commenter	Response to Comments
IDEXX - Jody Frymire	Thank you for your comments on WSDOT's draft 2019 permit. The change in the Rule language became effective after the draft 2019 permit was public noticed. The action items and bacterial controls associated with the EPA approved TMDL in this permit have been specified in terms of fecal coliform bacteria. Therefore, for consistency, the permit requires compliance with the fecal coliform requirements of the applicable TMDLs.

Comments received from [City of Vancouver](#)

Draft 2019 Permit - Response To Comments	
Commenter	Response to Comments
City of Vancouver	Thank you for your comments on WSDOT's Highway Runoff Manual (HRM). WSDOT is the author and keeper of the HRM. Ecology will pass these comments to WSDOT.

Comments received from [City of Edmonds](#)

Draft 2019 Permit - Response To Comments	
Commenter	Response to Comments
City of Edmonds	<p>The focus of this permit is reducing adverse impacts of stormwater runoff from WSDOT's roads and highways and their associated facilities such as maintenance yards, park and ride lots, and rest areas within the permit coverage areas for the Phase I and II communities. The permit does not provide guidance or regulate conveyance system design and maintenance. The standards and requirements in WSDOT's Highway Runoff Manual (HRM) are considered to provide equivalent protection of the state water quality standards as Ecology's stormwater manuals. Ecology's stormwater manuals do not provide conveyance design and maintenance standards.</p> <p>Where culverts are designed to carry stormwater runoff from the existing areas covered under this permit, retrofit opportunities may exist. The prioritization process in Section 6 of the 2014 SWMP (Appendix 5) could incorporate such retrofit opportunities. WSDOT will make updates to its SWMP annually and makes the updated SWMP available to the public for their input. Such updates provide WSDOT the opportunity to update the stormwater retrofit prioritization process and scoring criteria reflected in Table 6-1 of its SWMP, Appendix 5, 2014 permit.</p>

Comments received from [Russell Betteridge](#)

Draft 2019 Permit - Response To Comments	
Commenter	Response to Comments
Russell Betteridge	<p>Thank you for your comments on WSDOT's draft 2019 permit. Municipal Separate Storm Sewer System (MS4) is specifically defined in the federal regulations and it is included in the permit as shown below:</p> <p>"Municipal Separate Storm Sewer System" means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):</p> <ul style="list-style-type: none"> ▪ owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of wastes, storm water, or other wastes, including special districts under State Law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the States; ▪ designed or used for collecting or conveying stormwater; ▪ which is not a combined sewer; and ▪ which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2. ▪ which is defined as large" or "medium" or "small" or otherwise designated by Ecology pursuant to 40 CFR 122.26.

Comments received from [Peter Haase](#)

Draft 2019 Permit - Response To Comments	
Commenter	Response to Comments
Peter Haase	Thank you for your comments on WSDOT's draft 2019 permit. The permit language and its requirements are consistent with the federal and state laws, regulations, and guidelines aimed at protecting waters of the state of Washington from stormwater runoff discharges associated with WSDOT's roads and highways and their associated facilities.

APPENDIX B

Comments Received on Draft WSDOT General Permit

List of Comments Received

Betteridge, Russell

City of Edmonds

City of Vancouver

Haase, Peter

IDEXX

Nature Conservancy, The

Northwest Indian Fisheries Commission

Puget Soundkeeper Alliance

WA State Department of Transportation (WSDOT)

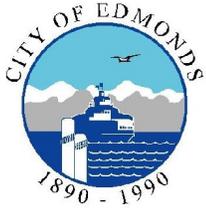
Russell Betteridge

The permit designates the stormwater systems within WSDOT's control as "Municipal Separate Storm Sewer System (MS4)". This is fundamentally flawed since WSDOT is not a municipal corporation at all. They say they are "The Washington State Department of Transportation is the steward of a multimodal transportation system and responsible for ensuring that people and goods move safely and efficiently. In addition to building, maintaining, and operating the state highway system, WSDOT is responsible for the state ferry system, and works in partnership with others to maintain and improve local roads, railroads and airports, as well as to support alternatives to driving, such as public transportation, bicycles and pedestrian programs." AND THEY "Operates and maintains 18,600 lane miles of state highway; Owns, operates and maintains nearly 3,300 bridge structures; Runs the largest ferry system in the nation that moves 24.2 million passengers and 10 million vehicles a year; Partners with 31 public transportation systems to provide more than 220 million passenger trips a year; Owns three Talgo train sets in the Amtrak Cascades fleet and manages the Palouse River and Coulee City Rail system.

I suggest you name their system the Multimodal Transportation System's Separate Storm Sewer System (MTS5) to further differentiate their system from MS4 which they often connect AND discharge to directly. WSDOT is often the headwaters of the Stormwater network connected to local creeks, streams, rivers and the Puget Sound.

City of Edmonds

See attached letter requesting the inclusion of culvert pipes into section S5.C.7.c.



CITY OF EDMONDS

121 5TH AVENUE NORTH · EDMONDS, WA 98020 · 425-771-0220 · FAX 425-672-5750
Website: www.edmondswa.gov

DAVE EARLING
MAYOR

PUBLIC WORKS DEPARTMENT

Engineering Division

January 31, 2019

Foroozan Labib
Washington State Department of Ecology
PO Box 47696
Olympia, WA 98504

RE: DRAFT WSDOT Municipal Stormwater Permit

To Whom It May Concern,

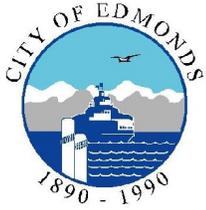
We thank you for the opportunity to comment on the proposed WSDOT Municipal Stormwater Permit. The City of Edmonds applauds the effort to align this permit with the Phase 1 & Phase 2 permits and would encourage any further revisions to this affect.

We only wish to suggest one improvement to Section S5.C.7.c (maintenance of catch basins and inlets). We request that said section be revised with additional language to include ‘culvert pipes’ as a feature subject to the requirements of this section, namely annual inspection.

We believe some of WSDOT’s most environmentally sensitive areas are the culverts which drain creeks or other potential aquatic habitats underneath the barriers created by roadways. It is also well known that WSDOT has recently been ordered to correct those culverts which are known fish barriers. However, it is not clear in our experience that WSDOT’s maintenance activities, as it relates to culvert pipes and watercourses, has been sufficient to protect aquatic habitat and ensure fish passage at culverts which did not present a barrier when well maintained. A recent records request turned up zero maintenance records for the previous 10-years for a WSDOT maintained culvert within our jurisdiction.

Furthermore, we believe these water courses are typically large in nature, carrying significant flows which, when not well maintained, can create large flooding events in a very short amount of time or divert creek flows to areas not intended for fish passage. Such flooding events not only impact aquatic habitat by way of additional erosion, pollutant loading, and fish stranding, but can also have large impacts on human property, safety, and well-being.

Accordingly, we believe this section should be revised to clearly include “culvert pipes” as a feature to be maintained under the provisions of Section S5.C.7.c. Alternatively, a definition of “inlet” which clarifies that it includes any location where runoff enters a piped system, regardless of formal structure type, would also meet the intent.



CITY OF EDMONDS

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DAVE EARLING
MAYOR

PUBLIC WORKS DEPARTMENT

Engineering Division

Additionally, we have reviewed the *Highway Runoff Manual* referenced in the permit document and did not find a section specifically addressing culvert maintenance or watercourse maintenance. We believe the suggested permit revision must be accompanied by a required revision to the runoff manual to further define WSDOT's approach to meeting this requirement.

Thank you for your time and your consideration.

Sincerely,

Zachary Richardson, P.E.
Stormwater Engineer, City of Edmonds

City of Vancouver

Comments are for the draft Highway Runoff Manual Redline Version:

Section 1-2.1 Local Requirements: (page 1-2 clean) 7th paragraph refers to Sections 2-6 and 2-7. These sections do not exist.

Section 5 IN.02 Infiltration Pond (page 5-137 clean) Site Design Elements Groundwater Issues: refers to incorrect Site Suitability Criteria...should be SSC #3

Peter Haase

It is not possible for a citizen, like me, to read, understand, and accept the document. I rely on the experts and professional "watchdogs." However, since the most nasty of storm water generally comes from roads, it behooves the WaDOT to be held to very high standards and expectations for controlling and treating that storm water. I hope this permit will require that.

IDEXX - Jody Frymire

Thank you for the opportunity to submit comment; please see my attached comment.

Foroozan Labib
WSDOT Municipal Permit Comments
Washington State Department of Ecology
P.O. Box 47696
Olympia, WA 98504-7600

Document: WSDOT Municipal Stormwater NPDES General Permit

January 29, 2019

Dear Foroozan Labib,

IDEXX appreciates the opportunity from the State of Washington Department of Ecology (Ecology) to submit a comment for the Washington State Department of Transportation (WSDOT) Municipal Storm Water National Pollutant Discharge Elimination System (NPDES) General Permit. At this time, IDEXX would like to request Ecology to consider the following comments.

1. Recommends and supports changes to the bacteria parameter for Municipal Storm water NPDES General Permits from fecal coliforms to either *E. coli* and/or enterococci.

Rational: *E. coli* and enterococci are more protective indicators of fecal contamination versus fecal coliforms.

Fecal coliform bacteria are commonly identified as being thermotolerant bacteria (able to grow at 44.5°C) [1]. Thermotolerant bacteria consists of *E. coli*, Klebsiella, Enterobacter, and Citrobacter species [1,2]. When testing for fecal coliforms, the population of the bacteria present can affect the fecal coliform results, for example: Klebsiella, Enterobacter, & Citrobacter species are false-positive indicators of fecal contamination as they are from nonfecal origin [2]. It has been found, up to 15% of Klebsiella (nonfecal origin) are thermotolerant and up to 10% of *E. coli* are not thermotolerant, thus potentially causing an error rate of 25% when testing for fecal coliforms [3]. *E. coli* is the only bacteria of the coliform bacteria group that comes from the intestinal tract and found to be more specific to the detection of fecal contamination, so much so, that *E. coli* is the definitive indicator of fecal contamination in US drinking water regulations [3,4] and is the recommended bacterial indicator for fecal contamination in recreational fresh water, as part of the 2012 U.S. EPA Recreational Water Quality Criteria recommendations [5].

Within marine waters, studies show enterococci as compared to other fecal contamination indicators, have a higher survival rate and enterococci show a direct association with risk of illness [6,7]. The European Union (EU), uses enterococci as an indicator of fecal contamination for recreational waters, as well as in drinking water, and additionally enterococci are part of the U.S. EPA 2012 Recreational Water Quality Criteria and included by the World Health Organization as recommended bacteria indicator for fecal contamination for recreational water [5,7].

2. Recommends revising the bacteria parameter Laboratory Method, listed on page 100, from SM9221E to include EPA-approved methods at 40 CFR Part 136.

Rational: We acknowledge the EPA doesn't provide federal requirements for analytical procedures for storm water; however, the EPA guidance is to follow EPA-approved methods included at 40 CFR Part 136 [7,8]. In revising the specific method for bacteria parameters to include EPA approved methods, allows laboratories to choose a method that may be more cost effective and improve workflow.

As stated in the WSDOT Permit Fact Sheet, under the Storm Water Problem section, it's noted human health and drinking water are impacted by storm water. In changing the bacteria parameters to a more protective indicator, of either *E. coli* or enterococci, storm water sample results will better correspond with recreational and drinking water sample results, which report (or will soon be reporting) as *E. coli* or enterococci [6]. IDEXX appreciates the opportunity to provide this comment and hopes Ecology will consider this suggestion as an additional way to protect human health. We look forward to the next steps in the rule making process.

Respectfully submitted,



Jody Frymire

Regulatory Affairs Associate, IDEXX Water | One IDEXX Drive | Westbrook, Maine 04092 USA
idexx.com/water | jody-frymire@idexx.com | Tel: +1 207 556 4840

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6. Washington State Department of Ecology – Updates to the standards. Date accessed: January 18, 2019
<https://ecology.wa.gov/Water-Shorelines/Water-quality/Freshwater/Surface-water-quality->

[standards/Updates-to-the-standards](#)

7. U.S. Environmental Protection Agency, Office of Wastewater Enforcement and Compliance Permits Division. EPA 833-F-93-002. *NPDES Storm Water Questions and Answer Document*. Washington, DC: Diane Publishing; 1992.
8. U.S. Environmental Protection Agency, Office of Water. EPA 833-B-92-001. *NPDES Storm Water Sampling Guidance Document*. Washington, DC; 1992.

February 5, 2019

Foroozan Labib
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

RE: Washington State Department of Transportation NPDES Permit

Dear Mr. Labib,

On behalf of The Nature Conservancy of Washington and our 130,000 supporters across the state, I write to provide comment on the Washington State Department of Transportation National Pollutant Discharge Eliminations System General Permit that you have provided for public consideration.

Washington State's Puget Sound is a unique feature in the United States. It is the largest estuary in the country by volume and connects more than 10,000 rivers, streams, and creeks from across Washington State with the Pacific Ocean. This is a place where endangered orcas and salmon live alongside one of the fastest growing metropolitan regions in the country. The waters surrounding us are vital to our economy, our environment, our health, our tribal cultures, and our well-being.

Stormwater is the fastest growing source of water pollution in the U.S. 75% of the pollutants entering Puget Sound are from polluted stormwater runoff from our hard, urban surfaces. It's killing salmon, harming the food web, and impacting human health. Much of this stormwater runoff is from older, existing development constructed prior to the adoption of the Ecology 1992 Stormwater Management Manual. Researchers estimate that more than 90% of developed land in the Puget Sound drainage basin discharges untreated stormwater (Bissonnette Environmental Solutions & Parametrix, 2010). Effective restoration of the Puget Sound and Washington State ecosystems will need to address these older, developed areas, including highways, bridges, and other roads, and their legacy of pollution.

The Conservancy applauds the leadership that Washington State and the Department of Ecology have shown to date and we want to see the State continue to advance as a national leader in ensuring that pollutant removal begins to happen at a scale that is representative of the problem. Yet, we recognize an immediate need to address stormwater retrofits of infrastructure, including the bridges and roadways that are within the authority of Washington State Department of Transportation.

Our comments reflect The Nature Conservancy's belief the Washington State Department of Transportation Permit (WSDOT) must be informed by experience, newly available technologies, and the most current science to maximize impact and effectiveness. The Permit should support the integration of cost-effective Green Stormwater Infrastructure (GSI) systems which benefit both clean water and human well-being.

Building upon national and local research, the Conservancy has identified four objectives to support cost-effective pollution reduction which we would like to see integrated:

1. *Establish nature-based solutions as the go-to strategy to address stormwater challenges in consideration of the full suite of co-benefits. Align and optimize nature-based solutions targeted at pollution control for multiple benefits including transportation & roads, public health, social inequity, and climate readiness*
2. *Build additional support for fixing legacy pollution with GSI retrofits at all levels of government.*
3. *Incentivize voluntary, private investment in GSI retrofits solutions targeted at community pollution.*
4. *Plan pollution fixes with a broad, watershed scale perspective.*

1. Establish nature-based solutions as the go-to strategy to address stormwater challenges in consideration of the full suite of co-benefits. Align and optimize nature-based solutions targeted at pollution control for multiple benefits including transportation & roads, public health, social inequity and climate readiness.

[WSDOT Draft Permit S5: Stormwater Management Program; Highway Runoff Manual Section 2.]

Prioritizing Green Stormwater Infrastructure as Go-To Solution – Strategic siting of Green Stormwater Infrastructure (GSI) retrofits helps ensure they deliver multiple benefits, such as transportation and roads, public health and climate readiness. The Conservancy strongly recommends a recognition within the Permit that green infrastructure and the maintenance of natural systems are critical to achieving long-term water quality goals and provide multiple benefits beyond stormwater management. It should be clear from reading the Permit that maintaining green infrastructure and functioning, natural habitat, as well as retrofitting developments and grey infrastructure with green updates are preferred stormwater investments.

In addition, unlocking non-traditional funding sources depends on integrated design targeting regional efforts toward maximum impact areas while optimizing a broader suite of community benefits. Often overlooked are the positive effects on public health. Experience of metro nature (the entire suite of native, cultural and built nature in cities including GSI retrofits) contribute to healthier birth weight in babies, reducing ADHD symptoms in children, stress and anxiety reduction for adults, reduced neighborhood crime, faster healing in hospitals and improved mental health for seniors. GSI retrofits offer an opportunity to address and improve environmental and public health in areas where there have been historic environmental inequities. According to the EPA, communities of color in urban or rural poverty pockets, or on economically impoverished Native-American reservations, face worse environmental conditions than the rest of the country. GSI retrofits can be used deliberately and collaboratively as part of initiatives targeted at social equity and environmental justice.

Lastly, GSI retrofits are critical in helping Washington State adapt to climate change impacts. Heavy rainfall events are expected to become more intense in future years. Climate models show that the heaviest 24-hour rain events in the Pacific Northwest will intensify by an average of 22% by the 2080s. This increased frequency and intensity will escalate flood risks to many watersheds and GSI can play a critical role in protecting roadways and neighborhoods.

Correcting a Historic Burden of Pollution - History has demonstrated that it is most often communities of color and low-income communities who are burdened disproportionately by polluted air and water. Not surprisingly, this emerged in [TNC's pollution mapping tool](#) when

pollution heatmaps are looked at side-by-side with minority and low-income population demographics. This trend will certainly be amplified if permittees, like WSDOT, choose to implement projects in less urbanized areas where project costs are more affordable – essentially writing off our most urban pollution hotspots as lost causes. As prioritization of stormwater management interventions by permittees is conducted, habitual, historical and current inequities must be meaningfully addressed. The Permit should encourage WSDOT to work together with impacted communities and address retrofits in low-income communities, communities of color, communities most impacted by climate change, and prioritize future project work where stormwater discharge indicators place a burden of risk on already disproportionately polluted communities.

2. Build additional support for fixing legacy pollution with GSI retrofits at all levels of government.

[WSDOT Draft Permit S5 A.6: Stormwater Retrofit for Existing Highways.]

In the last biennium, the State legislature allocated over \$4 billion for Highway Improvement and Preservation Programs through the Transportation Capital Budget. At the same time, WSDOT is undergoing a massive effort to remove fish passage barriers across the State. The lowest-cost, highest-opportunity point in time for GSI retrofits is when the right of way is being torn up to resolve fish passage or install other types of improvements. The permit should lay the groundwork to ensure that opportunities to retrofit roads and bridges with green stormwater infrastructure are incorporated into non-stormwater capital projects.

Improve interagency coordination and accountability – As noted in the draft permit and related fact sheet, WSDOT shares basins with Phase I and II permittees, and has interconnected conveyance systems into shared water bodies. We are pleased to see that the permit establishes requirements for coordination in implementing stormwater management programs and planning efforts. To the extent that planning documents address GSI retrofits, this is a good first step at aligning plans and policies. The next step is to align plans in support of targeted GSI retrofits in priority areas. [This chart developed by The Nature Conservancy](#) includes a list of plan and policy documents across all levels of government that could be aligned with local efforts to implement GSI retrofits.

Leverage green stormwater infrastructure in new facilities and retrofits through greater collaboration —The permit (and legislature in support of Washington’s clean water outcomes) should focus WSDOT on seizing opportunities for other public works departments to integrate nature-based solutions that treat toxic runoff from the right-of-way and the surrounding neighborhood when other capital projects are underway, including private sector development. Increased collaboration between WSDOT and city/county departments of transportation, and other relevant agencies is critical to ensure new models for project implementation are tested and advanced. This permit should lay the groundwork for WSDOT to partner with other public works to take advantage of the lowest cost time for new and retrofit stormwater infrastructure. The permit should explicitly allow and encourage WSDOT to form innovative partnerships with other departments of transportation, private organizations, nonprofit entities, etc. to leverage funds, build capacity and meet water quality goals more efficiently.

Address legacy stormwater pollution issues for roads and bridges in high impact areas — Washington State Department of Transportation has done good work investing in reducing stormwater pollution for new construction projects. However, insufficient funding has prevented them and other local transportation agencies from addressing legacy pollution hotspots along streets, highways and bridges built prior to modern day stormwater codes. The permit should

explicitly ensure that funding available for legacy pollution retrofits is targeted at the places where GSI will have the greatest water quality impact based on current science.

Use Pollution Mapping to Reduce Stormwater Threats in Existing Hotspots - [The Nature Conservancy's Pollution Heatmap tool](#) should be explicitly recommended for permittees, including WSDOT, to identify stormwater pollution hotspots. The tool highlights spots with the most toxic runoff based on best available science and helps stormwater decision makers quickly identify places in need of stormwater action. Not surprisingly, transportation and roads jump out across the Puget sound region. The next generation of the tool will overlay hydrology and high priority ecological areas.

Given the latest research linking tire residues to the death of Coho salmon, we recommend that Ecology encourage consideration by WSDOT of traffic congestion hotspots and other transportation patterns within their retrofit prioritization process, with the goal of reducing toxic runoff from tires. 14 million pounds of chemicals run into Puget Sound each year, affecting immune systems, health and reproductive rates for Orca and Chinook. Washington's waters are getting sicker faster than they are getting healthy. We must move forward with developing the science, plans and monitoring simultaneously to getting projects in the ground.

3. Incentivize voluntary, private investment in GSI retrofits solutions targeted at community pollution.

[WSDOT Draft Permit S5 A.6: Stormwater Retrofit for Existing Highways.]

Collaborate with incentives programs that leverage public/private partnership to fix legacy pollution - Given the scale of the issue, governmental actions and regulatory frameworks alone are not likely to improve water quality. We also need incentives for the private sector that elicit transformative ways to integrate GSI retrofits. Nearly half of what will be the built environment serving commercial and industrial sectors in 2050 doesn't exist yet, giving the current generation a vital opportunity to reshape future development. (Brookings Institute, Rebuilding America Study).

Incentives are one pathway forward for municipalities to move the needle immediately on retrofitting community pollution from the right-of-way, and a tool that many municipalities are considering implementing in the region. Partnering across sectors is another way to create greater efficiency. The 2017 State of the Sound report by the Puget Sound Partnership celebrated [private developers who treated 600,000 gallons of stormwater runoff](#) from the Aurora Bridge in Seattle through private financing. This unique project saw a private developer treat stormwater from a WSDOT managed bridge, the permit should explicitly allow and encourage WSDOT to partner with public and private entities to maximize incentives in high pollution areas.

Pilot Third Party Certifications, NACTO Green Roads and Envision — Certifications and guideline programs, like [Envision](#) and [NACTO Green Streets Guide](#) provide evidence for use of Green Stormwater Infrastructure as well as case studies for implementation of GSI in urban areas. Envision is a national program setting the standards for sustainable infrastructure and recognizes unique projects that make significant positive contributions to sustainability. While more focused on local streets, the Green Streets Guide provides additional guidance on incorporating stormwater infrastructure with the human needs of transportation. The permit should allow and encourage WSDOT to pilot projects using these tools to address equity and maximize the co-benefits of GSI.

4. Plan pollution fixes with a broad, watershed scale perspective.

[WSDOT Draft Permit S5: Stormwater Management Program.]

Accelerate new solutions in innovation zones—In addition to utilizing existing tools for reducing toxic contaminants, we can pilot innovative new solutions that close scientific gaps, improve habitat, buy-down costs, and lessen conflicts between salmon, transportation, urban development, and other interests. New technologies and effective use of big data can play a key role to accelerate conservation if used appropriately. Our region is already forging ahead to prove the utility of solutions like [advanced dairy distillation](#), [geospatial tools that deploy machine learning](#), [permeable pavement made from recycled airplanes](#), [IoT sensors creating smart urban watersheds](#), and other leading-edge approaches that have the potential to increase the pace of conservation. The permit should explicitly encourage piloting of out-of-the-box solutions through the creation of innovation zones at a watershed level, giving WSDOT enough flexibility to partner with other permittees as well as public and private partners to direct their limited resources toward streamlined permitting, developing public financing opportunities, and promoting interagency coordination – all toward mainstreaming use of new technologies that have the potential of fixing systemic barriers and increasing impact.

Washington State is a special place on the planet. Puget Sound, our lakes, rivers and waterways are the heartbeat of our neighborhoods — the backdrop to our lives, where land and water meet to create communities, economies, and an entrepreneurial spirit that draws people from all over the world.

Many of the restoration and pollution reduction investments designed to keep our roads safe and recover our waters, also help to make the citizens of Washington state healthier and our communities stronger. Stormwater solutions that bring more nature into cities and towns –not only helps us clean our water and the air we breathe but is a key ingredient in growing communities that thrive, healthier people, kids that learn better, and a strong, vibrant economy.

Once again, thank you for your commitment and service to recovering the waters of Washington State. Making progress will require new approaches to old problems. The challenges facing us are significant and will require difficult decisions, but together we can provide the vision, innovation, and will necessary for both people and nature to thrive.

The Nature Conservancy appreciates the opportunity to offer these comments and we hope to see them integrated into the final permit approach and guidance documents. If you have any specific questions or concerns, I can be reached at chilton@tnc.org.

Yours in partnership,

Chris Hilton
Puget Sound, Urban Partnerships Director

Northwest Indian Fisheries Commission

Comment letter is uploaded, herein. Thanks!



Northwest Indian Fisheries Commission

6730 Martin Way E., Olympia, Washington 98516-5540
Phone (360) 438-1180 www.nwifc.org FAX # 753-8659

January 25, 2019

Foroozan Labib
WSDOT Municipal Permit Writer
Water Quality Program
Washington Department of Ecology
PO Box 47696
Olympia, WA 98504-7696

Re: WSDOT NPDES State Waste Discharge Municipal Stormwater General Permit - NWIFC
Formal Comments

Dear Mr. Labib:

Please accept these comments on the above-referenced permit reissuance, on behalf of the Northwest Indian Fisheries Commission (NWIFC).¹ The 20 member tribes of NWIFC have constitutionally protected, treaty-reserved rights to harvest, consume, and manage fish and shellfish in their usual and accustomed areas. The State of Washington is bound by the terms of these treaties with the United States, with a duty to protect and restore fish habitat.² These comments are submitted in view of the need to ensure protection and restoration of these and other reserved rights and resources, and to safeguard the health, livelihoods, and well-being of tribal members.³ NWIFC offers the comments below in the spirit of advancing the shared responsibilities of the co-managers to protect and restore the habitat that supports the fish resource.

Among several concerns, of particular importance is the need to reduce discharge of toxic contaminants through stormwater conveyance, which can be substantially accomplished through soil infiltration pretreatment. These reductions of toxins will benefit the entire food web, from forage fish, to salmonids, orca whales, and the human residents of the watershed. Watershed-scale stormwater retention, infiltration and treatment can reduce pollutant loads, and excessive flows and flooding. Over 1,000 new residents move to the Puget Sound region every week, in part because of abundant water and other natural amenities. Not only will these new neighbors demand clean water, but they will expect that their transportation

¹ The NWIFC member tribes are the Lummi, Nooksack, Swinomish, Upper Skagit, Sauk-Suiattle, Stillaguamish, Tulalip, Muckleshoot, Puyallup, Nisqually, Squaxin Island, Skokomish, Suquamish, Port Gamble S'Klallam, Jamestown S'Klallam, Lower Elwha Klallam, Makah, Quileute, Quinault, and Hoh.

² See *U.S. v. Wash.*, 853 F.3d 946, 966 (9th Cir. 2017), affirmed by *U.S. v. Wash.*, 138 S.Ct. 1832 (2018).

³ These general comments should not be construed as conflicting with any specific comments from NWIFC member tribes, which the Commission will acknowledge and consider with deference.

infrastructure will be designed and maintained to provide ecosystem services that retain and treat all stormwater resulting from this transportation infrastructure. Ecology's permit conditions, stormwater management manuals, best management practices, and other guidance must incorporate these needs to reduce pollutants and enhance mitigation strategies based on the best available science.⁴

Recent Scientific Studies Underscore the Need to Address Stormwater

"[T]he department of ecology shall in issuing and renewing state and federal wastewater discharge permits 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."⁵ The most recent scientific studies emphasize the link between toxic contamination in our waters and the health of the salmon, humans and orca whales. In many cases, the same toxic contaminants that threaten the recovery of salmon and prey species also pose risks to humans and orcas. Moreover, studies have demonstrated a tight nexus between the complex mix of contaminants in stormwater and the alarming rates of pre-spawn mortality witnessed in adult coho throughout the Puget Sound region. Thus, while various efforts that focus on reducing and cleaning up individual toxic contaminants remain important, it will be crucial to address the harms of stormwater as such. Additionally, when stormwater runoff alters the hydrology, geomorphology, and thermal regime of streams and rivers, it can adversely impact salmon at various life stages.⁶

We highlight a few of these recent findings here, although this is not intended to be an exhaustive account. However, even this brief summary underscores the imperative to address stormwater as a linchpin in reducing the harms of toxic contamination throughout the web of life that sustains all of us.

Toxics in Stormwater Directly Linked to Pre-Spawn Mortality in Coho

Polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs) and a slew of other toxic pollutants in stormwater runoff are responsible for dramatic pre-spawn mortality rates for coho. "Adult coho salmon are exceptionally sensitive to the harmful effects of toxic urban runoff. Field surveys spanning more than a decade have shown very high rates of mortality in

⁴ The WSDOT Highway Runoff Manual and any associated guidance are incorporated in this reference.

⁵ RCW 90.48.520.

⁶ "Pollution" is defined to include contamination that changes the temperature of surface water. See RCW 90.48.020. See also State of Wash. Dept. of Ecology, Fact Sheet for the NPDES and State Waste Discharge General Permit for WSDOT's Municipal Separate Storm Sewers 7 (December 2018) ("Stormwater runoff from impervious surfaces can increase the temperature of rain water and pose problems to fish and invertebrates that are sensitive to temperature and cannot survive in overly warm water bodies"). Discharge permits must ensure consistency with the requirements of WAC 173-201A-200-210 (designated uses and criteria), and 600-612 (use designations).

urban streams from the central Puget Sound Basin.”⁷ Research suggests that these extraordinary mortality rates – as high as 100% of coho exposed to highway runoff – are attributable to the complex mixture of contaminants present in this runoff, rather than to a single contaminant in isolation.⁸ The most recent studies provide evidence “for a critical loss of spawners across much of the Puget Sound coho population segment, which is closely correlated with landscape-scale measures of human population density and transportation infrastructure.”⁹ Point discharge stormwater outfalls are ubiquitous within this municipal and transportation infrastructure. These findings support earlier studies identifying contaminants in stormwater runoff as the likely cause of coho mortality events and led researchers to conclude that “it will be difficult, if not impossible, to reverse historical coho declines without addressing the toxic pollution dimension of freshwater habitats.”¹⁰ Scientists now forecast a “substantively increased risk of local population extinction” in 40% of basins throughout the Puget Sound in the foreseeable future, if nothing is done to address these causes of pre-spawn mortality.¹¹ Fortunately, this coho mortality syndrome can be prevented by soil infiltration pretreatment,¹² which also substantially reduces the harm of stormwater to juvenile coho and invertebrate prey.¹³

Additionally, as you are aware, a recent Ecology report summarizing data collected between 2007 and 2013 from municipal stormwater permittees revealed that across four different land uses (low-density residential, high-density residential, commercial, and industrial), “copper, zinc, and lead were—more often than not—found to exceed (not meet) water quality criteria.... Dissolved zinc and copper in stormwater samples exceeded acute aquatic life criteria in 36% and 50% of the samples, respectively, over the three years of data. Among other harmful effects, coho exposure to copper can diminish olfactory sensitivity in juvenile fish, resulting in failure to initiate predator avoidance responses.¹⁴ Mercury and total PCBs exceeded chronic aquatic life criteria in 17% and 41% of the samples, respectively.”¹⁵ The Reissued WSDOT

⁷ Blake E. Feist, et al., *Roads to Ruin: Conservation Threats to a Sentinel Species Across an Urban Gradient*, 27 *ECOLOGICAL APPLICATIONS* 2382-2396 (2017).

⁸ Jennifer K. McIntyre, *Soil Bioretention Protects Juvenile Salmon and their Prey from the Toxic Impacts of Urban Stormwater Runoff*, 132 *CHEMOSPHERE* 213-19 (2015); see also Eric Wagner, *What is Killing the Coho?* *ENCYCLOPEDIA OF PUGET SOUND* (2017), available at: <https://www.eopugetsound.org/magazine/is/stormwater-mystery>.

⁹ Feist, et al., *Roads to Ruin*, *supra* note 4.

¹⁰ *Id.*

¹¹ *Id.*

¹² Julann A. Spromberg, et al., *Coho Salmon Spawner Mortality in Western U.S. Urban Watersheds: Bioinfiltration Prevents Lethal Stormwater Impacts*, 53 *JOURNAL OF APPLIED ECOLOGY* 398-407 (2016); Jennifer McIntyre, *Testing the Effectiveness of Bioretention at Reducing the Toxicity of Urban Stormwater to Coho Salmon: Stormwater Action Monitoring Final Report* (March 7, 2017).

¹³ McIntyre, et al., *Soil Bioretention Protects Juvenile Salmon and their Prey*, *supra* note 5.

¹⁴ Jason F. Sandahl, et al., *A Sensory System at the Interface Between Urban Stormwater Runoff and Salmon Survival*, 41 *ENVIRONMENTAL SCIENCE AND TECHNOLOGY* 2998-3004 (2007).

¹⁵ Washington Department of Ecology, *Western Washington NPDES Phase I Stormwater Permit: Final S8.D Data Characterization 2009-2013*, at 12–13, available at: <https://fortress.wa.gov/ecy/publications/SummaryPages/1503001.html>.

Waste Discharge and Municipal Stormwater General Permit must implement effective strategies to measurably reduce these toxicant loads.

Toxics in Puget Sound at Levels that Produce Adverse Effects in Chinook and Pacific Herring

PCBs are currently present in Puget Sound at levels associated with adverse effects in Chinook and Pacific herring.¹⁶ Although there has been some progress in reducing levels of other toxic contaminants, PCB levels have persisted in many Pacific herring stocks; specifically, they are present in herring above thresholds for harmful effects¹⁷ and showed no change in the highly developed and moderately developed basins during a 16- to 21-year period.¹⁸ Similarly, a recent assessment of status and trends regarding PCB levels in Puget Sound found that “[a]dult Chinook salmon from all locations (and juveniles from one basin) exceeded PCB [harmful effects] thresholds.”¹⁹

PAHs²⁰ are similarly present in Puget Sound at levels that are likely to be harmful to herring (although a precise effects level is in the process of development, “PAH-metabolites in herring will likely be comparable to or above such a threshold in all basins”²¹). While there have been some localized improvements in PAH levels, they remain high and “conditions are not changing” throughout the Puget Sound.²²

Toxics Identified as One of Three Key Threats to Southern Resident Orca Whale Survival

Ecology acknowledges that stormwater is the leading conveyance pathway for toxins in the waters of Puget Sound.²³ PCBs and other bioaccumulative toxic contaminants were recently cited as one of the three most significant environmental threats to the Southern Resident Orca Whales, whose numbers have declined precipitously in recent years.²⁴ A recent population

¹⁶ PCBs were used in lubricants, gasket sealers, paints, adhesives, brake lining and asphalt. State of Wash. Dept. of Ecology, Fact Sheet for the NPDES and State Waste Discharge General Permit for WSDOT’s Municipal Separate Storm Sewers 43 (December 2018).

¹⁷ James E. West, et al., *Current Conditions, Time Trends and Recovery Targets for Toxic Contaminants in Puget Sound Fish: the Toxics in Fish Dashboard Indicator* (undated), <https://wdfw.wa.gov/publications/01364/> [hereinafter West, et al., *Current Conditions*].

¹⁸ James E. West, et al., *Time Trends of Persistent Organic Pollutants in Benthic and Pelagic Indicator Fishes from Puget Sound, Washington, USA*, 73 ARCH. ENVIRON. CONTAM. TOXICOL. 207-29 (2017).

¹⁹ West, et al., *Current Conditions*, *supra* note 17.

²⁰ PAH sources include motor oil, tire wear, vehicle exhaust, and coal-tar based sealants. State of Wash. Dept. of Ecology, Fact Sheet for the NPDES and State Waste Discharge General Permit for WSDOT’s Municipal Separate Storm Sewers 9, Table 1 (December 2018).

²¹ West, et al., *Current Conditions*, *supra* note 17.

²² *Id.*

²³ Washington Department of Ecology, Puget Sound Toxics Control 36 (September, 2017).

²⁴ In stressing the “need to restore the ecosystem to one that sustains orcas, salmon and the quality of life for all Washingtonians,” the office of Governor Jay Inslee identified toxic pollutants, stormwater, and fish passage

viability analysis singled out three factors – Chinook prey availability, noise and disturbance, and toxic contaminants – as the explanatory factors in the recovery of the Southern Residents.²⁵ PCBs and other toxic contaminants thus affect a significant dual factor for orca health: Chinook salmon abundance (see discussion above).

Several of the contaminants discussed above are not only harmful to herring, salmon and orca, but to human health as well (e.g., mercury, PCBs, and PAHs), as recognized by Washington's current human health criteria. Tribal members and other people who consume herring, salmon, and other fish are thereby exposed to levels of these contaminants that can cause cancer and other serious health impacts. It is also worth noting that the contaminants addressed in Washington's aquatic life and human health criteria reflect only a fraction of the contaminants that are released to our waters.²⁶ Many of the standard efforts to monitor and regulate these contaminants proceed one chemical at a time, and so do not account for the synergistic and antagonistic effects of exposures to the mixtures found in the real world – mixtures that include the unregulated contaminants as well. The scientific research on pre-spawn coho mortality has demonstrated the importance of accounting for these interactions – suggesting that the toxicity of real world stormwater may be greater than the sum of its parts. These harmful impacts to species listed under the Endangered Species Act implicate Ecology's obligations to prevent unauthorized take, and advance the conservation of listed species.

This is an Opportunity to Act on the Science

The scientific findings sketched above present a clear imperative. Indeed, although scientists are generally conservative in discussing the implications of their research, the conclusions they have drawn from recent studies are stark:

The most important water quality threat to aquatic systems now is non-point source pollution. The coho mortality phenomenon is one of the few contemporary examples of urban stormwater causing the overt death of a widely distributed keystone species with high societal value, both economically and culturally.²⁷

Fortunately, the permit under review provides an opportunity to act on the science and address stormwater runoff. Moreover, “[i]n cases where adequate information exists to develop more specific conditions or limitations to meet water quality standards, these conditions or limitations are to be incorporated into storm water permits, as necessary and appropriate.”²⁸

barriers as contributors to orca population decline. See: <https://medium.com/wagovernor/inslees-budget-takes-big-steps-to-save-orcas-and-salmon-14d95ff00305> .

²⁵ Robert C. Lacy, et al., *Evaluating Anthropogenic Threats to Endangered Killer Whales to Inform Effective Recovery Plans* (2017).

²⁶ Wagner, *What Is Killing the Coho?*, *supra* note 5.

²⁷ Feist, et al., *Roads to Ruin* (internal citation omitted), *supra* note 7.

²⁸ U.S. EPA, Interim Permitting Approach for Water-Quality Based Effluent limits in Storm Water Permits, September 1, 1996.

Researchers explain that “the common goal is to slow, spread, and infiltrate stormwater, to reduce high flows (i.e., flooding) and filter pollutants.”²⁹ Considering salmon-bearing streams instead as merely stormwater conveyance systems, without adequate retention and without mitigating for increased stormwater volumes, risks displacement of juvenile salmonids from suitable habitat as well as introducing migration barriers when salmonids and other species lack the capacity to swim against these episodic but now frequent stormwater-enhanced velocities. In addition, “[i]mpervious surfaces in urban areas increase the quantity and peak flows of runoff, which in turn cause hydrologic impacts such as scoured streambed channels, in-stream sedimentation and loss of habitat. Furthermore, because of the volume of runoff, mass loads of pollutants carried by stormwater significantly degrade water quality.”³⁰ “Impervious surfaces cause higher winter stormwater flows that erode stream channels and destroy spawning beds. Also, because more water flows offsite rather than seeping into the ground during the wet season, streams lose summertime base flows, drying out habitat needed for salmon rearing.”³¹ “The State’s multimillion dollar shellfish industry is increasingly threatened by closures due to contaminants carried by stormwater.”³²

Simple site-specific mitigation practices should include introduction of complex wood structures, off-channel pools, stream-margin shelter, and similar habitat enhancement strategies. Flow-control best management practices (BMPs) can detain and retain stormwater flows, thereby reducing stream channel erosion.³³ Effective transportation facility design should “protect sensitive areas such as wetlands and riparian areas, and provide buffers along sensitive water bodies” including fish bearing streams, along with the application of BMPs including “filtration practices such as grassed swales, sand filters and filter strips; and infiltration practices such as infiltration basins and infiltration trenches.”³⁴ In the Puget Sound region, studies have demonstrated and documented that bioinfiltration can provide a cost-effective treatment solution: “simple and inexpensive soil columns can be very effective at removing chemical contaminants” and protecting the health of coho and other aquatic species.³⁵

The preventable, lethal discharges into fish bearing streams must be addressed in this permit, to prevent bridges and other water-abutting roadways from becoming barriers to habitat access by fish species relied on by the treaty tribes.³⁶ State agencies may not elect to execute

²⁹ Feist, et al., *Roads to Ruin* (internal citation omitted), *supra* note 7.

³⁰ State of Wash. Dept. of Ecology, Fact Sheet for the NPDES and State Waste Discharge General Permit for WSDOT’s Municipal Separate Storm Sewers 7 (December 2018).

³¹ *Id.* at 8.

³² *Id.*

³³ *Id.* at 13.

³⁴ 40 C.F.R. 122.34(b)

³⁵ Feist, et al., *Roads to Ruin* (internal citation omitted), *supra* note 5.

³⁶ See WAC 220-660-190 (“A person must design water crossing structures in fish-bearing streams to allow fish to move freely through them at all flows when fish are expected to move. . . . The water crossing design must provide unimpeded passage for all species of adult and juvenile fishes”).

their authorities in a manner that blocks or impedes access to, or damages or destroys habitat needed to sustain the treaty fishery.³⁷ Runoff from road bridges and other water-transportation interfaces needs to be captured and conveyed to soil columns prior to discharge into surface waters. Direct discharges into surface waters should be treated using soil columns. Any project discharging to known or potential salmon streams should be required to treat any stormwater that cannot be infiltrated using enhanced treatment methods, providing stormwater design features addressing toxic runoff “which insures the free passage of salmon of all ages and life stages both upstream and down.”³⁸ Monitoring of stormwater discharges into fish-bearing streams, and the effectiveness of BMPs to treat these discharges, must be required as an utmost priority under this permit, with emphasis on toxicant discharges from bridges and other water-transportation interfaces. Without these stormwater capture, retention, treatment, and monitoring practices, investments in hatchery reproduction and habitat restoration are nullified for coho and other species sensitive to stormwater pollutants. The urgency and insights provided by recent research need to be incorporated into various facets of the municipal permits being reissued by Ecology. Furthermore, WSDOT’s Highway Runoff Manual is out of date.³⁹ Bridges must comply with Minimum Requirements 5, 6, and all other applicable limits on discharges of toxins; and limits on contributors of stormwater-enhanced flows that contribute to erosion not only at bridge sites, but also at downstream locations. Any manuals or guidance from Ecology or WSDOT that fail to address these known harms of stormwater to treaty fisheries are incomplete.⁴⁰

Design standards for stormwater infrastructure based on past rainfall records may be inadequate for future conditions.⁴¹ Observations off the Washington coast indicate a long-term

³⁷ *U.S. v. Wash.*, 20 F. Supp. 986, 1022 (W.D. Wash. 2013), *aff’d*, *U.S. v. Wash.*, 853 F.3d 946, 980 (9th Cir. 2017), *Wash. v. U.S.*, 138 S.Ct. 1832 (2018).

³⁸ *Id.*

³⁹ WSDOT, Highway Runoff Manual 2-13 (April 2014).

⁴⁰ See State of Wash. Dept. of Ecology, Fact Sheet for the NPDES and State Waste Discharge General Permit for WSDOT’s Municipal Separate Storm Sewers 32 (December 2018) (noting “instances where because of the size of a project or the sensitivity of a receiving water, or because of some other regulatory need to ensure compliance with standards [when] the appropriate level of treatment will be developed through a basin planning process and the treatment and control of stormwater runoff may be different from what is identified in the Highway Runoff Manual”).

⁴¹ Rosenberg, E.A. et al. Precipitation Extremes and the Impacts of Climate Change on Stormwater Infrastructure in Washington State 319-349. Climatic Change (2010). WSDOT will need to ensure that water crossings can accommodate increased flows that may result from climate change. See Wash. Dept. of Fish and Wildlife, Incorporating Climate Change into the Design of Water Crossing Structures: Final Project Report (September 2016) (“The expected service life of culverts is roughly 50 to 100 years (NCHRP 2015), and WSDOT (2015) requires an expected minimum service life of 50 years for all culverts. Therefore, culverts designed and constructed today will be subjected to whatever conditions occur decades from now. Consequently, in many parts of Washington State culverts designed for stream flows occurring in 2016 are likely to be undersized for flows occurring several decades from now. Undersized culverts may create barriers to fish passage, degrade fish habitats, damage public infrastructure, and threaten public safety”), available at <https://wdfw.wa.gov/publications/01867/>.

increase in sea level rise.⁴² Some projections indicate that sea levels in Washington state could increase by a range of 4 inches to 4.6 feet by 2100.⁴³ The rate of sea level rise varies with location due to vertical land motion, which is not consistent across the state. Sea level rise is likely to cause saltwater intrusion, corrosion, and coastal flooding of stormwater infrastructure.⁴⁴ The combination of extreme precipitation and sea level rise will hinder the draining of stormwater from coastal sites.⁴⁵

These well-documented challenges require stormwater retention and treatment at watershed and permit-wide scales.⁴⁶ “For external coordination WSDOT must develop mechanisms to increase intergovernmental coordination as a necessary part of a SWMP,” especially with affected Indian tribes, “since drainage basins seldom follow jurisdictional boundaries.”⁴⁷ Furthermore, tribes co-manage fisheries, fish habitat, and other treaty resources in these watersheds, obliging WSDOT accession to this reasonable request.

With 64,000 people moving to the Seattle-Tacoma-Bellevue area between April 2016 and April 2017,⁴⁸ Ecology needs to require more ambitious public education and outreach requirements by permittees, to help these newcomers understand the stormwater impacts of the development needed to accommodate their arrival in and occupancy of the watershed. New development and infrastructure must retain and treat all resulting stormwater, at a minimum, with no net increase in stormwater flows. In other words, new development must provide sufficient ecosystem services infrastructure to eliminate any harmful impacts specifically attributable to this new development. Further, permittees should be required to implement projects that provide a net benefit by reducing existing stormwater impacts. Permittees should be required to explain why they missed any opportunity to provide these net benefits.

The larger point is that the science tells us that the situation for salmon is dire (and likely to worsen with increasing human population). A cause for the “overt death” of coho is stormwater, and, happily, there are some solutions that are “simple and inexpensive.” Of course, NWIFC recognizes that bioinfiltration will not be the solution to every stormwater problem, and that the WSDOT Waste Discharge and Municipal Stormwater Permit reissuance effort is significant and complex.

⁴² National Research Council. *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future*. Washington, DC: The National Academies Press (2012).

⁴³ *Id.*

⁴⁴ Mauger, G.S., et al. *State of Knowledge: Climate Change in Puget Sound*. 12-1. Prepared for the Puget Sound Partnership and the National Oceanic and Atmospheric Administration. Climate Impacts Group, University of Washington, Seattle, WA (2015).

⁴⁵ *Id.* at 12-2 – 12-3.

⁴⁶ See 40 C.F.R. 122.26.

⁴⁷ State of Wash. Dept. of Ecology, Fact Sheet for the NPDES and State Waste Discharge General Permit for WSDOT’s Municipal Separate Storm Sewers 30-31 (December 2018).

⁴⁸ See <https://www.thenewtribune.com/news/business/article206326214.html>

However, NWIFC urges Ecology to seize this opportunity and be aggressive in addressing the known and documented harms of stormwater in this upcoming permit cycle. This is necessary in fulfillment of its treaty obligations, and its responsibilities under the Clean Water Act to restore and maintain the chemical, physical and biological integrity our nation's waters within the Puget Sound Estuary of National Significance and the surrounding associated waters.⁴⁹

Sincerely,

A handwritten signature in blue ink that reads "Justin R. Parker". The signature is fluid and cursive, with a long horizontal stroke at the end.

Justin R. Parker
Executive Director

cc: NWIFC Commissioners

⁴⁹ See 33 U.S.C. § 1251, 33 U.S.C. § 1342(b), 33 U.S.C. § 1330.



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February 5, 2019

RE: WSDOT Municipal Stormwater Permit Reissuance - Questions

Dear Mr. Labib:

The undersigned submit these comments and questions on the draft 2019 WSDOT Municipal Stormwater Permit (“WSDOT Permit”). These comments and questions have been updated following our conversation on Friday, February 1st, 2019. Per that conversation, we would like to schedule a time to discuss the questions and concerns that we were not able to address last Friday.

I. GENERAL COMMENTS

The WSDOT permit presents a critical opportunity for the state of Washington to control a significant and perilous source of toxic pollution to state waterways. Polluted stormwater runoff is one of the seminal environmental challenges of our time. Moreover, better controlling roadway runoff from state-managed roadways and highways is a key opportunity that we must capitalize upon to better protect our waterways, our communities, and the beleaguered fish and wildlife populations that urgently depend on clean water. Department of Ecology has recognized the severity of polluted stormwater runoff in many studies, including the Puget Sound Toxic Loading study. Governor Inslee’s Southern Resident Killer Whale Task specifically calls for improved control of toxic runoff and better implementation and enforcement of permit standards in National Pollutant Discharge Elimination System (NPDES) permits issued under delegation of the federal Clean Water Act (See recommendations #31 and 32). Yet Washington Department of Ecology proposes to finalize a permit that will not ensure protection of our waterways from toxic pollution. Ecology has a trust responsibility to implement the strongest protections practicable to ensure that state and federal waters meet the necessary standards to support designated uses. Sadly, much more needs to be done as recreational opportunities, subsistence fishing, human contact, endangered species critical habitat and other designated uses are placed in jeopardy by waters that are impaired and fail to meet water quality standards due to polluted stormwater runoff.



Puget Soundkeeper implores Department of Ecology to seriously consider the following comments to improve protection of our waters as it moves to finalize the WSDOT permit.

II. COMMENTS REGARDING PERMIT IMPLEMENTATION

A. Permit

1. S5C: Stormwater Management Program.

a. S5C(3): Mapping.

- i. The 2009 WSDOT Permit (modified in 2012) required WSDOT to meet the following performance indicators:
 - “Initiate a program to map connection points between municipal separate storm sewers owned or operated by WSDOT and other municipalities or other public entities by the end of year two of the permit.” **Was this done?**
 - “Map and document all newly constructed stormwater facilities as part of the project closeout procedure into the *Stormwater Facilities Inventory Database* beginning in year 4 of the permit.” **Was this done?**
 - “Map and document all known municipal separate storm sewer outfalls and structural stormwater treatment and flow control BMPs WSDOT owns, operates, or maintains within Phase I and II designated areas into the *Stormwater Facilities Inventory Database* by the end of year five of the permit.” **Was this done?**
- ii. The 2014 WSDOT Permit, by comparison, then implemented these requirements:
 - “No later than two years from the effective date of the permit (i.e., April 5, 2016), establish an approach and pace for complete conveyance mapping of WSDOT’s MS4.”¹ **Was this done? What is the pace WSDOT proposed? Has Ecology approved this pace? Is it within 3 years of this requirement (i.e., April 5th 2019)?**
 - “By the end of the permit term (i.e., April 5, 2019), develop a process for mapping drainage areas associated with WSDOT owned or operated stormwater outfalls and discharge points.” *Id.* **Was this done?**
 - “Map and document all newly constructed stormwater outfalls, discharge points, and stormwater treatment/control facilities as part of the project

¹ Appendix 2, table 2-1.



closeout into the *Stormwater Features Inventory Database*.” Id. **Was this done?**

- “Starting year three of the permit (i.e., April 5, 2017), meet pace defined by the first two years for MS4 conveyance and connection mapping.” Id. **Was this done? And what is the pace self-defined by WSDOT?**
- iii. S5C(3)(c) (p. 8): The draft Permit reads: “No later than three year [sic] from the effective date of this permit, WSDOT shall develop a process and an implementation plan to map drainage areas associated with known WSDOT owned or operated stormwater outfalls and discharge points ...” This requirement was already spelled out in the 2014 Permit, and so should have been completed already per our comment A.1.a.2 bullet 2 above. **Why was the draft Permit not updated to reflect that this requirement is now past due?**
- iv. On February 1st, Ecology indicated that WSDOT is deemed to be in compliance if they have “mapped some of the features, but not 100% of the features.” This is unacceptable. Section 402(p)(4) of the Clean Water Act, 33 U.S.C. § 1342(p)(4) requires that permits “provide for compliance as expeditiously as possible, but in no event later than 3 years after the date of issuance of such permit.” Ecology must therefore spell out specific deadlines for all permit requirements and deliverables, such as the mapping of features, and deliverables must be provided within 3 years. Maps may need updating if there are new outfalls, but that should be minimal and should be done within the year (and should have been kept up under the existing permit).
- v. Ecology is responsible for clearly articulating concrete, timebound requirements, checking to confirm that WSDOT is complying with those requirements, and then updating those requirements in the next Permit cycle. Ecology should be pushing the Permit forward with each Permit cycle to ensure that the Permit is tightened and becomes more protective of water quality over time. Therefore: Ecology should revise the permit language around mapping to clearly articulate that:
- WSDOT was required to “Map and document all known municipal separate storm sewer outfalls and structural stormwater treatment and flow control BMPs WSDOT owns, operates, or maintains within Phase I and II designated areas into the Stormwater Facilities Inventory Database by the [March 6th, 2014].”
 - WSDOT was required to “Map and document all newly constructed stormwater outfalls, discharge points, and stormwater treatment/control facilities as part of the project closeout into the Stormwater Features Inventory Database” by the end of the 2014 Permit Cycle [April 5th 2019].



- To comply with the Clean Water Act, all other mapping requirements should include a specific deadline, not later than 3 years after the Permit's effective date (i.e., March 6, 2020).
 - Ecology should specify that updates for mapping of features in new areas coming under the jurisdiction of the 2019 WSDOT Permit must likewise be completed by no later than 3 years after the Permit's effective date (i.e., March 6, 2020).
- vi. When Soundkeeper requested to see WSDOT's maps on February 1st, Ecology advised we can obtain the maps at WSDOT, and that Ecology staff had never requested to see WSDOT's maps. This is unacceptable. WSDOT's maps should be in Ecology's possession, or at least, accessible to Ecology and periodically reviewed by Ecology. It is Ecology's responsibility to ensure compliance with the Permit terms. **How does Ecology confirm that WSDOT is in compliance with the mapping requirements in the Permit if Ecology has never requested to view the maps?**
- b. S5C(4)(a) and S5C(4)(c)(i) (p. 8): Traffic Collision Related Spills, Illicit Discharges, and Illicit Connections.
- i. On February 1st, 2019, we requested whether Ecology has provided a guideline, template or example of an adequate traffic spill related response program. Ecology indicated that Section 3 of the 2014 Stormwater Management Program Plan (SWMP), page 8 and the footnotes, provide such guidance and will apply in 2019.
 - ii. We have not been able to obtain a copy of this document to review it, despite searching PARIS. Even so, the Ecology is responsible for spelling out the spill response standards or guidance that WSDOT must follow. WSDOT's own prepared SWMP should not be the source of Ecology's standards or guidance for WSDOT. Ecology should spell out the traffic spill related response program requirements in the Permit, or in a separate guidance document. Ecology should provide specific examples of steps that constitute "appropriate action" to address illicit discharges include spills under Section S5C(4)(c)(i). Further, the traffic spill related response program should be updated each Permit cycle to reflect changes in the state of knowledge around spill response and control.
- c. S5C(6): Stormwater Retrofits for Existing Highways.
- i. S5C(6)(c)(i) (p. 10): The 2009 Permit was modified in 2012 pursuant to a settlement agreement to incorporate a 20% cost obligation for retrofit projects. **What are the results of the 20% cost obligation on the ground? Namely, how much of WSDOT's existing highways have been retrofitted to date?**



(e.g., how many acres of hard surfaces have been retrofitted out of how many acres total)? And at what cost? Please provide a chart or list of the projects, locations, acreage, and costs? How will this Permit draft build upon the last Permit cycle's progress?

- ii. S5C(6) (a) and (d) (p. 10): WSDOT retrofit tracking requirement. Soundkeeper has formally requested to review WSDOT's list of highway segments prioritized for stormwater retrofits, and are awaiting a response. **How has Ecology responded to WSDOT's priority retrofit lists? Where are you seeing improvements, and which alternative is favored?**
- iii. **Why has Ecology not directed WSDOT to consider culvert replacement projects in conjunction with stormwater retrofit projects?** Culvert replacement projects provide an opportunity to dovetail projects and thereby gain more "bang for your buck" – if ground is already being torn up to replace culverts, this provides a great opportunity to install retrofits. Ecology should mandate that WSDOT consider culvert replacement projects when prioritizing retrofits.
- iv. Ecology should mandate that WSDOT consider Urban Mortality Runoff Syndrome (URMS) data and the health of salmon-bearing streams and waters when prioritizing and selecting retrofits. Ecology explained that WSDOT uses bioswales and not bioretention. First, WSDOT should be required to use bioretention where feasible. Second, regardless of the Best Management Practices (BMPs) being used on the ground, Ecology should still mandate that WSDOT consider the documented presence of URMS in waterbodies that receive runoff from WSDOT roads when prioritizing and selecting roads for retrofits, because BMPs presumptively are the scientifically proven best methods to address stormwater runoff and improve water quality regardless of the type used.
- v. Ecology should also require WSDOT to consider environmental justice areas as part of its retrofit prioritization criteria and selection process. We are concerned that there are not presently enough environmental justice considerations written into the draft. History has demonstrated that it is most often communities of color and low-income communities burdened disproportionately by our pollution. As retrofit and stormwater management planning leads to prioritization of watersheds and retrofit efforts, this habitual inequity must be addressed. Furthermore, processes should be developed that prioritize future project work where wastewater discharge indicators place a disproportionate burden of risk on already disadvantaged communities.



vi. **Why has Ecology not set a certain minimum quantity of retrofit projects for WSDOT to perform in the next permit cycle?** As with the Municipal Stormwater Permits for Phase I and Phase II's, Western Washington, Ecology should define a level of effort for WSDOT to meet the WSDOT Permit's retrofits requirement. Ecology has already assigned points levels of 1, 2, and 3 to different watershed characteristics in Table 6-1 of the 2014 WSDOT Permit: Stormwater Retrofit Prioritization Scheme (page 6-4). There should be a total minimum points requirement/level of effort defined by Ecology for the next Permit cycle, that builds upon the amount of projects performed in the 2014 Permit cycle.

d. S5C(7)(b)(iii)(5): Maintenance. **Has WSDOT submitted annual reports including lists of repairs needed that exceed \$25,000 in cost? How many maintenance projects are on that list waiting to be completed? May we obtain a copy of the most up-to-date list?**

2. S7: Monitoring

a. **What are the results of WSDOT's effectiveness monitoring for vegetated filter strip efficacy? Has this been published? Will it be? When?**

b. After discussing the WSDOT Permit monitoring requirements for some time, it became apparent on February 1st through conversations with Ecology that the WSDOT Permit does not include any set deadlines for completion of effectiveness monitoring. This is absurd. For adaptive management to be effective, the Permit must include deadlines for completion of effectiveness monitoring, review of data, and incorporation of results and feedback into the next iteration of the Permit.

B. Factsheet

1. P. 19: "WSDOT shares basins with Phase I and Phase II permittees, have interconnected conveyance systems, and discharges into many of the same water bodies. In areas where conveyance systems are interconnected or discharges go to the same water body, successful implementation of stormwater management programs requires coordination between WSDOT and local jurisdictions." If sending discharges to municipal storm systems, WSDOT must first pretreat the water being discharged. **Has Ecology required WSDOT to obtain pretreatment permits?** If so, please provide data regarding the location and permits.
2. First flush toxicity testing should remain a requirement of the WSDOT Permit. Ecology says it is eliminating this requirement (p. 39) but the parameters of interest chart on page 40 still includes this requirement. **Could you clarify whether this requirement is being eliminated, and if so, why?**



C. Highway Runoff Manual (HRM)

1. **How frequently has WSDOT utilized the “infeasible” or “not cost effective” loophole to avoid the 20% retrofit obligation? (i.e. how many times in the last Permit cycle?)**
2. Section 3-3.5.2 Minimum Requirement 5 in the Manual says that repaving projects are exempt from the treatment requirements in Requirement 5. **What does this mean on the ground? How many project/road miles does this cover over the course of a permit? How big are the projects on average, including the size of the project budgets?**
3. **Why are projects that are new construction but involve only new sidewalks or bikepaths adjacent to the roadway totally exempt from structural stormwater controls? If WSDOT has the budget to tear up the ground, shouldn't they also be installing infiltration between the roadway and new sidewalk/bikepath that takes runoff from the existing road?** This is a perfect retrofit opportunity that has been missed.
4. In Section 3-3.5.3 of the Manual, it says that minimum require 5 applies only to nonexempt projects. But then it seems to “recapture” and place some obligations on certain projects, but the language is very opaque. **What projects specifically fall within this recapture language?**

III. **QUESTIONS AND CONCERNS REGARDING PERMIT LANGUAGE**

A. Permit

1. Section S4F: Adaptive Management Plans. The WSDOT Permit draft is too vague in terms of implementation details, decision points and deadlines to ensure that adaptive management will actually work. For example:
 - a. Excessive timelines
 - i. S4F(1) (p. 4): WSDOT should notify Ecology within 48 hours of becoming aware, based on credible site-specific information, that a discharge from the MS4 owned or operated by WSDOT is causing or contributing to a known or likely violation of Water Quality Standards in the receiving water” – not 30 days.



b. No Deadlines

- i. S4F(2) (pp. 4-5): Ecology does not provide a timeframe within which it will notify WSDOT in writing that an adaptive management response is necessary. Ecology should notify WSDOT of the next steps needed, if any, within 30 days of WSDOT's notification per S4F1.
- ii. S4F(3)(b) (p. 5): Ecology should notify WSDOT of receipt of its adaptive management response plan within 48 hours and provide a response and revisions to the report, if needed, within 60 days.
- iii. S4F(3)(d) (pp. 5-6): If the next annual report submitted by WSDOT subsequent to the implementation of an adaptive management plan shows an ongoing violation, Ecology should require WSDOT to stop the violation by modifying the adaptive management plan within 60 days. Ecology should accept or revise the adaptive management plan within 30 days. To effectively stop the violation the modified adaptive management plan should include specific additional BMPs that will be implemented, and a strict compliance schedule for implementation identified by Ecology which should not exceed 1 year.

c. Implementation details

- i. The HRM includes BMPs to achieve compliance with the Clean Water Act and State Water Quality Standards. Where adaptive management is triggered, Ecology should work with WSDOT by visiting the site, identifying all additional BMPs that are feasible on site, and requiring same to be implemented within a specific, tight compliance schedule – such as within 1 year. These steps should be clearly articulated in the WSDOT Permit.
2. S6 and Appendix 3: TMDL Requirements. We feel strongly that 303(d) listed waterbodies should be given the same consideration as TMDL-approved waterbodies. 303(d) listed bodies are more at risk than TMDL-approved waterbodies – they are impaired and waiting for a TMDL to be implemented to clean up the waterbody, where as TMDL-approved waterbodies already have a pollution control program in place. The TMDL creation and approval process is lengthy and time consuming, and often waters may remain on the 303(d) list for years awaiting a TMDL. These waters deserve special consideration and protective measures, and Ecology is in the unique position to require same through the WSDOT Permit.

B. Factsheet

1. In developing the Factsheet, on February 1st, 2019 Ecology indicated that 90% of the Factsheet was pulled from the 2014 WSDOT Permit's Factsheet and not updated, and the Ecology really only updated sections where Permit requirements were added or



- where the Permit was edited. Ecology should review up-to-date scientific resources on stormwater and stormwater pollution, such as those available through the Washington Stormwater Center, Puget Sound Ecosystem Monitoring Program, the Stormwater Work Group, Stormwater Action Monitoring Program, and other sources, to ensure that the Factsheet contains the most up-to-date and accurate local stormwater data. The Factsheet is in some ways the backbone of Ecology's Clean Water Act NPDES Permits, providing the background and up-to-date science upon which the Permit must be based to require reduction of pollutants to the Maximum Extent Practicable, and use of All Known Available Reasonable Technology (AKART). By failing to update the Factsheet Ecology has failed to live up to its requirements under the Clean Water Act.
2. P. 6: Under the "Stormwater Problem" section, there is no mention of Urban Runoff Mortality Syndrome ("URMS"), orca recovery, PCBs, nutrients, copper- which has known lethal and sub-lethal impacts on salmonids. **Why did Ecology fail to discuss some of the most critical problems (URMS, orca recovery, PCBs, nutrient pollution, and copper) impacting Puget Sound water quality in the "Stormwater Problem" section?** The WSDOT Permit should explicitly address these issues, including by requiring WSDOT to address URMS through its S5 Stormwater Management Program requirements.
 3. **Why are PCBs, Mercury, and DDT excluded from Table 1 in the Factsheet, which lists "Common Pollutants in Stormwater and Some Potential Sources?"** This is a glaring error.
 4. PP. 8-9: Data from a 1990 study from Oregon is relied upon to characterize Washington Stormwater in the Factsheet (Tables 1 and 2). **Why was more recent and/or Washington specific stormwater data not included in the Factsheet to characterize stormwater here?**
 5. The Municipal Stormwater Permits emphasize the critical role of stormwater retrofits in reducing toxic pollution in stormwater. **Why is there no mention of retrofits, and the importance of retrofits in achieving the goals of the CWA, in the Factsheet?** The "Controlling Stormwater Discharges" section of the WSDOT Permit Factsheet should mention the central role and necessity of retrofits to achieve the goals of the CWA.
 6. Paragraph 1 on page 12 of the Factsheet reads: "The effectiveness and feasibility of treatment BMPs is variable, subject to some debate, and much remains to be learned." This sentence does not draw from and is not supported by the previous paragraphs, which do not discuss the effectiveness or feasibility of BMPs. This sentence is thus unsupported. The purpose or point of this sentence is unclear. This sentence should be removed.



7. Paragraph 3 on page 12 of the Factsheet concludes: “In summary, the complexity inherent in stormwater discharges and the difficulty of controlling such discharges will require many years to fully implement a program to adequately mitigate or prevent adverse environmental impacts.” This paragraph does not draw from and is not supported by the previous paragraphs, which do not discuss complexity or difficulty of stormwater control. This paragraph is thus unsupported, and moreover, the purpose or point of this paragraph is unclear. This paragraph should be removed.
8. The Limitations of the Permit section on page 12 should discuss the strengths of the WSDOT Permit and how the Permit will ensure that WSDOT meets State and Federal water quality laws and regulations.
9. P. 21: **When is The Western Washington Hydrologic Model due to be completed? Is this the same as the version that came out on October 10th, 2018, located at: <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals/Western-Washington-Hydrology-Model>? If yes, has the permit been updated to incorporate data from the model? If not, why not?**
10. P. 26: S4 Compliance with standards: “Consistent with Ecology’s priority of preventing future impacts to water quality from municipal stormwater discharges, existing discharges **were** to meet the MEP standard by implementing the SWMP in Appendix 5 plus any TMDL requirements, and new discharges **were not to** cause or contribute to a violation of water quality standards.” [Emphasis added]. **Why is this language in the past tense?** By using past tense, Ecology has failed to clearly state the current Permit requirements for WSDOT.
11. P. 26: Ecology has adopted “an interim BMP-based approach towards meeting the goals of the Clean Water Act and eventual compliance with water quality standards.” The Factsheet does not define a timeline within which WSDOT must comply with Washington’s water quality standards or the Clean Water Act. Ecology must include a timeline with a deadline by which WSDOT must come into compliance.
12. P. 27: The Factsheet erroneously states that “permit requirements established by Ecology must be tempered and limited by state law.” This is incorrect. State law does not supercede the Clean Water Act. “For example, the application of post construction stormwater controls on new development and re-development required by this permit must be done within the context of state vesting laws. Similarly, the inspection requirements of this permit must be carried out in a manner that is consistent with the state constitution and state law.” These statements are incorrect. *Snohomish County v. Pollution Control Hearings Board* (2016) held that stormwater regulations adopted pursuant to the Washington State’s National Pollutant Discharge Elimination System (“NPDES”) Municipal Stormwater Permit are not “land use



control ordinances” that are subject to the state’s statutory vested rights doctrine. Statements indicating otherwise must be removed from the Permit.

13. First flush toxicity testing should remain a requirement of the WSDOT Permit. Ecology says it is eliminating this requirement (p. 39) but the parameters of interest chart on page 40 includes this requirement. This must be clarified.

IV. GENERAL CONCERN

During other NPDES permit reissuance processes - for example, the Municipal Stormwater permits for Eastern and Western WA Phase I and II municipalities - Ecology engages in a public pre-draft process that includes stakeholder feedback early on. Providing a longer, more transparent public process whereby stakeholder concerns are addressed up front can result in a tailored draft that better addresses both policy and technical concerns known to those who work with the permit on the ground day to day, and those who experience the impacts of the permit firsthand. By not providing stakeholders a process to engage more deeply in the WSDOT Permit drafting process, Ecology has missed an opportunity to start off with a stronger draft permit that is more protective of water quality.

Conclusion

We have before us a critical opportunity to make meaningful strides to improve water quality in the Puget Sound region and throughout state waterways through the stormwater permits as envisioned in the Clean Water Act’s NPDES program, and to help stop the decline of our iconic but endangered salmon and orca whales. Unfortunately, Ecology’s Draft WSDOT Permit falls short of those goals at this time.

Thank you for your time and consideration, and for working with us to ensure that Washington’s WSDOT NPDES Permit protects water quality, recreational opportunities, endangered species recovery and human health.

Sincerely,

Alyssa Barton
Policy Analyst and Executive Coordinator

Chris Wilke
Puget Soundkeeper and Executive Director



February 4, 2019

Mr. Foroozan Labib
Department of Ecology
Water Quality Program
PO Box 47696
Olympia, WA 98504-7696

Dear Mr. Labib:

WSDOT appreciates the opportunity to comment on the public review draft of the 2019 *Washington State Department of Transportation National Pollutant Discharge Elimination System and State Waste Discharge Municipal Stormwater General Permit (Permit) and Fact Sheet*. Our comments are attached and include one table with comments on the draft Permit and one table with comments on the Fact Sheet.

While several of the comments on the draft Permit address typographical or grammatical errors, WSDOT would like to highlight the following comments, described in more detail in the attached table, requesting important clarifications:

1. Additional wording is needed in S1.B.1. to clarify that the Permit coverage area is based on the Phase I and II Permit coverage areas on date that those permits are issued, and does not change over the permit term (except when the 2019 Phase I and II Permits are issued). This clarification is needed because the Phase I and II Permits coverage areas may change over time due to jurisdictions' annexations or Phase I and II Permit modifications during this Permit's term. Additionally, any references within the Permit to the coverage area should reference S1.B.1. instead of "Phase I and II Permit coverage areas."
2. Wording throughout the Permit must be consistent in stating the compliance expectations for TMDLs are fully described in Appendix 3. Additionally, any references to compliance expectations for TMDLs should reference Appendix 3 and/or S1.B.2. instead of "applicable TMDL areas."
3. Additional wording is needed to clarify that Appendix 1 describes Highway Runoff Manual equivalency, similar to Appendix 10 of the Phase I Permit, rather than incorporating the manual in the Permit. Also needed is wording that specifies which

Mr. Foroozan Labib

February 1, 2019

Page 2

sections of the Highway Runoff Manual are requirements making it functionally equivalent to the required portions of Ecology's Stormwater Management Manuals.

Our detailed comments with proposed resolutions are included in two attachments, a table with comments regarding the draft Permit and a table with comments regarding the Fact Sheet.

Please let me know if you have any questions or if you would like to discuss any of these comments.

Sincerely,



Megan White, P.E.

Acting Director, Development Division

State Design Engineer

MW:sp

Enclosure

2019 DRAFT MUNICIPAL PERMIT REVIEW FORM

No.	Document	Page #	Section #	Comment	Proposed Resolution
1	Draft Permit	1	S1.B.1.	Language in the permit needs to clearly define where the Permit needs to be implemented, and when, so that WSDOT can fully comply during the entire permit term. The Permit coverage area is based on the Phase I and II Municipal Stormwater Permit areas, which can change over time due to jurisdictions' annexations or those permits being reissued or modified during the course of this Permit's term. WSDOT urges Ecology to clarify that the Permit coverage area is based on the Phase I and II Permit coverage areas on date that those permits are issued, and does not change over the permit term (except when the 2019 Phase I and II Permits are issued) even though the Phase I and II Permits coverage areas may change. As currently written, it could be interpreted that the coverage area is the Phase I and II coverage area at any point during the five year permit term rather than just at one point in time.	Add the clarifying language in red: "This permit covers stormwater discharges from municipal separate storm sewer systems (MS4s) owned or operated by WSDOT in areas covered by the 2019 Phase I Municipal Stormwater Permit, the 2019 Eastern Washington Phase II Municipal Stormwater Permit, and the 2019 Western Washington Phase II Municipal Stormwater Permit (2019 Permits) on the date the 2019 Permits are issued. "
2		1	S1.B.1.	Permit coverage wording needs to be consistent between sections. Currently this section refers to "tribal lands as stated in S2.E" however, S2.E does not use the same wording.	Change "tribal lands" to " Indian Country " to be consistent with S2.E.
3		1	S1.B.2.	The Permit needs to be clear and consistent about where the requirements are supposed to be implemented. The Permit also needs to be consistent between sections. Currently this section states "For TMDL areas that are not within the areas described in S1.B.1 above WSDOT shall, at a minimum, be responsible for the TMDL implementation actions found in Appendix 3." The words "at a minimum" add confusion around the compliance expectations for TMDLs outside of Phase I and II Permit areas (described in S1.B.1.) that assign a WLA to WSDOT. The compliance expectations for TMDLs are fully described in Appendix 3, so the wording here needs to be consistent with that.	Remove "at a minimum" from the last sentence.
4		2	S2.B.3.	Grammatical error	In the sentence "The discharge is from another illicit or non-stormwater discharge that is managed by WSDOT as provided in the following sections S2.B.3.a <u>and</u> S2.B.3.b.," change the underlined "and" to " or. "
5		2	S.2.B.3.a.xii.	Reduce redundancy, this item is already stated in S2.B.1.	Remove this item.
6		3	S3.A.	The Permit needs to be clear and consistent about where the requirements are supposed to be implemented. The Permit also needs to be consistent between sections. The compliance expectations for TMDLs are fully described in Appendix 3, so the wording here needs to be consistent with that.	Add the language in red to clarify and be consistent with other sections: "WSDOT shall comply with all of the conditions of this permit for the regulated MS4s it owns or operates within the geographic area covered pursuant to S1.B.1. WSDOT shall comply with the implementation actions found in Appendix 3 within the geographic areas covered pursuant to S1.B.2. "
7		7, 8, 9, 11, 12, 13, 20, 21	S5.C.3.b., S5.C.3.c., S5.C.5.b., S5.C.7.b.i., S5.C.7.c.i., S5.C.7.d., S5.C.7.f., S8.F.16., and S8.F.18.	The Permit needs to be clear and consistent about where the requirements are supposed to be implemented. Currently, the wording in these sections describing where the requirements need to be implemented makes it unclear which actions need to be implemented in TMDL areas. The actions required in TMDL areas are fully described in Appendix 3, so the wording here needs to be consistent with that. These sections should point back to the description of the Phase I and II permit coverage area in S1.B.1.	In each section, replace "...within areas covered by the Phase I Municipal Stormwater Permit, the Eastern Washington Phase II Municipal Stormwater Permit, the Western Washington Phase II Municipal Stormwater Permit, and as applicable TMDL areas included in this permit" with " within areas described in S1.B.1. "
8		8	S5.C.3.c.	Typographical error	Add an "s" at the end of "year": "No later than three years s from the effective date..."

No.	Document	Page #	Section #	Comment	Proposed Resolution
9		8	S5.C.4.c.i.	The Permit requirements related to notifications need to be consistent between sections. Currently the wording here is "Immediately take appropriate action for all illicit discharges, including spills, which <u>are determined to constitute</u> a threat to human health, welfare or the environment, consistent with requirements in General Condition G3." The underlined text is not consistent with G3.	Make this illicit discharge notification requirement consistent with G3 by changing "are determined to constitute" to "could constitute."
10		9	S5.C.5.a.	Grammatical error	Add "the" before "Washington": "WSDOT shall apply the minimum requirements, thresholds, adjustments, and definitions in the Washington State Highway Runoff Manual (HRM)..."
11		9	S5.C.5.b.	The Permit needs to be clear about which parts of the HRM are required. The Permit also needs to be consistent between sections. Currently the wording here is "WSDOT shall apply the <u>technical standards</u> in HRM or an Ecology approved alternative approach..." The underlined text is not consistent with S5.C.5.a. or the HRM.	Replace "technical standards" with the wording in red: "WSDOT shall apply the minimum requirements, thresholds, adjustments, and definitions in the HRM or an Ecology approved alternative approach demonstrating compliance with Washington State Water Quality Standards..."
12		10	S5.C.6.	Typographical error	Remove the extra "P" at the end of "SWMPP"
13		10	S5.C.6.b., and S5.C.6.c.	Grammatical errors	Add "the" before "HRM": "WSDOT shall retrofit (i.e. provide stormwater treatment or flow control to) existing highways if a project triggers runoff treatment or flow control requirements as defined in the HRM," and "For projects located within the Puget Sound Basin that trigger runoff treatment or flow control requirements as defined in the HRM..."
14		11	S5.C.7.a.	WSDOT proposes adding language consistent with the Phase I permit that states exceeding the maintenance standard between inspections and/of maintenance is not a permit violation.	Add the following language in red: " The purpose of the maintenance standard is to determine if maintenance is required. The maintenance standard is not a measure of the facility's required condition at all times between inspections. Exceeding the maintenance standard between inspections and/or maintenance is not a permit violation. "
15		12	S5.C.7.c.iii.	Typographical error	Change "and" to "an": "Unless there are circumstances beyond WSDOT's control, when an inspection..."
16		15	S6.	The Permit needs to be clear and consistent about where the requirements are supposed to be implemented. The Permit also needs to be consistent between sections. Currently the wording here states "WSDOT shall meet the timeframes identified in either the TMDL or associated implementation documents." This contradicts S6.1. just above. The actions required in TMDL areas are fully described in Appendix 3, so the wording here needs to be consistent with that.	Delete "WSDOT shall meet the timeframes identified in either the TMDL or associated implementation documents" from the end of S6. Add "and timeframes" to S6.1.: "WSDOT shall comply with implementation actions and timeframes listed in Appendix 3.
17		16	S7.B.	Typographical error	Add a space between the first and second sentences "WSDOT shall use EPA's 2009 or most recent version of the Urban Stormwater BMP Performance Monitoring as additional guidance for preparing the BMP evaluation. Monitoring... "
18		17	S7.D.	Grammatical errors	Add an "s" at the end of "submittal", add "both" and change "studies" to "study's": "Within one year following the submittals of both the facilities and highways study's final monitoring reports or no later than October 1, 2021..."
19		18	S7.F.3.	To allow for necessary flexibility in implementing monitoring requirements including QAPP revisions after implementation has already begun, WSDOT suggests changing the language to allow for Ecology approval outside of a formal letter. Based on experiences during the current permit cycle, WSDOT thinks this change would ensure compliance while negating potential paperwork lag time.	Delete the word "letters." Instead it would read "WSDOT shall obtain Ecology approval for each QAPP prior to implementation."
20		20	S8.F.2.	This information is required to be provided upon Ecology's request in S5.A.2. For consistency, it should be removed here.	Remove this item.

No.	Document	Page #	Section #	Comment	Proposed Resolution
21		23	G3.	Grammatical error	Add the words in red "For spills which might cause bacterial contamination of shellfish, such as those which might result from broken sewer lines..."
22		26	G9.F.	Grammatical error	Add comma between "install" and "calibrate": WSDOT shall install, calibrate and maintain..."
23		26	G9.F.	The Permit needs to be consistent between sections. S8.D. and G9.B. both state records must be kept for the life of the permit plus five years. This section currently says three years.	Change "three" to "five": "WSDOT shall retain calibration records for the life of this permit plus five years."
24		26	G10.	Currently this section references Ecology's 2012 Stormwater Management Manual for Western Washington, Volume IV, Appendix IV-G. This needs to be updated.	Update reference to Ecology's SWMMWW.
25		26	G10.	Clarify that solid waste is regulated by local Health Departments. Current language states "Solids generated from maintenance of the MS4 may be reclaimed, recycled, or reused when allowed by local codes and ordinances." Since these actions may not be allowed, WSDOT suggests simplifying and clarifying language.	Replace "Solids generated from maintenance of the MS4 may be reclaimed, recycled, or reused when allowed by local codes and ordinances" with " solid waste is regulated by local Health Departments. "
26		29	G19.B.	Typographical error	Add a space between "overall" and "development": "... is no longer accurate because a different individual or position has responsibility for the overall d development and implementation..."
27		31	Definition: Component	Currently this definition states WSDOT's Stormwater Management Program Plan appears in Appendix 5 of this permit. This is inaccurate.	Remove the language "appearing in Appendix 5 of this permit."
28		34	Definition: Receiving waterbody	Typographical error	Remove the "ed" from "discharged."
29		34	Definition: Regional Stormwater Monitoring Program	The second paragraph in this definition states "for this permit term, RSMP status and trends monitoring will be conducted in the Puget Sound basin only." This is inaccurate.	Either remove "for this permit term, RSMP status and trends monitoring will be conducted in the Puget Sound basin only," or add the Lower Columbia River basin: "for this permit term, RSMP status and trends monitoring will be conducted in the Puget Sound basin and the Lower Columbia River basin. "
30		35	Definitions: Stormwater Management Manuals	Both the definitions for the Stormwater Management Manual for Western Washington and the Stormwater Management Manual for Eastern Washington refer to published dates that are in the future. Since these dates may or may not be accurate, WSDOT recommends removing them.	Remove "published by Ecology in August 2019" and "published by Ecology in September 2019."
31		36	Definition: VFS	Typographical error	Add the "V" at the beginning: " V FS"

No.	Document	Page #	Section #	Comment	Proposed Resolution
32		37	Appendix 1	WSDOT suggests Ecology revises this appendix title to clarify that the Highway Runoff Manual itself is not an appendix in this Permit and thus not an expansion of permit requirements under S3.C. which states “unless otherwise noted, all appendices to this permit are incorporated by this reference as if set forth fully within this permit.” Rather, Ecology should clarify that instead this appendix describes HRM equivalency similar to Appendix 10 of the Phase I Permit.	Change Appendix 1 title to include the word equivalency: “Appendix 1: Highway Runoff Manual (HRM) Equivalency ”
33		37	Appendix 1	WSDOT suggests Ecology clarifies that the Highway Runoff Manual in its entirety is not an appendix in this Permit and that instead this appendix describes HRM equivalency similar to Appendix 10 of the Phase I Permit. S5.C.5.a. references the HRM “as specified in Appendix 1.” WSDOT recommends adding wording that specifies which sections of the HRM are requirements making it functionally equivalent to the required portions of Ecology’s Stormwater Management Manuals.	Add the language in red: The Washington State Department of Ecology determined that the following sections of WSDOT’s 2019 Highway Runoff Manual are functionally equivalent to the required portions of Ecology’s 2019 Stormwater Management Manuals: HRM Chapter 3 Minimum Requirements HRM Chapter 5 Stormwater Best Management Practices Design Criteria HRM Maintenance Standards Tables 5-12 through 5-24 HRM Chapter 6 Temporary Erosion and Sediment Control Manual HRM Glossary Definitions
34		37	Appendix 1	WSDOT suggests Ecology revises this appendix to clarify that the Highway Runoff Manual itself is not an appendix in this Permit and that instead this appendix describes HRM equivalency similar to Appendix 10 of the Phase I Permit. WSDOT suggests removing the website to the HRM from the Permit to make this separation more clear and allow the flexibility of WSDOT moving the HRM in its websites or changing the URL in the future.	Remove web address and link to the HRM and add wording in red: “ A link to WSDOT’s 2019 HRM can be found on Ecology’s website. ”
35		79	Appendix 3, Part 2, #12	Henderson Inlet Watershed Fecal Coliform TMDL was move from Part 1 to Part 2 because WSDOT completed the specific action item (retrofit) required under the current permit. The Permit needs to be clear and consistent about where the requirements are supposed to be implemented. Henderson Inlet is only partially covered by the Phase I permit so expectations need to be clarified similar to the other TMDLs in this part which are partly within Phase I and II areas.	Under the Henderson Inlet Watershed Fecal Coliform TMDL, add a bullet point stating “ WSDOT’s obligations apply to Phase II municipal permit areas only ”
36		79	Appendix 3, Part 2	Adding the Henderson Inlet Watershed Fecal Coliform TMDL to the end of the list is inconsistent with the alphabetical organization of the existing list.	Move Henderson Inlet Watershed Fecal Coliform TMDL in between the Green River Temperature TMDL and Liberty Bay Watershed Fecal Coliform Bacteria TMDL.
37		96	Appendix 6, Recordkeeping and Reporting, Annual Monitoring Reports	The last sentence states “For the Annual Stormwater Discharge Monitoring Report to be considered on time, the EIM data submission process must be initiated before April 1 of each relevant year, and completed by June 15 of each relevant year.” This wording is consistent with the Phase I Permit language as well as their required annual report timelines. WSDOT suggests changing the dates to be in line with the annual report requirements in this Permit.	Change “April 1” to “November 1” and “June 15” to “the following January 15”: “For the Annual Stormwater Discharge Monitoring Report to be considered on time, the EIM data submission process must be initiated before November 1 of each relevant year, and completed by the following January 15 of each relevant year.

2019 FACT SHEET REVIEW FORM

No.	Document	Page #	Section #	Comment	Proposed Resolution
1	Fact Sheet	N/A	General Comment	Many citations are provided throughout the document but there is not a complete documentation of the references (i.e. bibliography). Without complete documentation of citations, it is difficult for readers to verify the information presented. Further, given the purpose of the Fact Sheet, WSDOT thinks more (and more up-to-date) documentation and citations are needed to support the information and conclusions contained in the document.	Create a <i>References</i> section or bibliography
2		4	I. Introduction, last paragraph	Grammatical error	Add the words in red: "WSDOT will annually update their SWMP and make it available to the public for review and comment."
3		7	Characterization of Stormwater, last paragraph	Currently this section reads "Many pollution sources contaminate stormwater including land use activities, operation and maintenance activities, illicit discharges and spills..." This paragraph appears to identify "operations and maintenance activities" as a pollution source. While maintenance facilities are covered under the permit, WSDOT thinks this category would fit into the "land use activities." Operations and maintenance activities are an important part of achieving compliance with the Permit and one of our tools to implement MEP and AKART. We recommend removing it from this description.	Remove "operations and maintenance activities" from the sentence "Many pollution sources contaminate stormwater including land use activities, operation and maintenance activities, illicit discharges and spills, atmospheric deposition, and vehicular traffic conditions."
4		9	First bullet point, second sentence	Grammatical error	Remove "because" from the sentence: "The because National Urban Runoff Program (NURP) findings show no significant differences..."
5		16	EPA Rules, first paragraph, last sentence	Repetitive/redundant language from previous sentence.	Remove "state highway systems" from the sentence: "Other examples of other publicly-owned storm sewer systems include state highway systems, ports, drainage districts..."
6		16	Second bullet point	Grammatical error	Remove "to" from the sentence: "Permits must to cover a large geographic area..."
7		18	Construction Stormwater...	The Construction Stormwater General Permit is issued to many parties, not just WSDOT. We suggest revising the first sentence to clarify this.	Replace "Under this permit, WSDOT" with "Permittees": " Permittees must adopt and implement measures..."
8		19	Large and Medium...Permits, last paragraph (first paragraph on p. 19)	The last sentence inaccurately references "proposed requirements for watershed-based stormwater planning for western Washington Permittees." This may be a carry-over from the 2014 Permit Fact Sheet but should be deleted as this is no longer applicable/accurate.	Remove "proposed requirements for watershed-based stormwater planning for western Washington Permittees" from the sentence "Ecology has established expectations in this permit for regional coordination in monitoring efforts..."
9		19	Wester and Eastern...second paragraph	Grammatical errors	Add or change to the language in red: "Many of the Phase II Permittees in western Washington are located in counties regulated by the Phase I permit. WSDOT shares basins with Phase I and Phase II permittees, has interconnected conveyance systems..."
10		22	First paragraph	The last two sentences of the section should be amended to include the planned status and trends monitoring studies in the Lower Columbia River basin. The last sentence should also be revised to include the option WSDOT has to perform outfall monitoring.	Add the language in red: "The proposal for monitoring status and trends in Puget Sound receiving waters as well as the Lower Columbia River basin would provide information to evaluate water quality changes in urban areas where programs are being implemented. The proposed permit requires WSDOT participation in the planned status and trends monitoring studies in Puget Sound basin and the Lower Columbia River basin, or WSDOT could choose to do outfall monitoring as defined in S7. "

No.	Document	Page #	Section #	Comment	Proposed Resolution
11		22	S1, last paragraph on p. 22	This comment is consistent with comment #1 on the Draft Permit Comment Form. Language in the Permit and Fact Sheet need to clearly define where the Permit needs to be implemented, and when, so that WSDOT can fully comply during the entire permit term. The Permit coverage area is based on the Phase I and II Municipal Stormwater Permit areas, which can change over time due to jurisdictions' annexations or those permits being reissued or modified during the course of this Permit's term. WSDOT urges Ecology to clarify that the Permit coverage area is based on the Phase I and II Permit coverage areas on date that those permits are issued, and does not change over the permit term (except when the 2019 Phase I and II Permits are issued) even though the Phase I and II Permits coverage areas may change. As currently written, it could be interpreted that the coverage area is the Phase I and II coverage area at any point during the five year permit term rather than just at one point in time.	Add the clarifying language in red: "The permit covers discharges from WSDOT's Municipal Separate Storm Sewer Systems (MS4s), as defined by EPA at 40 CFR 122.26(b)(4) and (7), in all municipal stormwater 2019 Phase I and Phase II areas on the date the 2019 Permits are issued. Prior to the effective dates of 2019 Permits, the coverage areas are the same as in WSDOT 2014 permit."
12		22	S1, last paragraph on p. 22	This comment is consistent with comment #3 on the Draft Permit Comment Form. The Permit needs to be clear and consistent about where the requirements are supposed to be implemented. The Permit also needs to be consistent between sections. Currently this section states "For TMDL areas that are not within the Phase I and Phase II areas, WSDOT shall, at a minimum, be responsible for the TMDL implementation actions found in Appendix 3 of the permit." The words "at a minimum" add confusion around the compliance expectations for TMDLs outside of Phase I and II Permit areas (described in S1.B.1.) that assign a WLA to WSDOT. The compliance expectations for TMDLs are fully described in Appendix 3, so the wording here needs to be consistent with that.	Remove "at a minimum" from the last sentence in the Permit wording as well as here.
13		24	S2.B.3	Grammatical errors	Remove "are" from the sentence: "This permit requires all other non-stormwater discharges are to be addressed..." Change "These languages were" to "This language was" and add "WSDOT's" for clarification: "This language was moved from Appendix 5 of WSDOT's 2014 permit and placed under S2.B.3 for clarity."
14		24	S2.C	The reference to Appendix 5 is not accurate.	Replace "Appendix 5" with "S5.C": "...stormwater management program required under S5.C. of this permit."
15		24	S2.E	Grammatical errors	Add "the" in two places: "The language in the 2019 permit has been modified from that in the 2014 permit for clarity."
16		25	S4, last sentence	The reference to Appendix 5 is not accurate.	Replace "in Appendix 5" with "required under S5.C": "...MEP standard by implementing the SWMP required under S5.C..."
17		28	S5.A.1, last sentence	Suggest adding clarification	Add "each" to the sentence: "The updated SWMP must be submitted to Ecology with each annual report."
18		28-29	S5.B	Performance indicators and Appendix 2: Table of performance indicators no longer exist as all requirements and timelines were incorporated into the body of the permit.	Add the language in red: "During the initial SWMP development process in 2009, WSDOT identified key activities and performance indicators associated with each minimum required activity. Those performance indicators were incorporated into the body of the 2019 permit as appropriate."
19		29	Legal Authority	Grammatical error	Add "an": "As an operator of an MS4, WSDOT receives..."
20		29	Coordination	Grammatical error	Add "to": "Internal coordination requires WSDOT to establish communication..."
21		30	Municipal Separate Storm Sewer...	Revise section title to be consistent with S5.	Change "Municipal Separate Storm Sewer System Mapping and Documentation" to "MS4 Asset Mapping"

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22		30	Municipal Separate Storm Sewer...	After the first sentence, the language is all regarding IDDE/spills, not mapping. WSDOT suggests moving this to the IDDE section.	Move everything after "The SWMP contains the procedures and protocols related to responding..." into the IDDE section.
23		30	Controlling Runoff..., second paragraph	The HRM is not appended to the permit. WSDOT recommends revising wording to clarify.	Either delete "The HRM will be appended to this permit for public review and comment" or revise with language in red: "The HRM will be available for review during the Permit public review and comment period. "
24		30	Controlling Runoff from New Development, Redevelopment, and Construction Sites, last paragraph	Suggest adding the list of required sections of the HRM (see comment #34 on the Draft Permit Comment Form) to clarify that these are the sections that contain the requirements of the HRM that make it functionally equivalent to the required portions of Ecology's Stormwater Management Manuals.	Add the following language in red to the last paragraph: "HRM Chapter 3 Minimum Requirements HRM Chapter 5 Stormwater Best Management Practices Design Criteria HRM Maintenance Standards Tables 5-12 through 5-24 HRM Chapter 6 Temporary Erosion and Sediment Control Manual HRM Glossary Definitions"
25		31	4 th paragraph	This paragraph references "Appendix 1 (HRM)" and "Appendix 1" inaccurately. WSDOT suggests Ecology clarifies that the HRM in its entirety is not an appendix in the Permit and that instead Appendix 1 describes HRM equivalency. As currently worded, that is unclear	Change "Appendix 1 (HRM)" to "the HRM" in the sentence "...demonstrating compliance with the state water quality standards on site and project specific basis as compared to those in the HRM , if they have been approved..." and change "Appendix 1" to "the HRM" in the sentence "...equal protection of receiving waters and equal levels of pollutant control when compared to the provisions in the HRM. "
26		32	2 nd paragraph, 2 nd sentence	WSDOT is unclear which permit requirement the sentence "Those measures include review of all stormwater site plans submitted prior to construction records of performance of 95% of the required pre-project, active project, and completed project inspections," is referring to.	Revise this sentence to make it more clear and add a reference to the specific permit requirement that it points to.
27		32	2 nd paragraph, 3 rd sentence	This sentence references "...Chapter 6 of the HRM, Appendix 1 to the permit." WSDOT suggests Ecology clarifies that the HRM in its entirety is not an appendix in the Permit and that instead Appendix 1 describes HRM equivalency. As currently worded, that is unclear.	Delete "Appendix 1 to the permit."
28		32	Structural Stormwater Controls	Revise section title to be consistent with S5.	Change "Structural Stormwater Controls" to " Stormwater Retrofit for Existing Highways "
29		32	Structural Stormwater Controls	Grammatical error	Move "WSDOT's" to the beginning of the sentence and add "their": " WSDOT's SWMP describes their stormwater BMP retrofit program..."
30		32	Structural Stormwater Controls	Suggest deleting the last two sentences in the last paragraph of this section related to TMDLs as the TMDL retrofits are handled under our I-4 Stand-alone Stormwater Retrofits.	Delete the rest of the paragraph after "WSDOT's retrofit program includes the "Cleanup Plan-triggered" element..."
31		32-33	Source Control Program...	WSDOT suggests moving wording in this section to the IDDE section.	Move wording in this section to the IDDE section.
32		33-34	Illicit Connections...	Revise section title to be consistent with S5. Additionally, to make the organization of the Fact Sheet consistent with how the requirements are organized in S5, WSDOT suggests moving the Source Control, IDDE, and Proposed changes to the tracking and reporting of IDDEs sections to page 30 in the Fact Sheet between Mapping information and Controlling Runoff.	Change "Illicit Connections and Illicit Discharges Detection and Elimination" to "Traffic Collision Related Spills, Illicit Discharges, and Illicit Connections" and move this section (along with the Source Control section (see comment #31 above) and the Proposed changes to the tracking and reporting of IDDEs section) to page 30 in the Fact Sheet between Mapping information and Controlling Runoff.
33		33	Proposed changes...	Typographical error	Add "r" in "tacking": "Proposed changes to the tracking and reporting of IDDEs"

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34		37	Public Involvement, last sentence	The word "likely" adds confusion and is unnecessary.	Delete "likely" from the sentence "Ecology expects that existing public involvement and participation opportunities conducted by WSDOT are likely sufficient to satisfy this requirement."
35		37	Stormwater Management for...	This section doesn't make sense here. WSDOT suggests moving this section to page 32 under the renamed (per comment #28 above) Stormwater Retrofit for Existing Highways section.	Move this section to page 32 under the renamed (per comment #13 above) Stormwater Retrofit for Existing Highways section.
36		37	S6, second paragraph (last paragraph on p. 37)	The Permit needs to be clear and consistent about where the requirements are supposed to be implemented. The compliance expectations for TMDLs are fully described in Appendix 3, so the wording here needs to be consistent with that.	Add the language in red to the second sentence in the paragraph: "Section S6 and Appendix 3 of the permit have the TMDL requirements applicable..."
37		39	First paragraph	The sentence "WSDOT was not included in the cost allocations for the 2013 permit but WSDOT is included in the cost allocations for regional receiving water monitoring in the 2019 permit," does not acknowledge that WSDOT contributed to Puget Sound status and trends monitoring under the 2014 permit.	Add the language in red: "WSDOT was not included in the cost allocations for the 2013 Phase I and II permits but contributed funds to Puget Sound status and trends monitoring as required under WSDOT's 2014 permit. WSDOT is included in the cost allocations..."
38		39	Specific Parameters of Interest	The date for the proposed permit is inaccurate:	Add "and 2014" to the sentence after "2009" and change the existing "2014" to "2019": "...for monitoring under the 2009 and 2014 permits and will continue in the proposed 2019 permit, where applicable"
39		45	General Conditions, G3	G3 inaccurately states that "G3 is revised in the proposed permit to include notification and response procedures for traffic-related spills." This may be a carry-over from the 2014 Permit Fact Sheet but should be deleted as this is no longer applicable/accurate.	Suggest deleting the last sentence under G3: "G3 is revised in the proposed permit to include notification and response procedures for traffic-related spills."
40		45	General Conditions, G9	G9 should be revised to say that records shall be retained for the life of the permit plus five years, which is consistent with S7.	Change "three years" to "five years."