



CITY OF SEATTLE
2024 NPDES PHASE I
MUNICIPAL STORMWATER PERMIT STORMWATER
MANAGEMENT PROGRAM PLAN



March 2024



Seattle
Public Utilities

Cover photo:

Adopt-A-Drain participants clearing away debris from a storm drain inlet. Seattle chose the Adopt-A-Drain Program to meet our current stormwater permit's behavior change campaign requirements.

More information can be found here:

<https://www.seattle.gov/utilities/volunteer/storm-drain-care/adopt-a-storm-drain>

CITY OF SEATTLE

2024 STORMWATER MANAGEMENT PROGRAM PLAN

TABLE OF CONTENTS

APPENDICES	II
LIST OF FIGURES.....	II
LIST OF TABLES.....	II
I. INTRODUCTION	I-1
I.1 Introduction	I.1-1
I.1.1 Background	I.1-1
I.1.2 Seattle’s MS4 Area	I.1-3
I.1.3 Stormwater Monitoring and Assessment – S8	I.1-5
II. STORMWATER MANAGEMENT PROGRAM (SWMP) PLAN	II-1
II.1 Legal Authority – S5.C.1	II.1-1
II.1.1 Permit Requirements.....	II.1-1
II.1.2 Current and Planned Activities for 2024.....	II.1-1
II.2 MS4 Mapping and Documentation – S5.C.2.....	II.2-1
II.2.1 Permit Requirements.....	II.2-1
II.2.2 Current and Planned Activities for 2024.....	II.2-1
II.3 MS4 Coordination – S5.C.3	II.3-1
II.3.1 Permit Requirements.....	II.3-1
II.3.2 Current and Planned Activities for 2024.....	II.3-1
II.4 Public Involvement and Participation – S5.C.4	II.4-1
II.4.1 Permit Requirements.....	II.4-1
II.4.2 Current and Planned Activities for 2024.....	II.4-1
II.5 Controlling Runoff from New Development, Redevelopment and Construction Sites – S5.C.5.....	II.5-1
II.5.1 Permit Requirements.....	II.5-1
II.5.2 Current and Planned Activities for 2024.....	II.5-2
II.6 Stormwater Planning – S5.C.6	II.6-1
II.6.1 Permit Requirements.....	II.6-1
II.6.2 Current and Planned Activities for 2024.....	II.6-1
II.7 Structural Stormwater Controls – S5.C.7	II.7-1
II.7.1 Permit Requirements.....	II.7-1
II.7.2 Current and Planned Activities for 2024.....	II.7-1
II.8 Source Control Program for Existing Development – S5.C.8	II.8-1



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II.8.1 Permit Requirements.....	II.8-1
II.8.2 Current and Planned Activities for 2024.....	II.8-1
II.9 Illicit Connections and Illicit Discharges Detection and Elimination – S5.C.9.....	II.9-1
II.9.1 Permit Requirements.....	II.9-1
II.9.2 Current and Planned Activities for 2024.....	II.9-1
II.10 Operation and Maintenance Program – S5.C.10.....	II.10-1
II.10.1 Permit Requirements.....	II.10-1
II.10.2 Current and Planned Activities for 2024.....	II.10-2
II.11 Education and Outreach Program – S5.C.11.....	II.11-1
II.11.1 Permit Requirements.....	II.11-1
II.11.2 Current and Planned Activities for 2024.....	II.11-1
III. REFERENCES, DEFINITIONS AND ABBREVIATIONS.....	III-3
III.1 References	III.1-1
III.2 Definitions and Abbreviations	III.2-1

APPENDICES

APPENDIX A

Mayor’s Executive Order (Clerk’s File No. 309104)

APPENDIX B

IDDE Field Screening Methodology

LIST OF FIGURES

Figure I.1-1 The City of Seattle’s Sewer and Drainage Systems	I.1-4
Figure II.3-1 City Organizational Chart.....	II.3-2
Figure II.7-1 Major Receiving Water Bodies	II.7-2
Figure II.8-1 Audit Process	II.8-3
Figure II.8-2 Stormwater Compliance Inspection Process.....	II.8-4
Figure II.8-3 Enforcement Process.....	II.8-5
Figure B-1 IDDE Field Screening Flow Chart	B-3

LIST OF TABLES

Table II.7-1 Structural Stormwater Control Project List	II.7-4
Table III-1 Definitions.....	III.2-1
Table III-2 Abbreviations.....	III.2-6
Table B-1 IDDE Screening Parameters.....	B-2

CITY OF SEATTLE STORMWATER MANAGEMENT PROGRAM (SWMP) PLAN

Prepared in compliance with the 2019 Phase I Municipal Stormwater National Pollutant Discharge Elimination System (NPDES) and State Discharge General Permit for discharges from Large and Medium Municipal Separate Storm Sewer Systems (effective August 1, 2019, expires July 31, 2024)

Permit Number WAR044503

**City of Seattle
Seattle Public Utilities
Seattle, Washington**

Date: March 2024

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CITY OF SEATTLE
2024 STORMWATER MANAGEMENT PROGRAM PLAN

I. INTRODUCTION



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I.1 Introduction

I.1.1 Background

I.1.1.1 Federal and State Laws and Regulations

The National Pollutant Discharge Elimination System (NPDES) program is a key element of the Federal Clean Water Act¹, a law that aims to restore and maintain the quality of waters. NPDES permits are tools used to control the discharge of pollutants into waterbodies, from sources like wastewater discharges and pathways like stormwater.

The Washington State Department of Ecology (Ecology) has authority regarding implementation of the federal NPDES program in the State of Washington and has state law authority. Ecology issues NPDES and state waste discharge permits to regulate runoff that's generated at individual facilities or groups of entities with common activities (the latter may be general permits). Municipal Separate Stormwater Sewer System (MS4) permits authorize the discharge of stormwater to surface waters and groundwaters of the state from MS4s owned or operated by Permittees, and set strict requirements on the conditions of those discharges to prevent water pollution. In order to discharge stormwater to surface water or groundwater in accordance with the federal Clean Water Act and the State Water Pollution Control Act², municipalities must implement the Special Conditions and General Conditions of the MS4 Permit.

For regulated municipal stormwater discharges, the NPDES program requires permits for large, medium, and small MS4s. The Phase I regulations of the MS4 program went into effect in 1990 and apply to MS4s in municipalities with populations of more than 100,000 (medium and large MS4s), such as the City of Seattle (City). These permits are designed so that compliance meets the minimum federal requirements as well as applicable State requirements. The first Phase I MS4 Permit was issued in 1995 and subsequent versions have continued to build, improve, and refine this programmatic permit.

On July 1, 2019, Ecology issued the 2019-2024 Phase I Municipal Stormwater Permit as a general permit that covers Phase I municipalities, including the City of Seattle, City of Tacoma, Pierce County, King County, Snohomish County, Clark County and secondary permittees (Ecology, 2019b). The Phase I MS4 Permit became effective on August 1, 2019, was modified on October 20, 2021, and will expire on July 31, 2024. The current permit is available to view online at Ecology's website³.

¹ Note: The "Clean Water Act" as a term refers to the body of law that includes: Federal Water Pollution Control Act (1972), Clean Water Act (1977), and the Water Quality Act (1987), as may be amended from time to time. Clean Water Act-regulated stormwater discharges are covered in Title 40 Code of Federal Regulations (CFR) Part 122 Section 26, or 40 CFR 122.26, codified in Washington under WAC Chapter 173-226), and elsewhere.

² Washington State's Water Pollution Control Act is regulated under Revised Code of Washington (RCW) Chapter 90.48.

³ <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits/Municipal-Stormwater-Phase-I-Permit>



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I.1.1.2 Stormwater Management Program (SWMP) Plan

A main component of the current Phase I Municipal Stormwater Permit (Permit) is to develop and implement a Stormwater Management Program (SWMP). The SWMP is a set of actions and activities to apply to MS4s and areas served by MS4s owned or operated by the City, designed to reduce the discharge of pollutants from the City's MS4 to the Maximum Extent Practicable (MEP), meet state requirements to apply All Known Available and Reasonable methods of prevention control and Treatment (AKART), and protect water quality. The City's SWMP contains the 11 components outlined in Permit Condition S5.C. The City, and other Phase I MS4 Permittees, must document the SWMP, called a SWMP Plan, review and update the Plan at least annually (Permit Condition S5.A.1), submit it to Ecology with the Annual Report by March 31 after each calendar year (S5.A.1, S9.A, and S9.D), and upload it to the City's website by May 31 annually (S5.C.4.b). The SWMP Plan may also be updated based on public comments received; updated SWMP Plans will be posted on the City webpage at <https://www.seattle.gov/utilities/about/plans/drainage-and-sewer/stormwater-management-plan>.

This SWMP Plan describes the City's plans for permit-related activities to be conducted during 2024 (January 1 to December 31, 2024).⁴ Section II of this SWMP Plan is organized to align with the structure of the S5.C Permit requirements. The 11 components of S5.C and this SWMP Plan include:

S5.C.1 Legal Authority

S5.C.2 MS4 Mapping and Documentation

S5.C.3 Coordination

S5.C.4 Public Involvement and Participation

S5.C.5 Controlling Runoff from New Development, Redevelopment, and Construction Sites

S5.C.6 Stormwater Planning

S5.C.7 Structural Stormwater Controls

S5.C.8 Source Control Program for Existing Development

S5.C.9 Illicit Connections and Illicit Discharges Detection and Elimination

S5.C.10 Operation and Maintenance Program

S5.C.11 Education and Outreach Program

This document describes how the City implements these SWMP components by outlining minimum performance requirements, principal responsibilities, current status, and upcoming work or goals. In addition, Section I.1.1.2 describes how the City meets the stormwater monitoring and assessment requirements of Permit Condition S8. The abbreviations and terms used in this document are defined in Section III.

⁴ The 2019 Phase I MS4 Permit expires on July 31, 2024, and the 2024 permit is anticipated to become effective on August 1, 2024, expiring on July 31, 2029. The City's SWMP for calendar year 2024 will therefore implement requirements of the 2019 permit for 7 months and the 2024 permit for 5 months. Based on the draft 2024 permit language shared with the public in Fall 2023, the City expects that the SWMP requirements for August through December 2024 will closely resemble implementation of the 2019 permit in January through July 2024 (i.e., most compliance deadlines in the 2024 permit begin in 2025), and the SWMP is written with that assumption.

I.1.2 Seattle's MS4 Area

Seattle has three types of systems to convey stormwater and wastewater: a separated sewer system, a partially separated system, and a combined sewer system (Figure I.1-1). While there are some areas of overlap, different parts of the City have different types of systems:

- In a **separated** sewer system, stormwater and wastewater travel in separate conveyances. Stormwater is directed to a separate drainage system and conveyed to drainage outlets. Wastewater is conveyed from homes and businesses to treatment plants operated by another municipality. About 27% of Seattle's sewer system is fully separated.
- In a **partially separated** system, all drainage once flowed in the combined sewer system. Storm drain separation projects were built, and stormwater from streets was diverted to be conveyed through a separate drainage system to drainage outlets. The remaining wastewater from inside homes and businesses, plus stormwater from roof gutters and downspouts, are conveyed in the same pipes to treatment plants... About 40% of Seattle's sewer system is partially separated.
- In the **combined** sewer system, wastewater and stormwater travel in the same pipes to treatment plants; combined sewers and areas of the City that drain to combined sewers are outside the municipal stormwater permit structure and not covered by the Phase I Municipal Stormwater Permit. About 33% of Seattle's sewer system is combined. Due to the Permit's scope, the City's SWMP is not implemented for discharges to or from the combined sewer system or for areas that drain to the combined sewer system.

The Phase I MS4 Permit applies to discharges from, and property draining to the **separated and partially-separated** drainage infrastructure in the City.

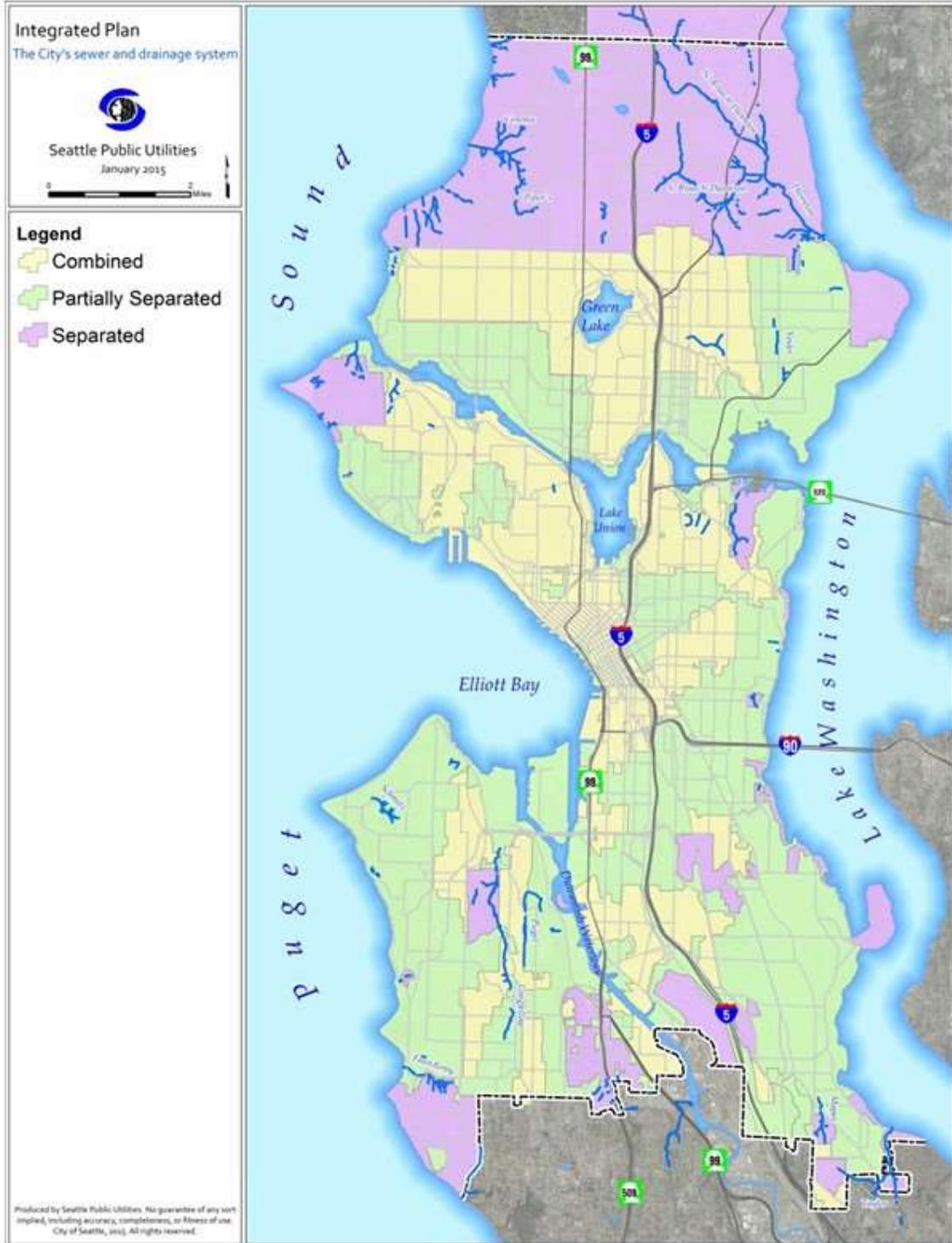


Figure I.1-1 The City of Seattle's Sewer and Drainage Systems

I.1.3 Stormwater Monitoring and Assessment – S8

The 2019 Phase I MS4 Permit requires Permittees to implement the Regional Status and Trends Monitoring program (Special Condition S8.A) and Stormwater Management Program Effectiveness and Source Identification Studies (Special Condition S8.B). To do this, Permittees may either pay into a collective fund or conduct studies relevant to these topics.

The City has chosen to pay into both the Regional Status and Trends Monitoring fund (“option a”, see S8.A.2.a) and the Effectiveness and Source Identification Studies fund (“option a”, see S8.B.2.a). Both programs are implemented by Ecology through the Stormwater Action Monitoring (SAM) collective. More information about SAM studies can be found here: <https://ecology.wa.gov/regulations-permits/reporting-requirements/stormwater-monitoring/stormwater-action-monitoring>

In 2023, Seattle Public Utilities (SPU) submitted an [Effectiveness Study proposal](#) to Ecology under the [Round 4 solicitation process](#) with the goal of advancing the collective understanding of the tire-wear chemical 6PPD-quinone (6PPD-Q). Specifically, the project would examine the potential for street sweeping to reduce the source of 6PPD-Q on the roadway. In late 2023, SPU learned that the project was approved for SAM Effectiveness Study funding. In 2024, SPU’s project manager will work with Ecology’s SAM staff to finalize the scope of work and initiate the study.

In addition to meeting S8 permit requirements, the City continues to invest in research to address emerging contaminants and environmental challenges. In 2023, SPU established an agreement with the University of Washington to fund research to better understand 6PPD-Q. SPU will continue to fund this research in 2024.



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II. STORMWATER MANAGEMENT PROGRAM (SWMP) PLAN



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II.1 Legal Authority – S5.C.1

II.1.1 Permit Requirements

Permit Special Condition S5.C.1 requires the SWMP to demonstrate certain legal authorities for controlling stormwater discharges to and from the City’s MS4. S5.C.1 outlines these areas, but does not require specific products, submittals, reports, or a schedule for completing required activities. Many of these legal authorities are expressed in the requirements of the other SWMP components, some of which have Permit-required products and completion schedules, including the authorities needed for controlling stormwater related to:

- ◆ Industrial and construction activity
- ◆ Illicit discharges, spills, and dumping
- ◆ Inter-jurisdictional agreements
- ◆ Development and redevelopment

II.1.2 Current and Planned Activities for 2024

Legal authority enabling the City to control discharges to and from the MS4 is primarily established by **Seattle Municipal Code (SMC), Stormwater Code (SMC 22.800–22.808)** as revised effective on January 1, 2021, achieving equivalency with the Department of Ecology’s 2019 Stormwater Management Manual for Western Washington (SWMMWW). The Directors of Seattle Public Utilities (SPU) and Seattle Department of Construction and Inspections (SDCI) share responsibility for issuance of notices of violation, stop work orders, and corrective actions for violation of the Stormwater Code. The Stormwater Code is designed to control, through regulation and ordinance, the contribution of pollutants to the MS4. It prohibits illicit discharges, spills, and illegal dumping, and authorizes inspections, surveillance and monitoring to determine compliance and meet Permit requirements.

Information on the Permit requirement to update the City’s Ordinance, Stormwater Code (SMC 22.800) and associated **Seattle Stormwater Manual** (also known as the Directors’ Rules) can be found in Section II.5 of this SWMP Plan. The Stormwater Code, Manual, and other information can be found on SDCI’s website: [http://www.seattle.gov/sdci/codes/codes-we-enforce-\(a-z\)/stormwater-code](http://www.seattle.gov/sdci/codes/codes-we-enforce-(a-z)/stormwater-code).

The **Side Sewer Code (SMC 21.16)** regulates side sewers and, for example, prohibits discharge of certain materials; requires maintenance of detention facilities; provides a right of entry for inspection; requires repair of inoperative or inadequate sewers, drains, or natural watercourses; and regulates the construction, alteration, repair, and connection of side sewers and service drains. The Side Sewer Code was last substantially amended in 2010, signed by the Mayor on December 20, 2010, and effective on January 5, 2011. The Side Sewer Code can be found on SDCI’s website: [https://www.seattle.gov/sdci/codes/codes-we-enforce-\(a-z\)/side-sewer-code](https://www.seattle.gov/sdci/codes/codes-we-enforce-(a-z)/side-sewer-code)



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The City Attorney's Office provides legal advice to the City about implementation of legal authority for the SMC and Directors' Rules. The City will continue to use its Legal Authority to control discharges to and from the MS4 owned and operated by the City.

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II.2 MS4 Mapping and Documentation – S5.C.2

II.2.1 Permit Requirements

Permit Special Condition S5.C.2 requires the City to have an ongoing mapping program that includes maintaining mapping of the MS4, including:

- ◆ Known MS4 outfalls and known MS4 discharge points.
- ◆ Receiving waters, other than groundwater.
- ◆ Stormwater treatment and flow control BMPs/facilities owned or operated by the Permittee, including all connections between these BMPs/facilities and tributary conveyances and all associated emergency overflows.
- ◆ Geographic area served by the City’s MS4 that do not discharge stormwater to surface water.
- ◆ Tributary conveyances to all known outfalls and discharge points (24-inch diameter or larger).
- ◆ Connections between the MS4 owned or operated by the Permittee and other municipalities or other public entities.
- ◆ All connections to the MS4 authorized or allowed by the Permittee after February 16, 2007.¹
- ◆ Existing, known connections greater than or equal to 8 inches in nominal diameter to tributary conveyances.

The 2019 Permit established new mapping requirements including:

- ◆ Beginning to collect data for size and material for all known MS4 outfalls during the normal course of business and update records (begin collecting this information no later than 1/1/2020).
- ◆ Mapping all known connections from the MS4 to a privately-owned stormwater system (no later than 8/1/2023).

II.2.2 Current and Planned Activities for 2024

Seattle continues to implement all of the required activities listed above. The City’s GIS data is available to Ecology, Indian Tribes, municipalities, other permittees, and the public through the SPU GIS webpage: [Seattle GeoData \(arcgis.com\)](https://seattle.gov/GeoData) (MS4 data can be found by selecting the category “Utilities”). SPU’s Development Services Office (DSO) also maintains the Water and Sewer Map, a publicly-accessible mapping interface that contains drainage (stormwater), drinking water, and sewer infrastructure.

¹ Permittees do not need to map the following residential connections: individuals’ driveways, sump pumps, or roof downspouts.



In addition, the Engineering Records Vault (Vault) is an archive of City records documenting infrastructure installed within the public right-of-way. Directions for accessing the Vault, either digitally or in-person, can be found here: <http://www.seattle.gov/utilities/construction-resources/records-vault>.

This web page is a landing spot that contains links for:

- ◆ Tools for customers to create a map of their property to better understand MS4 infrastructure
- ◆ A water and sewer research map web page
- ◆ A link to download City GIS data
- ◆ Instructions on how to order datasets

Updates to the City's MS4 infrastructure mapping can occur when as-built records are submitted and after staff submit update requests to SPU's GIS team as a result of field verification (e.g., special mapping projects or field discoveries).

During 2023, the City continued to collect outfall size and material information during the normal course of business (e.g., during field screening, inspection, maintenance) in accordance with the 2019 MS4 Permit Condition S5.C.2.b.i. In 2024, and in anticipation of 2024 MS4 Permit requirements, SPU will begin undertaking a project to capture this information for the remaining outfalls with incomplete size and material data.

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II.3 MS4 Coordination – S5.C.3

II.3.1 Permit Requirements

Permit Special Condition S5.C.3 requires internal coordination of municipal stormwater activities among City departments as well as external coordination between the City and outside agencies. Minimum performance measures include:

- ◆ Update, if needed, and implement an intra-governmental (internal) coordination agreement(s) or Executive Directive(s) to facilitate compliance with the terms of this Permit.
- ◆ Coordination mechanisms among entities covered under a municipal stormwater NPDES permit to encourage coordinated stormwater-related policies, programs, and projects with adjoining or shared areas, including:
 - ❖ Coordination mechanisms clarifying roles and responsibilities for the control of pollutants between physically interconnected MS4s covered by a municipal stormwater permit. This includes, but is not limited to, physically interconnected MS4s of Secondary Permittees within the City of Seattle’s boundary.
 - ❖ Coordinating stormwater management activities for shared water bodies, or watersheds among Permittees to avoid conflicting plans, policies, and regulations.

II.3.2 Current and Planned Activities for 2024

The Permit requires the City to “implement intra-governmental (internal) coordination agreement(s) or Executive Directive(s) to facilitate compliance with the terms of this permit.” Executive Order # 01-08 (Appendix A) (City of Seattle 2008) was issued on January 29, 2008, by the Mayor of Seattle to meet this Permit requirement. The Executive Order was reviewed as part of this SWMP Plan development and it does not require any updates.

The Executive Order prescribes the following responsibilities and orders all departments to coordinate all stormwater-related policies, programs, and projects:

- ◆ Each department director will be responsible for meeting the Permit requirements that apply to his or her respective department.
- ◆ SPU will serve as the lead department for overseeing City compliance with the Permit.
- ◆ SPU will provide each department with information, technical support, and a forum for inter-departmental coordination.
- ◆ All City departments must provide SPU with all necessary reporting elements and supporting material necessary to comply with the reporting requirements and associated deadlines of the Permit.



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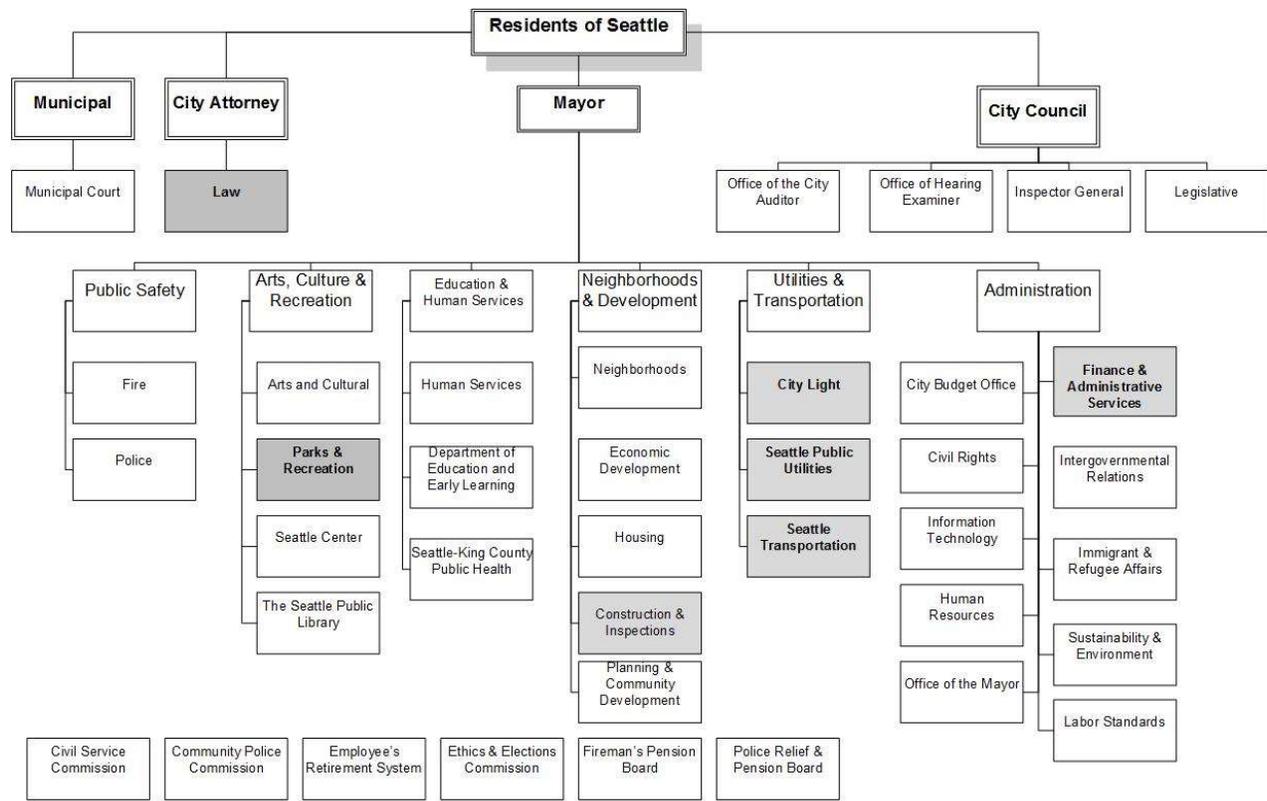
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SPU is the lead City department for implementing Permit coordination requirements in the SWMP. Among the many City departments serving the residents of Seattle, there are six departments (shaded in Figure II.3-1, below) primarily responsible for implementation of programs and projects for stormwater management within the City’s MS4:

- ◆ Seattle Public Utilities (SPU) - lead role coordinating Permit compliance and reporting
- ◆ Seattle Department of Construction and Inspections (SDCI)
- ◆ Seattle Parks and Recreation (Parks or SPR)
- ◆ Seattle Department of Finance and Administrative Services (FAS)
- ◆ Seattle City Light (SCL)
- ◆ Seattle Department of Transportation (SDOT)

Each of the six departments has one or more individuals assigned to foster effective Permit implementation within their department. These representatives comprise the City’s Inter-Departmental NPDES Coordination Team, a workgroup led by the Stormwater Permit Manager position which is housed in SPU’s Drainage and Wastewater Line of Business.



Note: Bold and Shaded indicate City Departments Directly Involved in SWMP

Figure II.3-1 City Organizational Chart

II.3.2.1 Seattle Public Utilities

SPU is the City-designated lead department for managing municipal stormwater, including meeting Phase I Permit requirements, conducting water quality programs, and managing drainage-related capital projects. SPU conducts inspections, maintenance, and repair of stormwater facilities in the right-of-way. SPU also houses the Operations Response Center (ORC), which is tasked with notifying SPU Spill Response in the event of a drainage or wastewater related threat to public safety, infrastructure, or the environment.

II.3.2.1.1 Internal Coordination

SPU leads *inter-departmental* meetings to coordinate the City's stormwater management and Permit reporting efforts. These meetings are typically held monthly and have enabled the different departments to better coordinate stormwater-related policies, programs, and projects.

SPU's Stormwater Permit Manager also facilitates typically quarterly SPU *intra-departmental* meetings with key staff who implement SPU-relevant components of the SWMP, such as stormwater source control and spill response, public involvement and participation, education and outreach, operations and maintenance, mapping, stormwater planning, and structural stormwater controls like GSI installations that treat MS4 runoff.

In 2023, SPU established and began building out a Sharepoint page as a tool to store and share resources with the inter- and intra-departmental NPDES Coordination groups.

When requested, and opportunistically, SPU is prepared to relay Permit requirements and provide guidance to other City departments that may observe spills and other illicit discharges to the MS4, such as the Seattle Police Department and Seattle Fire Department.

The City expects to continue using these many internal capacity-building mechanisms in 2024, in support of Permit compliance.

II.3.2.1.2 External Coordination

SPU represents the City at the Phase I Permit Coordinators' Group and Central Sound NPDES Coordinators' Group, which meet to coordinate and discuss implementation of the Permit and coordination of stormwater management activities for shared water bodies. In addition, the groups discuss stormwater related issues, share permit implementation information and identify solutions and potential future issues. SPU is also an active participant in the Stormwater Work Group (SWG), SWG's 6PPD-q Sub-Group, the Our Green Duwamish coalition, and other regional stormwater management-related groups. In 2024, the City intends to stay actively involved in these groups.

II.3.2.2 Seattle Department of Construction and Inspections

SDCI is the City department responsible for developing, administering, and enforcing development standards on parcels of property. SDCI issues development permits as required under the Stormwater Code and other ordinances and inspects sites prior to and during construction. SPU and SDCI share complaint response and enforcement (i.e., inspection and response) responsibilities. Both SPU and SDCI have authority to issue notices of violation and initiate enforcement for drainage related issues. SDCI



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manages customer complaints and inquiries related to current construction activities. SPU manages customer complaints and inquiries unrelated to development permits. Once SDCI staff have completed the post-construction “final site” inspection process, verified that a maintenance plan for stormwater treatment and flow control BMPs/facilities exists and responsibility has been assigned, and final approval and occupancy is granted (in accordance with Permit condition S5.C.5.b.vi), then typically responsibility for inspecting those BMPs/facilities shifts to SPU’s Source Control and Pollution Prevention Division (per S5.C.10.b, when applicable) and GIS data are transferred to SPU’s GIS team.

II.3.2.3 Seattle Parks and Recreation

Parks is responsible for the development and maintenance of several hundred parks and park facilities. Parks owns or operates many MS4 assets, and therefore plays an integral role in Permit implementation and environmental stewardship. Parks trains its staff in comprehensive BMPs for various maintenance activities, works in partnership with SPU on creek improvement projects, and is involved in programs designed to reduce pesticide use, remove invasive plants, and replant native species on property managed by Parks. Parks is responsible for implementation of the Stormwater Code at facilities it owns or operates and for communication with SPU staff if after-hours spill cleanup support is needed or when beach closure signage is necessary.

II.3.2.4 Seattle Department of Finance and Administrative Services (FAS)

FAS manages most of the City’s non-utility real estate portfolio, oversees the design, construction, and occupancy of City facilities, maintains City buildings, and purchases, maintains and repairs the City’s fleet of vehicles. FAS trains its staff in BMPs related to its business activities and works to reduce impacts on stormwater. FAS is responsible for implementation of the Stormwater Code at facilities it owns or manages, and for working with other City departments on stormwater pollution prevention at shared-use facilities. Examples of FAS facilities that may discharge stormwater to the MS4 or to surface waterbodies include Fire Stations, Police Precincts, health and family support services, heavy equipment yards, and maintenance shops.

II.3.2.5 Seattle City Light (SCL)

Created by the citizens of Seattle in 1902, SCL provides customers with electricity and related services. The department maintains an on-call spill response team with the goal to be available 24/7 for incidents at their facilities. SCL trains its staff in BMPs related to its business activities and works to reduce adverse impacts on stormwater. SCL is responsible for implementation of the Stormwater Code at facilities it owns or operates, which includes facilities within the City limits and at other locations in Washington State.

II.3.2.6 Seattle Department of Transportation (SDOT)

SDOT has responsibilities for the City’s streets, bridges, sidewalks, bike paths, street trees, and traffic operations. SDOT carries out a number of programs that have a nexus with the Permit, and the Department is responsible for implementing the Stormwater Code at facilities and projects under its management. SDOT performs roadway maintenance activities such as street sweeping and snow and ice control. The activities conducted sometimes require SDOT to obtain coverage under another NPDES permit, such as the Construction Stormwater General Permit (CSGP) or a Bridge Washing Permit.

Below are a few examples highlighting how SDOT staff implement components of the SWMP in their core activities:

- The Capital Projects Division of SDOT oversees all aspects of Transportation Capital Improvement Programs (CIPs) and coordinates development and implementation of large-scale City projects. SPU works with SDOT during implementation of projects to design stormwater facilities in the right-of-way. At project completion, SPU typically takes over operation and maintenance of municipal stormwater facilities located in the right-of-way.
- SDOT's Street Use Division issues permits for private and public activities in the City's right-of-way (under SMC Title 15). The types of permits depend on the complexity of the project, but, overall, required stormwater BMPs associated with the planned work are often listed as permit conditions.
- During construction, SDOT's Urban Forestry group serves as a resource for Street Use inspectors on tree, vegetation, and soil protection measures.
- SDOT maintains a Spill Response team to respond to spills and other discharges in the right-of-way. If MS4 drainage assets are, or could be, impacted, SDOT's Spill Response team typically contacts ORC, which dispatches SPU Spill Response.

II.3.2.7 Coordination Between Secondary Permittees with Physically Interconnected MS4s

The Port of Seattle, University of Washington, and Seattle Public Schools are currently the entities with coverage as Secondary Permittees under the 2019 NPDES Phase I Municipal Stormwater Permit. All three entities also submitted a Notice of Intent for coverage as Secondary Permittees under the forthcoming 2024 Phase I Permit. The City communicates with these entities about the control of pollutants, coordination of stormwater management activities for shared water bodies, and provides technical assistance when requested. In 2023, SPU re-established a separate annual coordination meeting with each Secondary Permittee to discuss these topics. SPU expects to convene these meetings again in 2024.

The City communicates with other Phase I and Phase II municipalities where there are interconnected MS4s, shared waterbodies, or both, as needed, to address issues or coordinate activities. The City of Shoreline to the north, the Cities of Tukwila and Burien to the south, unincorporated King County, and the Washington State Department of Transportation (WSDOT) are neighboring jurisdictions and/or MS4 Permittees with some interconnectedness to Seattle's MS4 infrastructure.



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II.4 Public Involvement and Participation – S5.C.4

II.4.1 Permit Requirements

Permit Special Condition S5.C.4 requires the City to provide ongoing opportunities for public involvement in the SWMP and input on implementation priorities. The minimum performance measures include:

- ◆ Creating opportunities for the public, including overburdened communities, to participate in the decision-making process involving the development, implementation, and update of the SWMP.
- ◆ Making this SWMP Plan and the required Annual Report available to the public on the City’s website no later than May 31 each year. All other Permit-required submittals shall be available to the public upon request.

II.4.2 Current and Planned Activities for 2024

The public has several means of participating in the SWMP development process and associated activities, as described below. Overburdened communities are included in our efforts to engage the public in the SWMP. In addition to the opportunities listed below, SPU plans to create an abbreviated version of the SWMP Plan during 2024, in multiple languages, to support community education and participation.¹

II.4.2.1 City Budget Process

The City budget process provides opportunities for public input on how monies are allocated for implementation of NPDES-related stormwater management. Adoption of the City Budget—one of the most important functions of the City Council—requires public hearings to be scheduled on two or more days. All meetings are held in Council Chambers unless otherwise noted, and the public is encouraged to attend Council meetings, hear the debate, and offer public comment on issues. The City Council meeting schedule and methods for providing comments are listed on the City Council’s website:

<http://www.seattle.gov/council/default.htm>.

¹ The planned abbreviated SWMP is expected to be more community-focused and designed to stay relevant for the 2024 Permit term. The abbreviated SWMP is not intended to replace the comprehensive SWMP Plan required to be updated annually and submitted to Ecology by March 31.



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II.4.2.2 Public Participation During SWMP Development and Implementation and Update

SPU provides information on the Stormwater Management Program Plan on the public website (<https://www.seattle.gov/utilities/about/plans/drainage-and-sewer/stormwater-management-plan>) and provides an email, swmp@seattle.gov, that the public can use to ask questions and get more information on the SWMP.

SPU facilitates the Strategic Business Plan Customer Review Panel which provides ongoing opportunities for members of the public to participate in planning and development of policies and programs and to advise SPU. Information about the Customer Review Panel can be found on the following SPU webpage: <https://www.seattle.gov/utilities/about/plans/strategic-business-plan/customer-review-panel>.

SPU is also engaging the public on stormwater related topics as part of Shape Our Water. Shape Our Water is a community-centered planning effort that will guide the next 50 years of the City's drainage and wastewater system investments. Shape Our Water has ongoing opportunities for residents to participate which, in the past, included the Fireside Series and Community Stories. Information about ways for residents to get involved can be found on the Shape Our Water website at <https://www.shapeourwater.org/get-involved>.



II.5 Controlling Runoff from New Development, Redevelopment and Construction Sites – S5.C.5

II.5.1 Permit Requirements

Permit Special Condition S5.C.5 requires the City to develop, implement, and enforce a program to prevent and control the impacts of stormwater runoff from new development, redevelopment, and construction site activities. The minimum performance measures include the following main areas, with more detailed requirements included in the Permit text:

- ◆ Adopt and make effective a local program with ordinances or other enforceable documents (codes, standards, or both) to meet or exceed requirements in Appendix 1 of the Permit (Minimum Technical Requirements for New Development and Redevelopment), or equivalent as determined by Ecology. The City will continue to implement existing, approved programs until the revised program applies.
 - ❖ The Permit states that the City must adopt and make effective a local program that meets the requirements in S5.C.5.b.i through ii no later than July 1, 2021.
- ◆ Include legal authority to inspect private stormwater facilities and enforce maintenance standards for all new development and redevelopment approved by the local program.
- ◆ Include a process of permits, site plan review, inspections, enforcement capability and recordkeeping to meet permit conditions during and post construction for public and private new development and redevelopment.
- ◆ Make Ecology’s Notice of Intent (NOI) documents for construction and industrial activities available, as applicable, to project proponents (Ecology, 2020a and 2020b).
- ◆ Ensure training of staff whose primary job duties are implementing the program to control runoff from new development, redevelopment, and construction sites, and document the training.



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II.5.2 Current and Planned Activities for 2024

The following sections outline ongoing and planned activities to meet the key Permit requirements.

II.5.2.1 Stormwater Code

Appendix 10 of the 2019 Permit, modified in 2021, establishes that the City of Seattle is currently meeting permit requirements S5.C.5.a.i and S5.C.5.a.ii and has a program that is equivalent with Ecology's 2019 Stormwater Management Manual for Western Washington. The equivalent regulations and rules are:

- ◆ Seattle Municipal Code Chapters 22.800-22.808 titled, "Stormwater Code" as adopted in May 2021 (Ordinance 126336), effective July 1, 2021.
- ◆ Joint SPU/SDCI Directors' Rules titled, "Stormwater Manual" (Directors' Rule SPU DWW-200/SDCI 10-2021) effective July 1, 2021. The Stormwater Manual contains five volumes.
 - ❖ Volume 1: Project Minimum Requirements
 - ❖ Volume 2: Construction Stormwater Control
 - ❖ Volume 3: Project Stormwater Control
 - ❖ Volume 4: Source Control
 - ❖ Volume 5: Enforcement
- ◆ The City's Side Sewer Code (Ch. 21.16 SMC), Grading Code (Ch. 22.170 SMC), Land Use Code (Ch. 23 SMC), Street and Sidewalk Use (Ch. 15 SMC) and Regulations for Environmentally Critical Areas (Ch. 25.09 SMC) also provide protections and standards relevant to municipal stormwater.

II.5.2.2 Authority to Inspect Private Facilities

Legal authority for inspection of private facilities for new development and redevelopment is established by SMC 22.807.090.B. Entry onto properties is subject to the requirements and limitations of local, state, and federal law.

II.5.2.3 Permitting Program

SDCI is the City department primarily responsible for issuance of permits for new development and redevelopment for projects located on private property. SDCI's routine permitting procedures are outlined in the next section. While the following steps are for private development, publicly funded Capital Improvement Projects (CIPs) developed and managed by City staff must also meet the Stormwater Code and applicable Minimum Requirements of the Stormwater Manual.

II.5.2.3.1 SDCI Permit Application Process

- Step 1. The permitting process begins with an optional but recommended step of applicant coaching. In this step, either a SDCI land use planner, or permit leader, meets with the potential applicant to identify unique or issues of the proposed project. Coaching helps to determine what is allowed on a piece of property, what development standards apply, what types of permits the project will require, and what the permit process will entail. If the project is a multifamily or commercial building and there are special circumstances or issues unresolved during coaching, the applicant can request a pre-submittal conference for clarification on what standards will apply to the proposed project. SDCI drainage review provides specific

coaching for stormwater questions when needed at the pre-submittal conference or directly with the applicant via a staffed virtual counter or email.

- Step 2. The next step for an applicant is to research and prepare a preliminary site plan. The site plan depicts where the structure(s) and BMPs will be located, the amount of new and replaced impervious surfaces that will result, the general topography of the site, and the existing level of street and alley improvements in the rights-of-way abutting the site.

For those projects that involve ground disturbance, SDCI requires a Pre-Application Site Visit (PASV). This is performed by a SDCI Site Inspector prior to permit application intake. The PASV confirms existing site conditions, including steep slopes, sensitive areas, and erosion control issues that can be anticipated with the project due to site conditions. A PASV report is generated for the applicant and plan reviewer's use. In addition to the PASV, a more detailed Preliminary Assessment Report (PAR) is provided to applicants for new construction permits. The PAR includes project specific requirements for Drainage, Street Improvements, Land Use and Utilities determined by various City departments.

- Step 3. Prior to permit issuance on projects that have ground disturbance and a high likelihood of erosion control issues due to steep slopes, the applicant nominates a geotechnical special inspector. The geotechnical special inspector is charged with determining that adequate temporary and permanent erosion control measures are in place throughout the construction of the project.
- Step 4. The applicant applies for a permit with SDCI, including submitting plans, through the Seattle Services Portal. These are reviewed for compliance with applicable adopted codes, and the building permit is issued when the plans comply with these codes and the permit fees are paid.
- Step 5. After the building permit is issued for projects with ground disturbance, but prior to any ground disturbance occurring, the applicant is required to schedule a first ground disturbance (FGD) inspection with a SDCI Site Inspector. The FGD inspection requirement is codified in the Seattle Building Code (SMC 22.100–22.204). The purpose of the FGD inspection is for the applicant and inspector to identify potential erosion control issues that may be encountered during construction and map out BMPs that will prevent sediment from leaving the site.
- Step 6. Once the building permit has been issued, the applicant, or more typically the contractor, applies for the Side Sewer Permit. This permit contains the drainage plan showing required stormwater BMPs that was approved during the building permit review and is the mechanism to allow future inspections of these facilities by City staff.
- Step 7. Prior to closing of a building permit with ground disturbance, a site final Inspection is required to be completed. The site final inspection identifies that the site has been fully stabilized and that all disturbed areas that are not hard surface have been soil amended. The site final also identifies that the Side Sewer Permit has been completed. All required stormwater BMPs and sanitary and drainage connections must be installed and inspected per the approved plans. An as-built plan must be provided and approved that shows the installed BMPs/side sewer connections for City records.



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II.5.2.3.2 SDOT Street Use Permitting Process

Any private development that triggers permanent improvements in the City’s public right-of-way requires a Street Improvement Permit issued by the Street Use Division of SDOT, in addition to the permits required by SDCI. Examples of these kinds of improvements are street drainage facilities, curbs and sidewalks, trees, and street or alley paving.

The SDOT Street Use section issues street use permits for private and public activities in the City’s public right-of-way under SMC Title 15. SDOT tracks permits, inspections, and enforcement actions of permitted projects. Each permit type requires a specific number of inspections during the construction process. Most permit types require an initial and final inspection to determine compliance with the permit. The construction and source control BMPs listed in the Stormwater Code (SMC 22.800–22.808) apply, and failure to implement these BMPs constitutes a violation of the street use permit.

SDOT’s Street Use & Urban Forestry Division inspects and approves permanent erosion controls, including tree and plant installations within the right-of-way, prior to the SDCI issuance of the certificate of occupancy.

II.5.2.3.3 Inspections of Permitted Parcel-Based Projects

After all required Pre-Application Site Visits (PASVs) are completed and a building permit is issued, a SDCI inspector checks to make sure that work is done according to code. Customers with permits are responsible for arranging inspections. In 2020, 2021, and 2022, SDCI inspectors were able to continue their on-site inspections during the ongoing COVID-19 pandemic with additional safety measures in place. In 2023, and going into 2024, SDCI inspectors will continue to implement the increased safety measures to conduct on-site inspections.

There are eight types of site inspections that can occur after a permit is issued.

1. First ground disturbance (FGD) inspection – SDCI site Inspectors conduct a site visit prior to ground disturbance to determine erosion potential and review and tailor construction stormwater erosion and sediment control (CSESC) measures to the site. The FGD inspection requirement is codified in the Seattle Building Code (SMC 22.100–22.204). The purpose of the FGD inspection is for the applicant and inspector to identify potential erosion control issues that may be encountered during construction and map out BMPs that are acceptable to prevent sediment from leaving the site.
2. Pre-construction inspection – This inspection typically includes the Contractor, building inspector, Site Inspector, and if applicable, geo-technical special inspector. Inspection of the installed CSESC measures and BMPs identified as necessary in the FGD inspection occurs at this time.
3. Side sewer inspection – During this inspection, SDCI and the contractor verify that the proper connection is made between the building’s side sewer and the City’s mainlines. Permanent stormwater treatment, flow control facilities, and onsite stormwater management BMPs are inspected during this inspection.
4. Special inspection – This type of inspection is both applied to structural work and for geotechnical for special grading, excavation and filling involved with ground disturbance.
5. Construction Stormwater Control Inspection – This is a periodic inspection to identify that site construction stormwater BMPs are being maintained and the site is containing sediment during construction.

6. Response to Complaints – Inspections are performed based on complaints filed with SDCI if it is suspected or shown that a construction site is not meeting code. For example, if sediment is observed in the street coming from a site that is reported to SDCI.
7. Site Final inspection –This inspection identifies that the site has been fully stabilized and that all disturbed areas that are not hard surface have been soil amended. The Side Sewer Permit must be completed with the associated stormwater BMPs and connections to the public drainage/sewer system prior to completing the Site Final.
8. Final inspection – After successful completion of all inspections, the permittee is granted approval to occupy or Certificate of Occupancy.

II.5.2.3.4 Enforcement

SDCI’s Code Compliance staff enforces the Stormwater Code and Directors’ Rule that governs construction, land use, and environmental protection. Enforcement can take the form of notices, fines, and legal action. SDOT Street Use Inspectors use written warnings, citations, and stop work orders, or revoke the permit if compliance is not achieved. This process is documented in SMC Title 15.

II.5.2.4 Ecology Notice of Intent

SDCI will continue to direct applicants to the Washington State Department of Ecology for electronic “Notice of Intent for Construction Activity” (Ecology 2020a), “Notice of Intent for Industrial Activity” (Ecology 2020b), or both when necessary. Links to both the Construction Stormwater General Permit and Industrial Stormwater General Permit are on SDCI’s webpage, found at here:

[https://www.seattle.gov/sdci/codes/codes-we-enforce-\(a-z\)/stormwater-code](https://www.seattle.gov/sdci/codes/codes-we-enforce-(a-z)/stormwater-code)

II.5.2.5 Training

SDCI and SDOT have temporary erosion and sediment control (TESC) training that is provided to City staff involved in ground disturbing activities to reflect the current Stormwater Code. This training, called stormwater construction controls (SWCC), is offered to City staff as needed. SDCI conducts on the job and classroom training for all staff whose primary job duties relate to implementing the City’s program to Control Stormwater Runoff from New Development, Redevelopment, and Construction Sites, which helps confirm that those individuals are properly trained. Training topics include permitting, plan review, construction site inspections, and enforcement procedures.

SDOT conducts training for all Street Use Inspectors on the required BMPs, inspection procedures and enforcement for Street Use Permits. The City continues to provide training to City staff on the Stormwater Code and its associated Directors’ Rule on an as-needed basis.



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II.6 Stormwater Planning – S5.C.6

II.6.1 Permit Requirements

Permit Special Condition S5.C.6 requires the City to implement a Stormwater Planning program to inform and assist in the development of policies and strategies as water quality management tools to protect receiving waters. The specific requirements are:

- ◆ Convene an inter-disciplinary team to inform and assist in the development, progress, and influence of this program.
- ◆ Coordination with long-range plan updates. Describe how stormwater management needs and protection/improvement of receiving water health are (or are not) informing the planning update processes and influencing policies and implementation strategies in the City.
- ◆ Continue to require Low Impact Development (LID) principles and LID best management practices (BMPs) when updating, revising and developing new local development-related codes, rules, standards or other enforceable documents, as needed.
 - Annually assess and document any newly identified administrative or regulatory barriers to implementation of LID principles or LID BMPs.

II.6.2 Current and Planned Activities for 2024

II.6.2.1 Inter-disciplinary Team

In 2020, the City formed an inter-disciplinary stormwater planning team with representatives from five City departments: SPU, SDOT, Parks, SDCI, and the Office of Planning and Community Development (OPCD). The team will continue to convene if needed to inform City stormwater policies and strategies to support the protection of receiving waters. Department representatives review and prepare responses to the Stormwater Planning Annual Report questions that describe how anticipated stormwater impacts on water quality were addressed, if at all, during the current permit term in updates to the Comprehensive Plan (or equivalent) and in other locally initiated or state-mandated long-range land use plans that are used to accommodate growth or transportation.

In 2023, the representatives provided input to the team responsible for preparing the City's next Comprehensive Plan update. Their input was focused on incorporating stormwater management policies and low impact development principles (including green stormwater infrastructure, tree canopy, and others). In March 2024, the [City released the draft "One Seattle" Comprehensive Plan](#) for public comment, and a number of the Plan's policies are related to improving stormwater quality and reducing runoff.



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As noted in Section II.4.2.2, SPU is developing “Shape Our Water”, a community-centered planning effort that will guide the next 50 years of the City’s drainage and wastewater system investments. During 2024, the Shape Our Water team is undertaking internal and external workshops to solicit SPU staff and community input based on six themes that are all connected in some way to stormwater management and water quality (“Too Much, Too Fast”, “Pollution in Our Water”, “Creek and Shoreline Health”, “System Stewardship”, “Shocks and Stresses”, and “System Development”).

II.6.2.2 Low-Impact Development Code-Related Requirements

New development codes and regulatory requirements that are initiated during the current Permit term are reviewed during their development so that new barriers to low impact development are not created or that the barriers are addressed to facilitate making low impact development the preferred and commonly used approach to site development within Seattle.

In 2021, the City updated its Stormwater Code as described in section II.5.2.1.1. The Code update process included review of development-related codes, rules, standards, and other enforceable documents. The City continues to assess possible administrative or regulatory barriers to implementation of LID principles or LID BMPs as needed. These aspects will again be considered during the next Stormwater Code and Manual updates.

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II.7 Structural Stormwater Controls – S5.C.7

II.7.1 Permit Requirements

Permit Special Condition S5.C.7 requires the City to:

- ◆ Implement a Structural Stormwater Control Program (SSCP) that is designed to address stormwater impacts that are not adequately controlled by other required actions of the SWMP.
- ◆ Describe the SSCP in this SWMP document, including goals and the planning process: scale, issues and regulations, steps, budgets, public involvement, and the prioritization process, procedures and criteria used to select the projects.
- ◆ With each annual report, provide an updated list of planned SSCP projects scheduled to be implemented during the term of the Permit; including the information and formatting specified in Appendix 12 of the Permit.
- ◆ Achieve 300 SSCP points (calculated per Appendix 12) no later than December 31, 2022 (Permit Condition S5.C.7.d.)

II.7.2 Current and Planned Activities for 2024

The following sections outline how the goals of the City's SSCP, which are to implement projects that protect, and/or improve the beneficial uses of certain receiving water bodies, reflect asset management principles and are not otherwise required actions in the SWMP, are being implemented.

II.7.2.1 Planning Process and Considerations

A comprehensive planning process was initiated and carried out to support the SSCP and achieve the required number of Program Points by the end of 2022. The geographic scale of the program is the area served by the City's MS4 and the MS4-related receiving water bodies. This area is evaluated based on the watersheds of the four major receiving water bodies; Puget Sound, Lake Washington, Duwamish River, and the Ship Canal/Lake Union (Figure II.7-). Regulations and issues considered during the SSCP development process included: 303 (d) listed and other impaired water bodies, TMDLs, Stormwater Code requirements, Superfund and MTCA sites, contaminants of concerns, as well as opportunity, feasibility, equity, and available funding.



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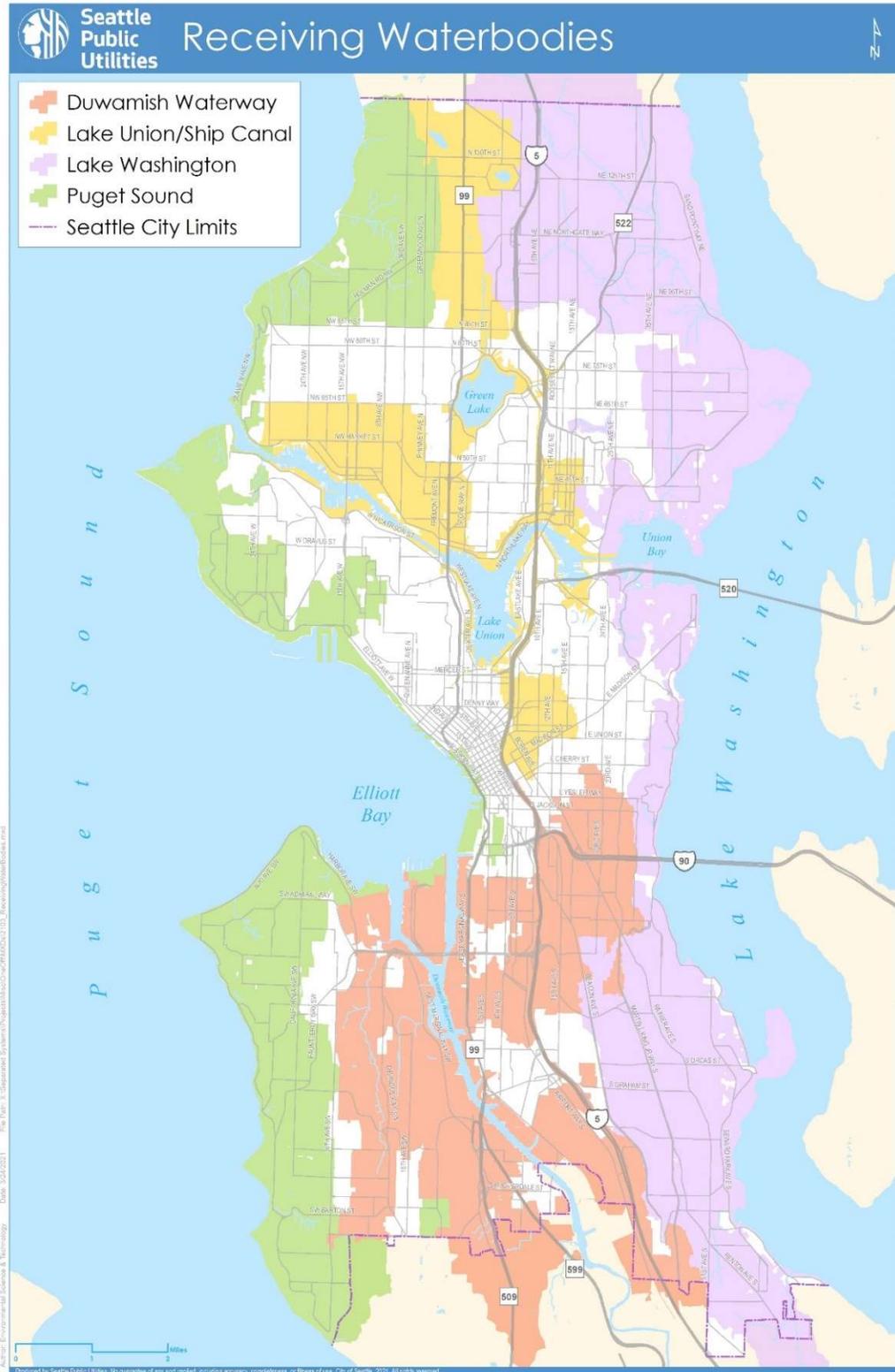


Figure II.7-1 Major Receiving Water Bodies

The SSCP program develops and prioritizes projects by using asset management principles. The type of treatment facilities evaluated for a project is based on project goals, site conditions, and consideration of AKART and MEP principles as they apply in a fully developed urban area. Projects are prioritized by SPU staff based on an assessment of receiving water body conditions, anticipated benefits of the project, regulatory compliance needs, opportunity, and application of asset management principles that have been adopted by SPU under the guidance of the Asset Management Committee (AMC). Projects must pass through several AMC evaluation screens and funding allocation phases before they are formally approved by SPU management for implementation. Asset management is the process by which projects are evaluated for their whole-life cycle cost benefit including social, economic, and environmental factors (the triple bottom line). This rigorous process means that the City's SSCP needs are being addressed with the most effective use of ratepayer dollars by the time a project breaks ground. Additionally, project implementation is dependent upon City Council budget approval.

The public involvement process related to SSCP development includes (as appropriate): Seattle City Council budget process, participating in capital projects community engagement, participating in the Shape Our Water plan, State Environmental Policy Act (SEPA) review, and Joint Aquatic Resources Permit Application (JARPA) review.

II.7.2.2 Structural Stormwater Control Project List

The Structural Stormwater Control projects being implemented by the City are summarized in Table II.7-1 below. By following the SSC point calculation methods listed in Appendix 12 of the 2019 Permit, the City was able to achieve the minimum SSC point requirement (in S5.C.7.d) by December 31, 2022, through street sweeping (project type 11). In addition, the City conducts other Structural Stormwater Control projects, many at a much smaller scale, which may include other flow control facilities, runoff treatment facilities, property acquisition, maintenance with capital construction costs greater than or equal to \$25,000, line cleaning, restoration of riparian buffer, floodplain reconnection projects, and permanent removal of impervious surface.



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Table II.7-1 Structural Stormwater Control Project List

Project Name	Description	Cost Estimate	Status*	Receiving Water Body
Natural Drainage System Partnering Program (NDS)	Program will construct bioretention in basins that drain to Pipers, Thornton, and Longfellow Creeks along approximately four miles of right-of-way and manage 41.3 acres of effective impervious area (EIA).	\$80.2 M	Various	Longfellow Creek, Pipers Creek, Thornton Creek
Longfellow NDS	Project will construct bioretention in the right of way in the Longfellow Creek basin, in addition to pedestrian mobility and safety improvements in partnership with Seattle Department of Transportation.	\$16.0 M	Construction	Longfellow Creek
Holden NDS	Project will construct bioretention in the right of way along 1-3 blocks to manage 1.6 acres of effective impervious area.	\$2.9M	Planning	Longfellow Creek
Broadview/12th Ave NW NDS	Project will construct bioretention in the right of way along 3 blocks to manage 4 acres of effective impervious area.	\$4.0M	Design	Pipers Creek
Pipers Creek NDS	Project will construct bioretention in the right of way in the Pipers Creek basin to manage 5 acres of effective impervious area.	\$15.0M	Planning	Pipers Creek
South Thornton NDS	Project will construct bioretention in the right of way in the Thornton Creek basin to manage 8.5 acres of effective impervious area.	\$20.7M	Construction	Thornton Creek
North Thornton NDS	Project will construct bioretention in the right of way in the Thornton Creek basin to manage 8.5 acres of effective impervious area.	\$19.8M	Planning	Thornton Creek
30th Ave NE Sidewalk and NDS	Project constructed bioretention in the right of way in the Thornton Creek basin to manage 1.9 acres of effective impervious area.	\$1.3 M	Completed/Maintenance	Thornton Creek
12th Ave NE Sidewalk and NDS	Project constructed bioretention in the right of way in the Thornton Creek basin to manage 1.0 acres of effective impervious area.	\$0.5 M	Completed/Maintenance	Thornton Creek

Project Name	Description	Cost Estimate	Status*	Receiving Water Body
Green Infrastructure in Urban Villages Program (UVP)	Capital and partnership program focused on upgrading drainage and wastewater infrastructure in high growth urban neighborhoods, using GSI. Emphasis on development partnerships and multiple community benefits. Includes projects in creek basins.	\$25M	Planning	Various (citywide program for urban villages and urban centers)
UVP: Lake City Floodplain Park	Joint acquisition and development partnership with Seattle Parks. Floodplain reconnection, hyporheic water quality treatment, and public open space on the north branch of Thornton Creek.	\$9.65M (includes \$7M from partners)	Design	Thornton Creek
UVP: 17th Ave NW Stormwater Improvements	Project will reduce street flooding and sewer backup risks. Installation of green and gray infrastructure improvements to address capacity and decrease flow volume.	\$14M	Design	Puget Sound
UVP: Chief Sealth Trail GSI	Project will construct a regional bioretention facility to manage runoff from an uphill neighborhood catchment. Water quality treatment with secondary peak flow benefits to reduce flooding risks.	\$3.8M	Design	Lake Washington
UVP: Roxhill Wetland Flow Reroute	Partnership with community groups to restore a historic wetland at headwaters of Longfellow Creek. SPU's portion of the project is rerouting MS4 flows into the wetland and provide water quality treatment to the MS4 flow prior to discharging to wetland.	\$6M	Planning	Longfellow Creek
Longfellow Starts Here	Project will construct Green Stormwater Infrastructure (GSI) in the Longfellow basin as part of the larger goal to reduce CSOs to Longfellow Creek and provide treatment to the stormwater discharges to Longfellow Creek.	TBD	Planning	Longfellow Creek



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Project Name	Description	Cost Estimate	Status*	Receiving Water Body
Longfellow Creek Floodplain Reconnection	Project is evaluating 5 floodplain reconnection sites between SW Genesee and Sylvan Way SW. Project anticipates improved habitat, flow control and water quality benefits.	\$10M	Planning	Longfellow Creek
South Park Water Quality Project	Stormwater quality treatment of an industrial/commercial/high density residential basin.	\$53 M	Planning	Duwamish Waterway
Street Sweeping for Water Quality	High efficiency sweeping of arterial roadways in MS4. In 2023, here were 46 separate routes for a total of 14,646 curb miles in the MS4 at an average of 37 times/year.	\$1.4 M/yr	Ongoing (Completed/Maintenance)	Lake Washington, Lake Union, Ship Canal/ Salmon Bay, Puget Sound, Duwamish Waterway, Longfellow Creek, Piper’s Creek, Thornton Creek

* Project Status is reported as either Planning (<60% Design), Design (>60% Design), Construction, or Completed/Maintenance

II.7.2.2.1 SSC Project Summaries

Natural Drainage System (NDS) Partnering Program

The NDS Partnering Program will build bioretention within the rights-of-way of the Thornton, Longfellow, and Pipers Creek Watersheds to manage flow and provide water quality treatment for urban runoff. The two core goals of the Program are:

- ◆ Construct bioretention systems within about four miles of the city rights-of-way to treat 41.3 acres of effective impervious area by 2025. These facilities are anticipated to reduce 6,478 kg of total suspended solids (TSS) and associated pollutants from entering Seattle’s three major creek watersheds (Longfellow, Thornton, and Pipers) each year.
- ◆ Deliver co-benefits to neighborhoods such as street trees, traffic calming infrastructure, localized flooding reduction, and sidewalks or walkways. By partnering with sister City departments, governmental agencies outside of the City family, and other DWW programs, the Program will achieve greater synergy and efficiencies than if the departments and agencies worked separately.

NDS projects must demonstrate basic feasibility per the site suitability and design criteria provided in the City of Seattle Stormwater Manual, the GSI Design Manual (Volume 3), and Streets Illustrated (SDOT’s right-of-way improvement manual). They must also demonstrate that they are cost effective and address a SPU drainage and wastewater priority area including but not limited to a water quality, flooding, or capacity issue. Priority is also given to projects working in underserved areas of Seattle and where there are opportunities to partner with other departments beyond SPU, such as SDOT or Parks, or community to help meet broader City and community goals. Projects in the planning, design, or construction phases are detailed below.

Individual NDS Project Summaries:

Longfellow Natural Drainage System

The Longfellow NDS project includes three locations to manage a total of six acres of effective impervious area (EIA), which were selected based on a variety of factors that included community input, recurring drainage and flooding issues, technical feasibility, and more:

- ◆ 24th Ave SW (between SW Thistle and SW Barton St)
- ◆ Sylvan Triangle (Sylvan Way SW between SW Orchard St and Delridge Way SW)
- ◆ SW Kenyon St (the Longfellow Creek pedestrian bridge at 24th Ave SW)

Construction began in April 2022 and is expected to be complete by the end of 2024. More information can be found on the project website at <https://www.seattle.gov/utilities/neighborhood-projects/longfellow-creek-natural-drainage-system>.

Holden Natural Drainage System

The Holden NDS project is in the planning phase to determine feasibility of installing NDS on SW Holden Street between 16th and 17th Ave SW and possibly on the east side of 17th Ave SW, just south of the intersection with SW Holden St. The current roadway width on SW Holden St. is 36 feet wide, so the project is proposing to add bioretention to either side of the roadway to narrow it to the standard 25-foot road width and manage a total of 1.6 acres of EIA at one site. This would provide the traffic calming that the community is requesting and make the SDOT temporary improvements permanent. This project anticipates reaching the Notice to Proceed milestone in Q4 2024. More information can be found on the project website at <https://www.seattle.gov/utilities/neighborhood-projects/holden-natural-drainage-system>.

Broadview/12th Ave NW Natural Drainage System

The 12th Ave NW Basin Drainage Improvements Project will improve the drainage system in parts of west Broadview with severe flooding issues. Natural drainage systems will be located along three blocks between 1st and 3rd avenues NW on NW 127th and NW 130th streets to manage a total of four acres of EIA. This project anticipates reaching the Notice to Proceed milestone in Q3 2024. More information can be found on the project website at <https://www.seattle.gov/utilities/neighborhood-projects/12th-ave-nw-basin>.

Pipers Creek Natural Drainage System

The Pipers Creek NDS project will identify, design, and implement up to six blocks of natural drainage systems to treat an equivalent of five acres of polluting surfaces in the Broadview and Blue Ridge neighborhoods. The project is currently in the planning stages and more information can be found on the project website at <https://www.seattle.gov/utilities/neighborhood-projects/pipers-creek-natural-drainage>.



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South Thornton Natural Drainage System

SPU will construct NDS at four sites in the south Thornton Creek basin to manage a total of 13.3 acres of EIA:

- ◆ 41st PI NE
- ◆ 23rd Ave NE
- ◆ N 117th St/N 120th St
- ◆ Wedgwood

The project began construction in October 2023 at the 23rd Ave NE and Wedgwood sites, then in January 2024 at the N 117th/N 120th St site. Construction at the 41st PI NE site is tentatively scheduled to begin in Spring 2024. More information can be found on the project website at <https://www.seattle.gov/utilities/neighborhood-projects/thornton-creek-natural-drainage-system>.

North Thornton Natural Drainage System

The North Thornton NDS project is focused on reducing pollution in the north branch of Thornton Creek. The project is currently in the early design phase. SPU has identified 22 blocks where a NDS might be built. SPU solicited community input on those locations through a community feedback survey completed in May-June 2022. This project anticipates reaching the Notice to Proceed timeline in Q2 2026 and will be designed to manage 8.5 acres of EIA. More information can be found on the project website at <https://www.seattle.gov/utilities/neighborhood-projects/north-thornton-natural-drainage-systems>.

Green Infrastructure in Urban Villages Program (UVP)

The Green Infrastructure in Urban Villages Program is a voluntary retrofit program. The program has four central goals:

- ◆ Upgrade drainage and wastewater infrastructure in fast growing areas through a mix of partnerships and capital projects.
- ◆ Provide community co-benefits, emphasizing environmental justice and service equity.
- ◆ Test new GSI planning tools, delivery models, and focus area planning.
- ◆ Grow partnerships with public agencies, NGOs, and developers.

To date, the program has six capital projects in Options Analysis or Design, and several more in early project planning. Two of these capital projects are providing water quality treatment in creek watersheds – see below for more detail. The program is also advancing partnerships with “beyond code” incentives for developers to exceed their Stormwater Code requirements, both in and outside of areas governed by the MS4 permit. Pilot projects for this approach are happening in the Duwamish River watershed and other non-creek basins.

UVP projects and partnerships must demonstrate basic feasibility per the site suitability and design criteria provided in the City of Seattle Stormwater Manual, the GSI Design Manual (Volume 3), and Streets Illustrated (SDOT’s right-of-way improvement manual). They must also demonstrate that they are cost effective and address a SPU drainage and wastewater priority area including but not limited to a water quality, flooding, or capacity issue. For partnership projects to be viable, they need a willing partner who is able to meet contractual requirements for SPU incentive funding. For every project in

development, the UVP program team has evaluated many others that did not meet these fundamental requirements.

Individual UVP Project Summaries:

GSI UVP: 17th Ave NW Stormwater Improvements

Located in the Crown Hill neighborhood, this project will focus on an area between the Soundview Playfield and NW 85th St, with most of the work occurring along 17th Ave NW between NW 85th St and NW 90th St. The project is expected to use a mix of underground infrastructure improvements and aboveground green stormwater infrastructure features to provide additional capacity in the stormwater system. These modification should help to address street flooding or sewer backups that may occur within this area. The project is currently in the design phase. More information can be found on the project website at <https://www.seattle.gov/utilities/neighborhood-projects/17th-ave-nw-stormwater-improvements>.

GSI UVP: Chief Sealth Trail GSI

SPU is partnering with the Seattle Department of Transportation and their Safe Route to School program to construct new green stormwater infrastructure at the intersection of S Kenyon St and the Chief Sealth Trail to manage stormwater runoff in the Othello neighborhood. The project will utilize soil amendments and targeted plantings to improve stormwater retention and filtration, to help protect Lake Washington water quality by filtering stormwater from about 25 acres of the neighborhood. It will also provide a new green open space for the community and may help to reduce the risks of street flooding on S Othello St. The project is currently in the design phase. More information can be found on the project website at <https://www.seattle.gov/utilities/neighborhood-projects/chief-sealth-trail>.

GSI UVP: Lake City Floodplain Park

Located in the Lake City community, west of Lake City Way NE on NE 125th Street between 22nd Ave NE and 25th Ave NE, this project is expected to improve water quality and riparian habitat, manage on-site stormwater, and create an accessible greenspace. SPU is partnering with Seattle Park and Recreation and the non-profit Mid Sound Fisheries Enhancement Group on this project. The project is in the design phase. More information can be found on the project website at <https://www.seattle.gov/utilities/neighborhood-projects/lake-city-floodplain-park>.

GSI UVP: Roxhill Wetland Flow Reroute

SPU is partnering with a coalition of community groups in the South Delridge neighborhood to work toward restoration of a historic wetland at the headwaters of Longfellow Creek. The community plans to raise funds for restoration of the wetland cells in Roxhill Park, while SPU is evaluating options to take stormwater flows out of the MS4 system that discharges directly to Longfellow Creek, rerouting that water into the wetland. In addition to helping the wetland, this project is expected to benefit Longfellow Creek by providing water quality treatment for approximately 25 acres of residential area, decreasing peak flows to the creek, and potentially increasing year-round base flow. The project is in the planning phase. For more site background and information about the community's restoration efforts, see <http://www.duwamishalive.org/duwamish-sites/roxhill-bog-park/>.



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Other Projects Planned

Longfellow Starts Here

SPU is collaborating with South Delridge communities and its consultant team to make infrastructure investments in South Delridge (South Delridge, Roxhill, Westwood, Highland Park, Riverview, and Puget Ridge neighborhoods), centering racial and social equity throughout the work to determine how and where these investments should be made. The project is in its planning phase. More information can be found on the project website at <https://www.seattle.gov/utilities/neighborhood-projects/longfellow-creek-water-quality>.

Longfellow Creek Floodplain Reconnection

This project is evaluating five potential floodplain reconnection sites between SW Genesee St and Sylvan Way SW in the Longfellow Creek watershed. The project is in the options analysis phase and anticipates work at 1-2 sites with construction estimated for 2026. The goal of the project is to provide flow control and salmon habitat improvements, such as improved instream channel habitat, restored riparian buffer, and possible instream hyporheic zone construction, for overall water quality and community benefits.

GSI Partnerships Program

This program works to leverage City GSI investments by partnering with community groups, nonprofits, private development, philanthropic organizations, and academia to help project proponents plan, site, construct and/or maintain voluntary retrofits or beyond code projects both inside and outside of areas governed by the MS4 permit. SPU can provide funding, design support / technical assistance, and/or maintenance support. Recent examples of the “beyond code” support for redevelopment include Data 1 and Watershed, two redevelopment projects in the Fremont neighborhood which voluntarily treated right of way runoff from the Aurora Bridge in bioretention cells constructed in Troll Avenue. Additional projects are in discussion.

Rain City Partnerships Program

RainCity Partnerships is a community-based public private partnership (CBP3) program designed to incentivize nature-based solutions to stormwater pollution via 1) voluntary green stormwater infrastructure (GSI) retrofit projects that manage existing impervious surface on parcels and 2) riparian area restoration projects along priority reaches of Seattle’s creeks and the Duwamish River. The program structure uses one performance-based contract to deliver defined water quality outcomes and defined community benefit outcomes. A service-based contract is substantially different than the design-bid-build approach used for most of SPU projects. In this CBP3, all work and services necessary to achieve these outcomes are included in one procurement and include: program management, community engagement, project identification, planning, design, all components of project delivery and construction, three years of operations and maintenance, workforce development and mentorship. In 2023, a CBP3 contractor was selected through a competitive bid process. In 2024, the contractor will work to identify areas throughout the City that may be a good fit for projects, including both inside and outside of areas governed by the MS4 permit. This Program is anticipated to spend \$15M over five years. More information can be found here: <https://700milliongallons.org/raincity/>

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II.8 Source Control Program for Existing Development – S5.C.8

II.8.1 Permit Requirements

Permit Special Condition S5.C.8 requires the City to implement an ongoing program to reduce pollutants in runoff from areas that drain to MS4s owned or operated by the City. The minimum performance measures include these areas (see the Permit language for more details):

- ◆ Enforce ordinances, or other enforceable documents, requiring the application of source control BMPs for pollutant generating sources associated with existing land uses and activities. Update and make effective by August 1, 2021 (S5.C.8.b.i).
- ◆ Identify commercial and industrial sites, based on Appendix 8 of the Permit, which are potentially pollutant generating and other sites identified by complaint response, including mobile and home-based businesses, and update the inventory or list at least once every 5 years (S5.C.8.b.ii).
- ◆ Implement an inspection program for the identified sites and for sites identified through credible complaints (S5.C.8.b.iii).
- ◆ Implement a progressive enforcement policy to require sites to come into compliance with stormwater requirements within a reasonable time period (S5.C.8.b.iv).
- ◆ An ongoing training program for staff who are responsible for implementing the source control program to conduct these activities (S5.C.8.b.v).

II.8.2 Current and Planned Activities for 2024

II.8.2.1 Source Control Program

Source control is regulated by the Stormwater Code and the associated Directors' Rule (Seattle Stormwater Manual). The Stormwater Code regulates pollution generating activities and defines the operational and structural BMPs required for those activities.

Ecology determined that the Stormwater Code and Directors' Rule dated January 2021, are equivalent to Appendix 1 of the Permit, Minimum Technical Requirements for New Development and Redevelopment. The determination of equivalency by Ecology indicates that the Stormwater Code is appropriate for implementation of the minimum requirements in Appendix 1, and will protect water quality, reduce the discharge of pollutants to the maximum extent practicable, and satisfy the state requirement under Chapter 90.48 RCW to apply all known, available, and reasonable methods of prevention, control and treatment (AKART). The Stormwater Code and Directors' Rule became effective on July 1, 2021.



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In addition to the activities outlined above, the City conducts education and outreach activities to the public on issues related to stormwater. Examples of education and outreach activities related to source control include the publicly listed Water Quality Hotline (206-684-7587), the SPU Green Business Program, an SPU-funded resource conservation program, and the Spill Kit Incentive Program, which provides free spill kits and technical assistance to Seattle businesses (see Section II.11).

II.8.2.1.1 Stormwater Code and Directors' Rule Update

The Permit in 2019 required Seattle to adopt and make effective enforceable requirements, technical standards and manuals that correspond to updates identified in Appendix 10, Part 2 of the Permit, and additional significant changes by July 1, 2021. In 2021, the City updated its Stormwater Code (SMC 22.800-22.808) and SPU Directors' Rule Volume 4-Source Control.

In 2024 and 2025, the City will prepare updates to the Stormwater Code and Manual in accordance with the 2024 Permit language. Through that process, SPU will work with other relevant City departments to update the Source Control-related ordinances and BMPs.

II.8.2.2 Business Inspection Program

The Source Control Team (SC) at SPU conducts business inspections within MS4 areas of the City. SC works with businesses and residents to provide education and technical assistance regarding stormwater pollution prevention and enforce the City's Stormwater Code. A progressive enforcement process is in place to address non-compliance and egregious violations (see Section II.8.2.3 below). In 2020, the City updated its Source Control inspection protocol to adapt to the additional safety measures needed in response to the COVID-19 pandemic, allowing for virtual inspections as well as a hybrid of virtual and in-person inspections. In 2024, SC will continue to administer the updated inspection protocol to complete the required number of inspections.

Education and technical assistance provided by SC is delivered during site visits, inspections, or complaint investigations and through outreach materials, such as best management practice (BMP) sheets. Enforcement is used when the inspection process has failed to gain compliance voluntarily. The SPU Green Business Program, a free resource conservation program for Seattle businesses that is currently being implemented by Cascadia Consulting under contract with SPU, provides outreach, education and technical assistance to the business community regarding stormwater pollution prevention. The program assists Inspectors in reaching and communicating with individuals needing translation services. The SPU Green Business Program facilitates the Spill Kit Incentive Program (SKIP), which provides free spill kits and spill plans to Seattle businesses.

In accordance with Permit condition S5.C.8.b, SPU has established a program to identify publicly and privately owned sites which are potentially pollutant generating and implemented an inspection program for identified sites that drain to the City's MS4. SPU developed a list of potentially pollution generating businesses, as outlined in Appendix 8 of the Permit, and *continuously refines* the list through field reconnaissance. The list currently consists of about 1900 sites. It is generated using a combination of GIS mapping, which analyzes land use and drainage infrastructure, the Seattle business license database, which provides active business license and NAIC Code information, as well as actual field observations. The goal is that all credible water quality complaints are investigated promptly, coordinating with other agencies as appropriate. These complaints are documented in a custom database, and this information is reviewed prior to conducting an inspection.

SPU uses a suite of inspection types to conduct inspections of business that drain to the City’s MS4 areas. The suite was developed to address the complexity in achieving permit compliance and utilizing limited resources to achieve maximum water quality benefit.

- The first type is an **“audit” inspection**, which is used for new businesses or businesses who have never been inspected before. The SPU Inspector conducts a site inspection and informs the business of their source control requirements and relevant Code requirements. The business is left with a copy of its required corrective actions. Using information gathered during the inspection (such as the type of activities occurring on site and the best management practices being implemented), the business is ranked as High, Medium, or Low priority based on its potential to pollute. The current inspection cycle for businesses is every 2 years for High, 4 years for Medium, and 6 years for Low. This approach allows SPU to focus more frequent inspections on those businesses with the highest risk of pollution, thus achieving the maximum potential for water quality benefit. Businesses who are involved in a complaint reported to SC, or a spill, or an IDDE event, and businesses in the Superfund areas, will continue to be inspected using the “stormwater compliance inspection” and Superfund business inspections described below.

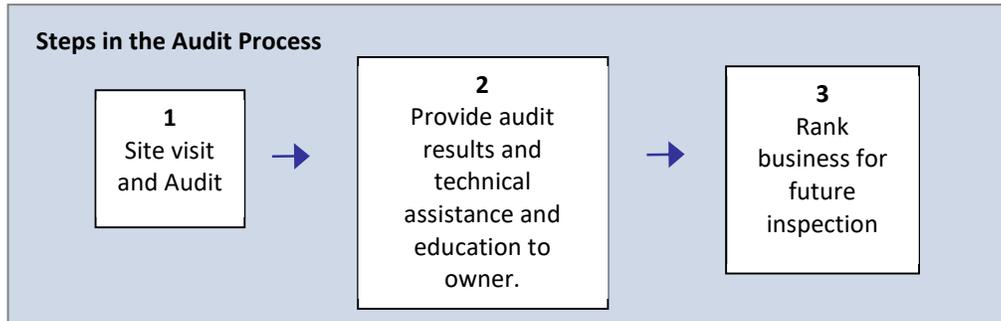


Figure II.8-1 Audit Process

- The second inspection type is a **“stormwater compliance inspection,”** whereby businesses are visited by an SPU Inspector and informed of the corrective actions necessary for their site to come into compliance with the City’s Stormwater Code. Inspectors follow up with the business after the compliance deadline (typically 30 days after the inspection) to verify that the necessary corrective actions have been implemented and will proceed with progressive enforcement when necessary. The “stormwater compliance inspection” is also used for **water quality complaint response at businesses** or if an egregious violation is found during an “audit” inspection.

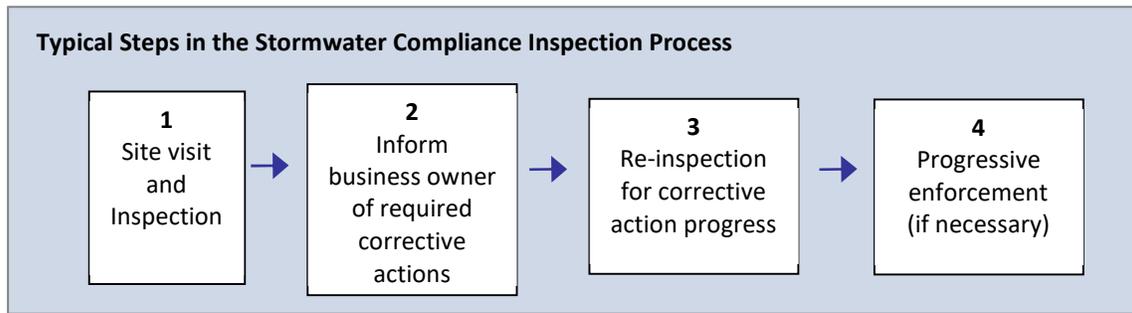


Figure II.8-2 Stormwater Compliance Inspection Process

- The third approach to business inspections is directed at businesses that discharge to areas where the City is currently engaged in a **comprehensive process for sediment cleanup** of the Lower Duwamish Waterway and the East Waterway in partnership with Ecology and the U.S. Environmental Protection Agency (EPA). Business inspections within the Superfund Cleanup areas focus on stormwater pollution prevention, and triage compliance status for hazardous waste management and industrial waste management issues. If hazardous waste or industrial compliance issues are found, they are referred to other agencies for follow up.

Mobile and home-based businesses that drain to the City’s MS4 are included in this program in one of two ways. First, inspectors move geographically through watersheds, so each business site is evaluated based on pollution generating activities, regardless of whether they are mobile, or home based. The second way that these business types are included is if a call is made to the City’s Water Quality Hotline (206-684-7587). Inspectors will respond to these calls and treat the mobile and home-based business in the same manner as other businesses.

In accordance with S5.C.8.iii.b and the strategy to categorize inspections and their frequency based on potential for sources of stormwater pollution, the SC inspectors aim to inspect a minimum of 20 percent of the required sites annually (including follow-up compliance inspections) to promote BMP effectiveness and compliance with source control requirements. In 2024, the City will continue to conduct business inspections using this process and intends to meet the 20% compliance requirement.

II.8.2.3 Progressive Enforcement Program

SC uses a progressive enforcement program to achieve source control compliance at inspected businesses. The following describes the typical steps in enforcement, though cases may vary based on site specific conditions. SC Inspectors start by issuing a corrective action letter, which provides 30 days for businesses to comply with source control requirements, at which time a re-inspection is conducted to confirm implementation. If the site remains out of compliance, a Notice of Violation is issued. A penalty may also be issued at the same time or may be suspended pending implementation of the requirements by the deadline provided in the Notice of Violation. Egregious violations and illicit discharge violations typically receive a penalty at the issuance of the Notice of Violation.

The enforcement process is closely linked to the inspection process. Figure II.8-3, below, summarizes typical steps as reflected in the enforcement process.

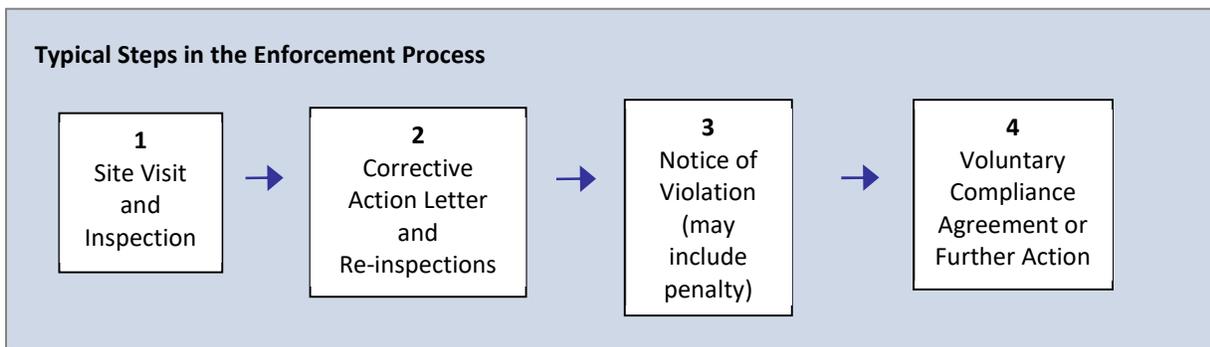


Figure II.8-3 Enforcement Process

II.8.2.3.1 Enforcement Criteria and Procedure

If a serious violation occurs, or if the corrective action process does not result in compliance, a Notice of Violation (NOV) may be issued. An inspector who believes that a NOV is necessary to achieve compliance consults with the program lead to determine the merits of proceeding with enforcement and weighs it against established criteria. In some cases, cost recovery may also be appropriate to pursue where the City has expended resources to terminate the polluting activity.

II.8.2.3.2 Voluntary Compliance Agreement

After a Notice of Violation is issued, a property owner may choose to enter into a Voluntary Compliance Agreement (VCA) with the City, if the City is willing. A Voluntary Compliance Agreement may be appropriate in the following situations:

- ◆ Where a capital investment may be necessary to achieve compliance, or
- ◆ Where the steps to achieve compliance are difficult or technically complex, or
- ◆ Where obvious alternatives are not available.

SC will work with the property owner at each of the steps in the agreement to require the business owner or property manager to meet milestones and make progress toward compliance. If the Voluntary Compliance Agreement target dates pass without compliance, further enforcement steps may be taken.



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II.8.2.4 Lower Duwamish Waterway Source Control Implementation Plan

Appendix 13 of the 2019 NPDES Phase I Permit required the City to update its Source Control Implementation Plan (SCIP) for the Lower Duwamish Waterway (LDW) by March 31, 2020. The SCIP describes the City's activities towards source control in the MS4 basins that discharge to the 5-mile Lower Duwamish Waterway Superfund Site. The updated SCIP (SCIP2) covers the City's plans for 2021-2026 and builds upon the City's 2015-2020 SCIP to continue to identify and control sources of pollution to support Superfund Cleanup efforts. Information on the City's source control efforts and the SCIP2 can be found at: <https://www.seattle.gov/utilities/neighborhood-projects/lower-duwamish-waterway>.

Appendix 13 requires that SPU prioritize LDW Source Control actions each year. Priorities typically fall into three categories:

- ◆ Source Tracing and Sampling
- ◆ Line Cleaning
- ◆ Structural Controls

The 2024 priorities, as detailed in the 2023 Annual Report Question 102a Annual Report, are:

Source Tracing and Sampling

- ◆ SPU will fill data gaps by collecting grab samples in locations that were found to be not supportive of sediment trap installation (e.g., SW Dakota SD, South Operations Center SD).
- ◆ SPU will conduct post-line cleaning sampling to confirm that cleaning removed pollutants of concern (e.g., S Nevada St SD).
- ◆ SPU will conduct targeted sampling investigations in locations with persistent pollutants or increasing concentrations (e.g., S Myrtle St, S Dakota sub basin, upper 1st Ave S (west) SD).
- ◆ Continue quarterly solids monitoring in catch basins and maintenance holes on S. Myrtle St.
- ◆ Continue to collect near-end-of-pipe solids sampling to evaluate the effectiveness of the LDW source control program (Effectiveness Monitoring Locations).

Line Cleaning

SPU intends to clean at least 4,000 linear feet of storm drain lines in 2024 to comply with Appendix 13 requirements. During 2024, SPU will focus on the following areas for line cleaning:

- ◆ Lower S Norfolk Ave CSO/EOF/SD
- ◆ 1st Ave S SD
- ◆ S Myrtle St SD

Structural Controls

- ◆ South Park Water Quality Project: SPU continues to make progress on the planning and development of a stormwater treatment facility in the South Park neighborhood of Seattle. SPU and the Seattle Department of Transportation will continue to implement the Street Sweeping for Water Quality program including weekly sweeping of S. Myrtle St.

II.8.2.5 East Waterway Source Control Actions

While the City's adaptive management requirements strictly apply to the LDW drainage basins listed in Tables 1 and 2 of Appendix 13, SPU also conducts some similar source tracing and source control actions in the East Waterway source control area. In April 2023, the US EPA released a Proposed Plan for the interim remedial action for the East Waterway (EW) Operable Unit (OU) of the Harbor Island Superfund Site. Though a cleanup plan has not been finalized at this time, the City already implements a variety of actions to control sources of pollution from the MS4 to the EW.

As in other parts of the City's MS4 area, SPU's source control actions in the drainage basin that discharges to the EW OU include business inspections and associated enforcement processes, private stormwater facility inspections, spill response, and outreach. Similar to the LDW, SPU samples sediment traps and may also collect grab samples in MS4 conveyances that discharge to the EW OU. During 2023, SPU conducted the following source control actions in the MS4 area that discharges to the EW:

- 11 source tracing samples were collected
- 54 business inspections were conducted
- 21 (business inspection) corrective action letters were issued
- 1 voluntary compliance agreement was issued
- 14 private stormwater facilities were inspected
- SPU responded to 14 spills
- 3 spill kits were handed out

In 2024, the City intends to continue implementing EW source control actions similar to those listed above.

II.8.2.6 Records Management

The Source Control Program tracks its inspection and enforcement records through a database and electronic file management system. The inspection database was converted from a Sequel Server and Microsoft Access platform to a Microsoft Dynamics and Resco cloud database. The database includes records for all site inspection information, generates corrective action letters, tracks compliance deadlines and reports inspections outcomes and other information. The database also has a QA/QC element. In general, the file includes all previous inspection information, correspondence, maps, and other relevant site information. Records are managed in accordance with the state record keeping requirements.



II.8.2.7 Training

The SC group uses the following training methods and classes to train staff who are responsible for implementing the Source Control Program.

II.8.2.7.1 Onboarding and On-the-Job Training

Each SC staff member is expected to complete training as part of their new hire orientation process. This training may involve orientation to City of Seattle Stormwater Code and Manual, Source Control Inspection Procedures Manual and Spill Response Procedures Manual, as well as partnering with Inspectors for on-the-job training and training on City of Seattle databases and systems (GIS, Maximo, FOMs, etc.).

II.8.2.7.2 Inspector Meetings

SC staff typically hold team meetings every other week to present information and discuss issues with source control implementation. Topics such as source control processes, procedures, implementation, and enforcement are routinely discussed.

II.8.2.7.3 Professional Training

Professional conferences and training related to source control are part of ongoing professional development. Examples of professional training sponsors include NW Environmental Training Center, Ecology, and EPA.



II.9 Illicit Connections and Illicit Discharges Detection and Elimination – S5.C.9

II.9.1 Permit Requirements

Permit Special Conditions S5.C.9 requires the City to have an ongoing program designed to prevent, detect, characterize, trace, and eliminate illicit connections and illicit discharges into the City's MS4. The performance measures include:

- ◆ Implement procedures for conducting investigations of the MS4, including field screening and methods for identifying potential sources.
- ◆ Publicly list and publicize a hotline or other local telephone number for public reporting of spills and other illicit discharges.
- ◆ Ongoing training program for municipal staff.
- ◆ Implement ordinances, inspect and use enforcement authority against illicit connections and illicit discharges.
- ◆ Participate in a regional emergency response program or develop and implement procedures to respond to spills and improper disposal into the City's MS4.
- ◆ Track and maintain records of the activities conducted to meet the requirements of this section.

II.9.2 Current and Planned Activities for 2024

II.9.2.1 Ongoing IDDE Program

The Stormwater Code and Directors' Rule prohibit non-stormwater discharges (SMC 22.802.020) and allow the conditional non-stormwater discharges into the City's MS4 if specific conditions are met, as is allowed by the Permit (SMC 22.802.030). The Stormwater Code addresses discharges of runoff from other non-stormwater discharges, and discharges that are in compliance with the requirements of an approved stormwater pollution prevention plan (SWPPP) that addresses such discharges (SMC 22.802.030.A.6).

The City continues to implement the Illicit Connection and Discharge Detection and Elimination (IDDE) Program initially developed under previous MS4 permits issued by Ecology beginning in 1995. SPU's Source Control (SC) team is responsible for the development and implementation of the City's IDDE program. The IDDE program is focused on preventing, identifying, and eliminating non-stormwater discharges to the City's MS4.



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The IDDE response consists of three main programs to target illicit connections and illicit discharges:

- ◆ Water Quality Investigations – program designed to identify and eliminate illicit discharges referred by the public, as well as other agencies and departments. The City maintains a reporting hotline, as well as a web form.
- ◆ Dry Weather Screening – program designed to target illicit connections and illicit discharges to the City’s MS4 during base flow conditions.
- ◆ Spill Response – program designed to respond to spills 24/7 that are affecting drainage infrastructure or receiving water bodies. Calls are dispatched to Spill Responders through the City’s Operations Response Center.

Each program is tracked using a database or geodatabase which documents investigation data and enforcement records.

II.9.2.1.1 Water Quality Investigations

The City provides a publicly listed Water Quality Hotline and web form (<http://www.seattle.gov/utilities/environment-and-conservation/our-city/report-pollution>) for the public to report potential stormwater, illicit discharge and other water quality related violations. This is part of the City’s procedure to prioritize complaints to respond to illicit connections and to investigate and respond to spills and improper



disposal into the City’s MS4. SPU maintains the hotline and responds to calls, which are left on a message system and set off a messaging system to alert responders. SC also receives complaints directly from other City departments and agencies. SC has a staff of Environmental Compliance Inspectors who respond to water quality complaints within Seattle City limits. The inspectors attempt to locate the source of the water quality problem and the responsible party, and then provide technical assistance on best management practices for pollution prevention and information on the Stormwater Code and Directors’ Rule and provide clean up assistance when necessary. The progressive enforcement process is used for violations and/or a NOV may be issued immediately. If a spill is reported, the caller is directed by staff at the Water Quality Hotline to call the Operation Response Center (ORC) at 206-386-1800 to report the spill so that a Spill Coordinator can be dispatched immediately.

Illicit connections are considered a top priority complaint and are most often responded to the same business day or within 24 hours. It is a SC policy and requirement to notify Ecology within 24 hours of a discovery of an illicit connection, regardless of the threat potential. Ecology is contacted immediately if an illicit connection presents a severe threat to human health or the environment. The contact date, time, and Environmental Response Tracking System (ERTS) number assigned are recorded on the SPU Complaint Inspection form and tracked in the SC database. SC uses progressive enforcement tools to eliminate all illicit connections within 6 months, in accordance with permit condition S5.C.9.d.iv.d.

All the water quality complaints, regardless of the suspected cause, are responded to within 3 business days. The person reporting the potential violation is notified of investigation results if they leave contact information.

Water Quality Investigation data is kept in a Microsoft Dynamics database and is stored in GIS.

II.9.2.1.2 Dry Weather Screening

SC has developed a dry weather screening program for compliance with S5.C.9.c based upon literature review and in consultation with other jurisdictions to determine appropriate methods for detection of illicit discharges. SC has incorporated and modified the approaches from these various programs to develop procedures that will serve the urban setting.

The SPU program uses the following field screening elements designed to identify and characterize continuous dry-weather flows and identify suspect intermittent and transitory flows:

1. prioritize the conveyance system,
2. perform field characterization which may include water and sediment chemical screening at conveyance system locations,
3. and use trigger values to initiate source tracing efforts.

Source tracing investigations will be started when a sample exceeds the trigger level. Follow up source tracing can include additional water or sediment sampling, visual tracing, side sewer research, dye testing, smoke testing, business inspections, stream walks, and closed-circuit TV filming of piped systems. Appendix B described the IDDE screening methodology in more detail. These investigations may require the participation of other City inspectors, operations and maintenance staff, and the participation of other agencies.

If and when an IDDE event is identified by field screening and source tracing, SC will continue to use the SC Inspection Procedure Manual and the SPU IDDE QAPP to define procedures for conducting and documenting investigations, gaining rights of entry, conducting source tracing, collecting samples, pursuing enforcement measures and managing data. The manual also contains information and contacts for interagency cooperation. In addition to the inspection procedure manual, SC currently uses decision and sampling guidance developed by the City as part of program implementation.

II.9.2.1.3 Spill Response

Spill response at the City is handled by a variety of departments depending on the source and type of spill. This is part of the City's procedure to investigate and respond to spills, improper disposal, and illegal dumping into MS4s owned or operated by the City. SPU is responsible for response to spills that have the potential to enter, or have entered, the City's MS4. In cases where a City Department other than SPU responds and cleans up a spill (e.g., SDOT, SCL, FAS, or Parks), the Department's procedures direct them to notify SPU of all spills that enter or have the potential to enter the MS4. The Seattle Fire Department's (SFD's) operational protocol is to notify the ORC when SFD responds to a "2 Alarm Fire" or greater.

The SPU Spill Response Program is staffed by a Spill Lead and a network of on-call Spill Coordinators. Spill Coordinators work in shifts and are available 24 hours/7 days week. Spill Coordinators continued to respond to spills during the ongoing COVID-19 pandemic, with additional safety measures in place, and will continue to respond with these safety measures in 2024. The Spill Coordinator is responsible for responding to the spill, coordinating cleanup, and filing a report form.



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Spill response calls are dispatched through the SPU Operations Response Center (ORC) and are received via a publicly available phone number (206-386-1800). Once a spill call is received, the Dispatcher contacts the SPU on-call Spill Coordinator and advises them of the situation.

Spill Coordinators follow written procedures for investigation, clean up and reporting to appropriate agencies. Spill Response Guidelines were established by SPU in 2000, revised in 2012 (and are updated on an as needed basis), and cover spill classifications, training requirements, safety procedures, documentation, disposal, interagency cooperation, and regulatory notification.



Above Left: Roadway sheen. Above right: The same area after SPU's Spill Response team completed cleanup.

II.9.2.2 Records Management

Enforcement actions are tracked both in the Dynamics database and electronically in a separate folder on the City network. All enforcement documentation, inspection reports, warning letters, notices of violations, and other enforcement records are kept on file. SPU utilizes its progressive enforcement procedures in situations where a spill has occurred.

In 2019-2020, the SC Team scanned all hard copy files into electronic format to assist with field access and for preservation. All documents are stored on SharePoint and are accessible via the Dynamics database. Records are managed in accordance with the state record-keeping requirements.

II.9.2.3 Training

The SC team, which includes the IDDE Program Lead, the Spills Lead and Spill Coordinators, uses the following training methods and classes to train staff who are responsible for implementing the IDDE Program.

II.9.2.3.1 Onboard and On-the-Job Training

Each SC staff member is expected to complete training as part of their new hire orientation process. This training may involve orientation to City of Seattle Stormwater Code and Manual, Source Control Inspection Procedures Manual, and Spill Response Procedures Manual, as well as partnering with Inspectors for on the job training and training on City of Seattle databases and systems (GIS, Maximo, FOMs, etc.).

II.9.2.3.2 Inspector Meetings

SC staff typically hold weekly Spill Response team meetings to present information and discuss issues with IDDE source control implementation. Topics such as spill cleanup procedures, coordination, and enforcement are routinely discussed.

II.9.2.3.3 Professional Training

Professional conferences and training related to identifying illicit connections and discharges are part of ongoing professional development and utilized when available.

II.9.2.3.4 City Staff Training

All municipal field staff, which as part of their normal job duties may come into contact with or otherwise observe an illicit connection or illicit discharge to the storm sewer system, are trained during staff meetings, on the job or via computer-based learning, on how to identify illicit discharges and connections and how to properly report and/or respond to them.

In 2023, two sessions on Stormwater BMPs and IDDE were offered during the field crew's Fall training week. In 2024, the inter-department NPDES coordination team will continue sharing the SPU-developed IDDE/Spill Cleanup and Reporting video (created using 2021-2023 Capacity Grant funds) with various workgroups and adding it to the list of required trainings for applicable staff.



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II.10 Operation and Maintenance Program – S5.C.10

II.10.1 Permit Requirements

Permit Special Condition S5.C.10 requires the City to implement and document a program to regulate maintenance activities and to conduct maintenance activities to prevent or reduce stormwater impacts. The performance measures include the following, with more detailed requirements included in the Permit text:

- ◆ Implement maintenance standards for facilities that are as protective, or more protective, of facility function than those specified by Ecology (S5.C.10.a).
- ◆ Evaluate and, if necessary, update existing ordinances or other enforceable documents requiring maintenance of all stormwater treatment and flow control BMPs/facilities regulated by the City, establishing maintenance standards as or more protective than those specified in the 2019 Stormwater Management Manual for Western Washington no later than July 1, 2021 (S5.C.10.b.i).
- ◆ Implement an ongoing inspection program for stormwater facilities regulated by the City to enforce compliance with adopted maintenance standards as needed based on the inspection; this program may implement a reduced inspection frequency based on maintenance records (permit condition S5.C.10.b.ii). Compliance is based on achieving at least 80% of required inspections (S5.C.10.b.iii).
- ◆ Implement a program to annually inspect permanent stormwater treatment and flow control facilities owned or operated by the City (S5.C.10.c.i), conduct spot checks of potentially damaged stormwater facilities after storm events (S5.C.10.c.ii), and conduct repairs or maintenance actions in compliance with maintenance standards. Compliance is based on achieving at least 95% of required inspections (S5.C.10.c.iii).
- ◆ Implement a program to annually inspect catch basins and inlets owned or operated by the City (S5.C.10.d). Compliance is based on achieving at least 95% of required catch basin inspections (S5.C.10.d.iii).
- ◆ Implement practices, policies, and procedures to reduce stormwater impacts associated with runoff from all lands owned or maintained by the City, and road maintenance activities under the functional control of the City (S5.C.10.e).
- ◆ Implement an ongoing training program for employees who have primary construction, operations or maintenance job functions that may impact stormwater quality (S5.C.10.f).
- ◆ Develop and implement SWPPPs for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the City in areas subject to the Permit that are not covered by another Ecology-issued stormwater discharge permit (S5.C.10.g).
- ◆ Maintain records of inspection and maintenance or repair activities (S5.C.10.h).



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II.10.2 Current and Planned Activities for 2024

The following sections outline planned activities needed to meet the key Permit requirements. In 2024, staff will continue to operate using many of the additional precautions and safety measures learned through the COVID-19 pandemic.

II.10.2.1 Maintenance Standards

The City has a program based on maintenance standards in place to reduce stormwater impacts associated with runoff from impervious surfaces and operation and maintenance of stormwater facilities that discharge to the City's MS4. This program follows the current Stormwater Code (2021), and the current Directors' Rule (SPU DWW-200/SDCI 10-2021), City of Seattle Stormwater Manual, Appendix G, Stormwater Control Operations and Maintenance Requirements outlines inspection, maintenance, and record keeping requirements for stormwater management facilities, both public and private, in the City. When maintenance is required according to the standards, the City will require typical maintenance to be performed within one year for all treatment and flow control facilities; within six months for all catch basins; and within two years for maintenance requiring capital construction of less than \$25,000. In some cases, the City owns or operates facilities with site-specific maintenance requirements that require facility-specific maintenance standards. For these situations, the City has developed facility-specific standard operating procedures that incorporate the inspection and maintenance requirements of Appendix G as well as detailed information such as the location and access restrictions of facilities, necessary equipment, safety procedures and maintenance procedures.

II.10.2.1.1 Stormwater Code and Directors' Rule Update

The Permit required Seattle to adopt and make effective enforceable requirements, technical standards and manuals that correspond to updates identified in Appendix 10, Part 2 of the Permit, and additional significant changes by July 1, 2021. In 2021, the City updated Stormwater Code (SMC 22.800-22.808) and SPU Directors' Rule. More information on this process can be found in Section II.5.

II.10.2.2 Maintenance Standards for Private Stormwater Facilities Regulated by the City

The Source Control (SC) group at SPU is responsible for inspecting privately-owned facilities regulated by the City, based on maintenance standards established by the City in the Stormwater Code and Directors' Rules SPU DWW-200/SDCI 10-2021. During a facility inspection, all aspects of the system are inspected (e.g., flow control devices, catch basins). When any part of that system (including catch basins) is found to be out of compliance with Stormwater Code requirements for maintenance, a corrective action letter is sent to the facility owner, and the owner must certify that the work has been completed to correct the noncompliance.

Maintenance standards for private stormwater facilities regulated by the City Stormwater Code are defined and described in Appendix G of the 2021 City of Seattle Stormwater Manual (aka Directors' Rule SPU DWW-200/SDCI 10-2021). Appendix G provides a summary of the inspection and maintenance requirements. The inspection and maintenance requirements include information about what features to inspect at each facility, when and how often these private systems should be inspected, and how to identify specific defects that warrant corrective action. The City uses a progressive enforcement process to achieve site compliance. Maintenance standards and requirements will be evaluated and, if necessary, updated as required by the Permit.

Permit condition S5.C.10.b.ii requires that the City implements an ongoing inspection schedule to annually inspect all stormwater treatment and flow control facilities (other than catch basins) regulated by the City in areas that drain to the City's MS4, unless a reduced frequency (based on maintenance records or written statements) is developed. Starting on January 1, 2016, SPU changed the inspection frequency for all private stormwater facilities that discharge to the City of Seattle's MS4 from annual to *once every three years for residential facilities and once every two years for all other facilities*, as allowed under condition S5.C.10.b.ii of the Permit. If SPU receives a complaint about a private stormwater facility via its Water Quality Hotline or if SPU determines during a Source Control Inspection that a site's stormwater facility is out of compliance, SPU will use progressive enforcement to bring the private stormwater facility into compliance with the City ordinances and rules.

The changes to the inspection frequency of private stormwater facilities were initiated based on a thorough statistical analysis. In 2015, SPU conducted an analysis of SPU's inspection records to evaluate effective inspection frequencies. The analysis included all private stormwater facility sites inspected for permit compliance from 2009 through 2014. The goal is to inspect at a frequency when most sites are still in compliance but before there's potential to be out of compliance. Based on this analysis of SPU inspection records, 80 percent of all sites are estimated to remain in compliance for *at least two years*. However, since commercial and other land use types have a higher potential for pollution-generating activities onsite, SPU typically inspects those sites every two years. The two-year interval coincides with the frequency of SPU's source control business inspections for high-priority business sites. As such, SPU coordinates the timing of private stormwater facility inspections with business inspections to be more efficient for both the businesses and SPU. The analysis was submitted as an attachment for questions 55 in the 2016 Annual Report and is available upon request.

II.10.2.3 Maintenance of Catch Basins Owned or Operated by the City

Numerous City departments inspect and maintain catch basins and inlets that are part of the public stormwater system annually per Permit section S5.C.10.d.i. SPU's catch basin maintenance and inspection program focuses on maintaining catch basins and inlets for public health, safety, and property and by nature includes water quality benefits. FAS, SCL, and Parks each continue to implement programs for catch basin inspection and maintenance for catch basins on City owned properties that the department manages or operates. The departments use asset management software to schedule catch basin maintenance (i.e., generate preventative maintenance work orders).

Material collected from catch basin and inlets, as well as City-owned/operated stormwater treatment and flow control facilities, are managed in accordance with Appendix 6 of the Permit.

II.10.2.4 Inspection and Maintenance of Private Stormwater Facilities

The SC group at SPU is responsible for inspecting privately owned stormwater flow control and treatment facilities that drain to the City's MS4. The inspection determines that the system functions as designed and is properly maintained. Inspectors conduct a site inspection and inform the owner of the stormwater facility of the required maintenance. SC uses the progressive enforcement process as detailed in Directors' Rule 21-2015, DWW-200, Vol. 5: Enforcement. Facility owners may self-certify that



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the work needed for compliance has been completed by providing a signed copy of the corrective action letter with a copy of the work detail performed. SC performs random re-inspections of self-certified properties for quality control of this process.

In 2023, the City's private stormwater facility inspection program met the Permit's compliance threshold by inspecting at least 80 percent of required inspections. In 2024, SPU intends to continue implementing the private stormwater facility inspection schedule described above, and meet the minimum 80% compliance threshold.

SDCI is responsible for conducting inspections of private stormwater facilities in new development and during the period of heaviest construction to identify maintenance needs and enforcing compliance as needed. Once the development is completed, SDCI hands over the final facility documentation and the inspection responsibility to SPU's SC group.

II.10.2.5 Inspection and Maintenance of City-Owned Stormwater Facilities

SPU schedules and coordinates inspection and maintenance of conventional (e.g., sediment chambers) and innovative (e.g., Green Stormwater Infrastructure, GSI) stormwater facilities owned or operated by the department on an annual basis and following 10-year 24-hour storm events. The System Maintenance Division at SPU is responsible for the inspection and maintenance of stormwater facilities located in the right-of-way and that are owned, operated, or maintained by SPU. SPU inspects and maintains a significant number and range of stormwater BMPs/facilities to control and/or treat stormwater. In 2023, conventional water quality assets in the City's MS4 that were inspected and maintained by SPU included approximately 9 ponds, 118 underground detention (flow control) facilities, and 404 water quality BMPs (including BayFilter units, Filterra units, oil-water separators, PerkFilters, sediment chambers, sediment vaults, swirl concentrators, wet vaults, and StormFilters). Stormwater facilities owned by the City, but located outside of the right-of-way, are inspected and maintained by the City Department that manages the property unless there is an agreement between SPU and the City Department.

SPU and the other City Departments have developed and implemented an inspection program to annually inspect all permanent stormwater facilities owned or operated by the City. The program is designed to determine if maintenance is needed and implement the needed maintenance in accordance to the Directors' Rule or a facility-specific maintenance standard. The inspection program's goal is to achieve at least 95 percent of required inspections annually (permit condition S5.C.10.c.iii). As with catch basin maintenance, the departments use asset management software to schedule stormwater facility inspection and maintenance (i.e., work orders are generated annually). If spot checks, conducted in accordance with S5.C.10.c.ii, show widespread damage or maintenance needs, additional stormwater treatment and flow control facilities that may have been affected will also be inspected.

II.10.2.6 Records of Inspections, Maintenance, or Repair

II.10.2.6.1 Private Stormwater Facilities

The SC group tracks private facility inspection and enforcement records through a Microsoft Dynamics database and electronic file management system. The database tracks information for both source control inspections and drainage system maintenance inspections. Records are managed in accordance with the State record keeping requirements. Enforcement actions are tracked both in the database and electronically in SharePoint.

II.10.2.6.2 City-Owned Stormwater Facilities

SPU oversees inspection and maintenance of conventional and innovative (e.g., GSI) facilities for which SPU is responsible. Inspection data are tracked, and maintenance is conducted as needed following the applicable maintenance standard.

Inspection and maintenance of stormwater facilities for which SPU is responsible are tracked by the computer program MAXIMO at SPU. This program is used to generate work orders for facility inspections and maintenance and to record the results of these activities. The other City Departments use a variety of similar tools and software to record inspections and maintenance results.

II.10.2.7 Stormwater Practices to Reduce Impacts Associated with City-Owned Land and Maintenance Activities

The City's Stormwater Manual, Stormwater Code, and the Directors' Rule establish practices to reduce the stormwater impacts associated with lands owned or maintained by the City and that drain to the City's MS4s. According to Permit condition S5.C.10.e, lands owned or maintained include parking lots, streets, roads, highways, buildings, parks, open space, road right-of-way, maintenance yards, and stormwater treatment and flow control BMPs/facilities that are owned or maintained by the City.

In addition to the Stormwater Code, SDOT has established and has implemented practices to reduce stormwater impacts associated with runoff from City road maintenance activities using Maintenance Management System Performance Sheets that reference BMPs and elements of the Regional Road Maintenance Initiative.

Parks, FAS, and SCL follow the Stormwater Code and Directors' Rule in place for management of stormwater from roads and parking lots under their departments' management outside the City rights-of-way. The departments follow the Stormwater Code and use appropriate BMPs when they conduct construction and maintenance activities on or near streets, parking lots and roads. City-managed capital projects are inspected for Stormwater Code compliance and BMPs by the responsible department. The individual City Departments have implemented and will continue to implement a spill program and provide training on spill and source control (see Section II.9).



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II.10.2.7.1 Policies and Procedures to Reduce Pollutants from City-Owned or Maintained Lands

The Stormwater Code and the City of Seattle Stormwater Manual, Volume 4: Source Control (2021) presents approved methods, criteria, details, and general guidance for controlling pollutants at their source and establishes policies and procedures to reduce pollutants in discharges from lands owned or maintained by the City that drain to the City's MS4s.

The following policies and procedures are implemented by the City Departments.

Ditch Maintenance

The policy for addressing ditch maintenance can be found in the City's Stormwater Manual, Volume 4 – Source Control under BMP 40: Maintenance of Roadside Ditches.

Street Cleaning

The policy for addressing street cleaning can be found in the City's Stormwater Manual, Volume 4 – Source Control under BMP 42: Urban Streets. The City's street sweeping program removes sediment and associated contaminants from the street surfaces before they enter the stormwater system. The [current program](#) provides street sweeping services on particular arterial roads on a scheduled bi-weekly rotation in north and south sides of the City. A map of the street sweeping routes can be found here: [City of Seattle Street Sweeping Routes \(arcgis.com\)](#)

Snow and Ice Control

Policies for addressing snow and ice control can be found in the City's Stormwater Manual, Volume 4 – Source Control under BMP 36: Deicing and Anti-icing Operations for Airports and Streets and BMP 54: Streets and Highways.

Landscape Maintenance and Vegetation Management and Disposal

The purpose of the City's Landscape and Grounds Management Policy is to establish that City landscapes are designed, constructed, and maintained in a manner that protects and enhances our region's natural resources and public health; that City landscapes are models of environmental stewardship in the eyes of the public; that the City establishes a leadership role in developing both aesthetically pleasing and ecologically sensitive landscapes; and that there is a consistent standard of environmental stewardship observed by City departments managing landscapes and other grounds.

The City's Landscape and Grounds Management guidelines are intended to provide a framework for environmental responsibility in how the City plans, designs, constructs, commissions, manages, and maintains parks, rights-of-way, and other landscaped areas. The focus of the guidelines is on environmental stewardship of City-owned lands.

The policy for addressing landscape maintenance and vegetation management can be found in the City's Stormwater Manual, Volume 4 – Source Control under BMP 22: Landscaping and Vegetation Management.

SDOT's Street Use and Urban Forestry Division has policies and procedures in place to landscape maintenance and vegetation disposal on lands owned and maintained by SDOT. Urban Forestry uses Resource-efficient Natural Landscaping: Design – Build – Maintain (Seattle, 2007a,

https://www.seattle.gov/util/cs/groups/public/@spu/@conservation/documents/webcontent/spu01_003440.pdf), as a BMP reference.

Parks operates under City regulations, and landscaping policies and plans (<http://www.seattle.gov/parks/about-us/policies-and-plans>).

Dust Control

The policy for addressing dust control can be found in the City’s Stormwater Manual, Volume 4 – Source Control under BMP 29: Dust Control in Disturbed Land Areas and on Unpaved Roadways and Parking Lots.

Integrated Pest Management

Policies for addressing application of fertilizer, pesticides, and herbicides are addressed in the City’s Stormwater Manual, Volume 4 – Source Control under BMP 22: Landscaping and Vegetation Management , BMP 49: Pesticides and an Integrated Pest Management Program, and BMP 50: Fertilizer Application. SDOT’s Street Use and Urban Forestry Division limits the use of fertilizers, pesticides, and herbicides in accordance with City policies and procedures. Parks has an active Integrated Pest Management program to control and reduce pesticide use (<http://www.seattle.gov/parks/about-us/policies-and-plans/pesticide-reduction>).

Sediment and Erosion Control

The policy for addressing sediment and erosion control is addressed under BMP 31: Soil Erosion and Sediment Control at Industrial Facilities in the City’s Stormwater Manual, Volume 4 – Source Control.

SDOT’s Street Use and Urban Forestry Division has policies and procedures in place to address erosion and sediment control on lands owned and maintained by SDOT. Urban Forestry uses Resource-efficient Natural Landscaping: Design – Build – Maintain (Seattle, 2007a, https://www.seattle.gov/util/cs/groups/public/@spu/@conservation/documents/webcontent/spu01_003440.pdf), as a BMP reference.

Trash and Pet Waste Management

Policies for addressing trash and pet waste management can be found in the City’s Stormwater Manual, Volume 4 – Source Control under Citywide BMP 3: Dispose of Fluids and Wastes Properly, Citywide BMP 4: Proper Storage of Solid Wastes, and BMP 45: Pet Waste.

Exterior Building Cleaning and Maintenance

Policies for addressing exterior building cleaning and maintenance can be found in the City’s Stormwater Manual, Volume 4 – Source Control under BMP 7: Property Maintenance and BMP 17: Cleaning or Washing.



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II.10.2.8 Training Program

The City provides on the job training for workers who work on projects that may impact water bodies, which includes employees of the City who have primary construction, operations or maintenance job functions that could impact stormwater quality. This training includes information on BMPs for construction and operation and maintenance projects. SDCI provides training to City Staff on temporary erosion and sediment control (TESC).

SDOT Street Maintenance employees receive stormwater BMP training for their work and are provided with stormwater BMP reference manuals. Separate field manuals provide information in the field for implementation of appropriate stormwater BMPs.

SPU, SDOT, Parks, FAS, and SCL all have spill prevention training and source control training in place. These departments evaluate their existing training program and update as needed to comply with the Permit. These topics are discussed as part of the inter-departmental NPDES coordination team forum.

II.10.2.9 Stormwater Pollution Prevention Plans

A number of City departments have umbrella SWPPPs that include operational BMPs that meet the Stormwater Code and Directors' Rule. In addition, facility-specific SWPPPs have been developed and implemented for heavy equipment maintenance or storage yards, and material storage facilities, that discharge stormwater to the MS4. These SWPPPs have been developed to meet the requirements of Permit condition S5.C.10.g and will be revised as needed to maintain accuracy.

The City's response to the 2023 Annual Report question 74a includes a list of some of the SWPPPs developed, including umbrella SWPPPs (and facility-specific SWPPPs).



II.11 Education and Outreach Program – S5.C.11

II.11.1 Permit Requirements

Permit Special Condition S5.C.11 requires the City to implement a stormwater education and outreach program for the area served by the MS4, based on local water quality information and target audience characteristics, designed to:

- ◆ Build general awareness among target audiences about methods to address and reduce impacts from stormwater runoff (S5.C.11.a.i).
- ◆ Effect behavior change to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts (S5.C.11.a.ii through vii).
 - ❖ The City met Permit Conditions S5.C.11.a.iv.c and S5.C.11.a.v by developing (by February 1, 2021) and implementing (by April 1, 2021) a behavior change campaign for a new target audience and BMP, following social marketing practices and methods
 - ❖ No later than March 31, 2024, the City must evaluate and report on the changes in understanding and adoption of targeted behaviors resulting from the implementation of the strategy and any changes to the campaign in order to be more effective, including a description of the strategies and process to achieve the results.
- ◆ Provide and advertise stewardship opportunities that encourage community engagement in addressing the impacts from stormwater runoff (S5.C.11.b).

II.11.2 Current and Planned Activities for 2024

The City implements a variety of educational programs to engage the general public, businesses, engineers, contractors, developers, and land use planners in Seattle about the general impacts of stormwater, LID principles, LID BMPs, stormwater treatment and flow control BMPs/facilities (Table II.11-1). These programs provide educational materials, instruction or designs that residents can use at their home, business, or in the community at large.

Some of the programs use social science methods, particularly Community Based Social Marketing, to foster behaviors that reduce stormwater pollution. This includes identifying barriers to an audience's ability to engage in sustainable behavior and working to remove those barriers to participation while simultaneously communicating the need for behavior change in a culturally competent way. Evaluation is built into the program design to track performance metrics and changes in the audiences' adoption of the target behavior.



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Table II.11-1: 2024 Education and Outreach Programs

Program Name	Program Type		
	General Awareness	Behavior Change	Stewardship
Adopt a Drain	x	x	x
Green Business	x		
Pet Waste	x		x
Salmon Stewards	x		x
STORM / Puget Sound Starts Here	x		
Storm Drain Stenciling	x		x
Stormwater In Schools	X		
Sustainable Landscaping	x		x
Trees for Seattle	x		x
Water Quality Hotline	x		
Youth Service Learning	x		x

II.11.2.2 Adopt a Drain

Program Description: The Adopt a Drain program is a social science-based behavior change program that asks residents to adopt a nearby storm drain and keep it clear of debris. This program is part of a storm drain care approach that connects and promotes best practices for upstream pollution prevention behaviors like picking up pet waste, maintaining vehicles, and natural yard care practices.



Target audience: General public & school age

Subject areas: Preventing surface water pollution and BMPs to prevent non-point source pollution

2024 priority goals:

- Recruit 150 new volunteers to care for 250 storm drains and collect 4,000 lbs of debris
- Promotion of Adopt a Drain to 3 Spanish language community groups, including through Spanish language media
- Collaborate with other jurisdictions to recruit 450 new Adopt a Drain participants regionally

II.11.2.3 Green Business

Program Description: SPU'S Green Business Program promotes SPU's Community-Centered, One Water, Zero Waste vision by engaging businesses to meet and/or exceed environmental and health requirements through education, training, and technical assistance. This program also recognizes businesses who incorporate sustainable business practices through the EnviroStars program. The program provides spill kits, training on spill prevention and stormwater best management practices, education on Fats, Oils, and Grease (FOG) and 'what to flush', and technical assistance with environmental compliance. More information can be found here:

<https://www.seattle.gov/utilities/protecting-our-environment/sustainability-tips/green-business-program>

Target audience: Business

Subject areas: Preventing surface water pollution and BMPs to prevent non-point source pollution

2024 priority goals:

- Provide 200 spill kits to businesses and train employees on their use
- Provide stormwater best practices training to Seattle food service establishments, including in-language as appropriate
- Partner with wastewater business outreach to engage businesses in a collaborative way



II.11.2.4 Pet Waste

Program Description: SPU's Pet Waste program lowers barriers to proper disposal of pet waste by maintaining doggy bag dispensers in locations across Seattle prioritized by equity and impacts on water quality. Focused outreach is conducted in priority areas and with priority audiences to spread awareness about the impacts of pet waste on water quality.

Target audience: General public

Subject areas: Preventing surface water pollution and BMPs to prevent non-point source pollution

2024 priority goals:

- Distribute 50,000 Mutt Mitt pet waste bags, including supporting 3 volunteers to distribute 20,000 of those bags
- Mail pet waste awareness materials to 300 residents in one priority area
- Install 50 educational yard signs at parks, prioritizing parks adjacent to waterbodies and areas identified by crews as pet waste hot-spots



**Seattle
Public Utilities**

View Online: [Stormwater Management Plan - Utilities | seattle.gov](https://www.seattle.gov/utilities/stormwater-management-plan)

Send comments to: SWMP@seattle.gov

II.11.2.5 Salmon Stewards

Program Description: The Salmon Stewards partnership trains community volunteers to provide outreach and interpretation to thousands of Carkeek park visitors annually. Topics focus on salmon ecology and the impacts of pollutants on water quality. Salmon Stewards is based at one of Seattle’s most publicly accessible salmon runs.

Target audience: General public

Subject areas: General impacts of stormwater on surface waters, including impacts from impervious surfaces



2024 priority goals:

- Train 25 community members as volunteer educators, with a focus on skill building in equitable interpretation
- Engage 4,000 park visitors
- Recruit a minimum of one multilingual Salmon Steward

II.11.2.6 STORM / Puget Sound Starts Here

Program Description: Stormwater Outreach for Regional Municipalities (STORM) is a coalition of 80 jurisdictions working to comply with NPDES and make a difference for water quality. The Puget Sound Starts Here campaign is a collaborative impact approach. Partners include STORM members, nonprofit organizations, and businesses dedicated to protecting Puget Sound.

Target audience: General public

Subject areas: BMPs to prevent non-point source pollution



2024 priority goals:

- Participate in Puget Sound Starts Here Month collective marketing campaign
- Participate on Steering Committees for both STORM and Puget Sound Starts Here

II.11.2.7 Storm Drain Stenciling

Program Description: SPU’s storm drain stenciling program is a volunteer-based stewardship program that provides stencil supplies and instruction for individuals and community groups to raise awareness about stormwater pollution and water quality by stenciling messages next to storm drains. Messages draw a connection between storm drains, water quality, and local waterways.

Target audience: General public & school age

Subject areas: Preventing surface water pollution including impacts from improper disposal of residential and commercial discharges into storm drains and catch basins

2024 priority goals:

- Engage 150 volunteers in stenciling 600 storm drains
- Support 6 community partnership events
- Work with a community group in a priority area to create 1 place-based and behavior-focused storm drain stencil



II.11.2.8 Stormwater in Schools

Program Description: SPU’s Stormwater in Schools (previously "K-12 Youth Engagement”) program partners with schools to engage students in learning about stormwater issues, including by raising and releasing salmon; field trips on the Duwamish River, and field trips to view salmon returns.

Target audience: School age children

Subject areas: General impacts of stormwater on surface waters, including impacts from impervious surfaces and hazards associated with illicit discharges and improper disposal of waste



2024 priority goals:

- Engage 65% of low income schools in at least 1 stormwater education program
- Deliver stormwater field programs to 3,500 students through the formal education system
- Engage 60 schools in salmon rearing through the Salmon in the Schools program
- Lead 2 teacher professional development workshops



II.11.2.9 Sustainable Landscaping

Program Description: This program engages and educates residents and professional landscapers in sustainable landscaping practices to improve soil drainage function and to reduce the use of fertilizers and pesticides. More information can be found here: <https://www.seattle.gov/utilities/protecting-our-environment/sustainability-tips/landscaping>

Target audience: General public & school age; Engineers, contractors, developers, land use planners

Subject areas: Landscaping best practices, integrated pest management, infiltration, and erosion control

2024 priority goals:

- Engage 4,000 residents on topics related to sustainable landscaping
- Participate in 100 classes or events for residents, 25% of which will be designed specifically for BIPOC communities and/or disadvantaged populations
- Reach 3,000 residents via 500 hours of volunteerism from Master Composters / Sustainability Stewards
- Reach 1,000 landscape professionals at 15 events



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View Online: [Stormwater Management Plan - Utilities | seattle.gov](https://www.seattle.gov/utilities/protecting-our-environment/sustainability-tips/landscaping)

Send comments to: SWMP@seattle.gov

II.11.2.10 Trees for Seattle

Program Description: Trees for Seattle engages residents in stewarding Seattle’s urban forest. Trees for Seattle promotes a Seattle urban forest that is healthy, vital, and growing by planting new trees with residents, supporting volunteer stewardship of the urban forest, and tree-related outreach. More information can be found here: <https://www.seattle.gov/trees/>

Target audience: General public & school age

Subject areas: Urban forestry, green stormwater infrastructure



2024 priority goals:

- Plant 1,300 trees with residents on residential property and school campuses
- Direct tree planting application outreach to 300 residents in high-heat neighborhoods
- Support 25 stewardship events to engage 600 volunteers

I.1.2.12 Water Quality Hotline

Program Description: SPU provides a hotline for the public to report Water Quality concerns to facilitate prompt SPU response. This creates an easy channel to communicate water quality concerns when issues are identified by the public. This program ensures more water quality issues will be reported quicker which improves the effectiveness of the City’s response program.

Target audience: General public, Business

Subject areas: Preventing surface water pollution



2024 priority goals:

- 24/7 hotline availability and Water Quality response within 3 business days of intake

I.1.2.13 Youth Service Learning

Program Description: SPU works closely with local youth corps and service learning organizations to engage middle and high school aged youth in conversations and stewardship activities related to stormwater. Projects and lessons are tailored to the organization’s needs and requests. Youth are empowered to bring their learning back to their communities by participating in events such as neighborhood festivals and gatherings. Possible stewardship activities organized with the youth may include storm drain stencil design and installation, fall drain clearing and leaf bag distribution, and water quality monitoring.

Target audience: School age youth

Subject areas: General impacts of stormwater on surface waters; BMPs to prevent non-point source pollution

2024 priority goals:

- Provide 30 lessons/fieldtrips to 100 youth in 3 priority areas
- Work with Duwamish Valley Youth Corps to present stormwater information at 3 community events
- Organize and lead 2 storm drain stenciling events for youth organizations



Above: Duwamish Valley Youth Corp members learning about the South Park Pump Station and its connection with the future South Park Water Quality Facility.

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CITY OF SEATTLE
2024 STORMWATER MANAGEMENT PROGRAM PLAN

III. REFERENCES, DEFINITIONS AND ABBREVIATIONS



Seattle
Public Utilities

View Online: [Stormwater Management Plan - Utilities | seattle.gov](https://seattle.gov/stormwater-management-plan-utilities)

Send comments to: SWMP@seattle.gov

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III.2 Definitions and Abbreviations

All the definitions listed in have been taken directly from the 2019 Phase I MS4 Permit. Abbreviations that are specific to SPU (and in addition to abbreviations included in the Permit) are denoted with an asterisk.

Table III-1 Definitions

Term	Definition
40 CFR	Title 40 of the Code of Federal Regulations, which is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government.
AKART	All Known, Available and Reasonable methods of prevention, control and Treatment refers to State Water Pollution Control Act, Chapter 90.48.010 and 90.48.520 RCW.
Applicable TMDL	A TMDL which has been approved by EPA on or before the issuance date of this Permit, or prior to the date that Ecology issues coverage under this Permit, whichever is later.
Beneficial Uses	Uses of waters of the state, which include but are not limited to: use for domestic, stock watering, industrial, commercial, agricultural, irrigation, mining, fish and wildlife maintenance and enhancement, recreation, generation of electric power and preservation of environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters of the state.
Best Management Practices	The schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices approved by Ecology that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to waters of Washington State.
Bypass	The diversion of stormwater from any portion of a stormwater treatment facility.
Circuit	A portion of the MS4 discharging to a single point or serving a discrete area determined by traffic volume, land use, topography or the configuration of the MS4.
Component or Program Component	An element of the Stormwater Management Program listed in Special Condition S5 Stormwater Management Program for Permittees or S6 Stormwater Management Program for Secondary Permittees, or S7 Compliance with Total Maximum Daily Load Requirements, or S8 Monitoring and Assessment.
Community-based social marketing	Is a social marketing methodology and employs a systematic way to change the behavior of communities to reduce their impact on the environment. Realizing that providing information is usually not sufficient to initiate behavior change, community-based social marketing uses tools and findings from social psychology to discover the perceived barriers to behavior change and ways of overcoming these barriers.
Conveyance System	Means that portion of the municipal separate storm sewer system designed or used for conveying stormwater.

Term	Definition
Co-Permittee	An owner or operator of a MS4 which is in a cooperative agreement with at least one other applicant for coverage under this permit. A co-permittee is an owner or operator of a regulated MS4 located within or in proximity to another regulated MS4. A Co-Permittee is only responsible for permit conditions relating to the discharges from the MS4 the Co-Permittee owns or operates. See also 40 CFR 122.26(b)(1).
Clean Water Act (CWA)	The federal Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. (6-483 and Pub. L.-97-117, 33 U.S.C. 1251 et.seq.).
Director	The Director of the Washington State Department of Ecology, or an authorized representative.
Discharge point	The location where a discharge leaves the Permittee's MS4 through the Permittee's MS4 facilities/BMPs designed to infiltrate.
Entity	A governmental body or a public or private organization.
Fully Stabilized	Means the establishment of a permanent vegetative cover, or equivalent permanent stabilization measure (such as riprap, gabions or geotextiles) which prevents erosion.
General Permit	Permit which covers multiple dischargers of a point source category within a designated geographical area, in lieu of individual permits being issued to each discharger.
Groundwater	Water in a saturated zone or stratum beneath the surface of the land or below a surface water body. Refer to Chapter 173-200 WAC.
Hazardous Substance	Any liquid, solid, gas, or sludge, including any material, substance, product, commodity, or waste, regardless of quantity, that exhibits any of the physical, chemical or biological properties described in WAC 173-303-090 or WAC 173-303-100.
Heavy equipment maintenance or storage yard	An uncovered area where any heavy equipment, such as mowing equipment, excavators, dump trucks, backhoes, or bulldozers are washed or maintained, or where at least five pieces of heavy equipment are stored on a long-term basis.
Hyperchlorinated	Water that contains more than 10 mg/Liter chlorine.
Illicit connection	Any infrastructure connection to the MS4 that is not intended, permitted, or used for collecting and conveying stormwater or non-stormwater discharges allowed as specified in this permit (S5.C.9, S6.D.3, and S6.E.3). Examples include sanitary sewer connections, floor drains, channels, pipelines, conduits, inlets, or outlets that are connected directly to the MS4.
Illicit discharge	Any discharge to a MS4 that is not composed entirely of stormwater or of non-stormwater discharges allowed as specified in this Permit (S5.C.9, S6.D.3, and S6.E.3).
Impervious Surface	A non-vegetated surface area that either prevents or retards the entry of water into the soil mantle as under natural conditions prior to development. A non-vegetated surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roof tops, walkways, patios, driveways, parking lots or stormwater areas, concrete or asphalt paving, gravel roads, packed earthen materials, and oiled, macadam or other surfaces which similarly impede the natural infiltration of stormwater.

Term	Definition
Low Impact Development (LID)	A stormwater and land use management strategy that strives to mimic pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration by emphasizing conservation, use of on-site natural features, site planning, and distributed stormwater management practices that are integrated into a project design.
Low Impact Development Best Management Practices (LID BMPs)	Distributed stormwater management practices integrated into a project design, that emphasize a pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration. LID BMPs include, but are not limited to, bioretention, rain gardens, permeable pavements, roof downspout controls, dispersion, soil quality and depth, vegetated roofs, minimum excavation foundations and water re-use.
Material Storage Facilities	An uncovered area where bulk materials (liquid, solid, granular, etc.) are stored in piles, barrels, tanks, bins, crates, or other means.
Maximum Extent Practicable (MEP)	Refers to paragraph 402(p)(3)(B)(iii) of the federal Clean Water Act which reads as follows: Permits for discharges from municipal storm sewers 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 other such provisions as the Administrator or the State determines appropriate for the control of such pollutants.
Municipal Separate Storm Sewer System (MS4)	<p>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, stormwater, 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 State. • Designed or used for collecting or conveying stormwater. • Which is not a combined sewer. • 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.
National Pollutant Discharge Elimination System (NPDES)	The national program for issuing, modifying, revoking, and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the state from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of Ecology.
Notice of Intent (NOI)	The application for, or a request for coverage under a General NPDES Permit pursuant to WAC 173-226-200.
Outfall (permit definition)	Point source as defined by 40 CFR 122.2 at the point where a discharge leaves the Permittee’s MS4 and enters a surface receiving water body or surface receiving waters. Outfall does not include pipes, tunnels, or other conveyances which connect segments of the same stream or other surface waters and are used to convey primarily surface waters (i.e., culverts).

Term	Definition
Overburdened Community	Minority, low-income, tribal, or indigenous populations or geographic locations in Washington State that potentially experience disproportionate environmental harms and risks. This disproportionality can be as a result of greater vulnerability to environmental hazards, lack of opportunity for public participation, or other factors. Increased vulnerability may be attributable to an accumulation of negative or lack of positive environmental, health, economic, or social conditions within these populations or places. The term describes situations where multiple factors, including both environmental and socio-economic stressors, may act cumulatively to affect health and the environment and contribute to persistent environmental health disparities.
Permittee	Unless otherwise noted, includes city, town, or county Permittee, port Permittee, Co-Permittee, Secondary Permittee, and New Secondary Permittee.
Physically Interconnected	One MS4 is connected to another storm sewer system in such a way that it allows for direct discharges to the second system. For example, the roads with drainage systems and municipal streets of one entity are physically connected directly to a storm sewer system belonging to another entity.
Qualified Personnel	Someone who has had professional training in the aspects of stormwater management for which they are responsible and are under the functional control of the Permittee. Qualified Personnel may be staff members, contractors, or volunteers.
Receiving Waterbody or Receiving Waters	Naturally and/or reconstructed naturally occurring surface water bodies, such as creeks, streams, rivers, lakes, wetlands, estuaries, and marine waters, or groundwater, to which a MS4 discharges.
Runoff	Water that travels across the land surface and discharges to water bodies either directly or through a collection and conveyance system. See also "Stormwater."
Secondary Permittee	An operator of a MS4 which is not a city, town or county. Secondary Permittees include special purpose districts and other public entities that meet the criteria in S1.E.1.
Shared Water bodies	Water bodies, including downstream segments, lakes and estuaries, that receive discharges from more than one permittee.
Source Control BMP	A structure or operation that is intended to prevent pollutants from coming into contact with stormwater through physical separation of areas or careful management of activities that are sources of pollutants. The SWMMWW separates source control BMPs into two types. Structural Source Control BMPs are physical, structural, or mechanical devices, or facilities that are intended to prevent pollutants from entering stormwater. Operational BMPs are non-structural practices that prevent or reduce pollutants from entering stormwater.
Stormwater	Runoff during and following precipitation and snowmelt events, including surface runoff, drainage, and interflow.
Stormwater Associated with Industrial and Construction Activity	The discharge from any conveyance which is used for collecting and conveying stormwater, which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant, or associated with clearing, grading and/or excavation, and is required to have an NPDES permit in accordance with 40 CFR 122.26.
Stormwater facilities regulated by the Permittee	Permanent stormwater treatment and flow control BMPs/facilities located in the geographic area covered by the permit and which are not owned by the Permittee and are known by the permittee to discharge into MS4 owned or operated by the Permittee.

Term	Definition
Stormwater Management Manual for Western Washington (SWMMWW)	The technical manual (Publication No. 19-10-021) published by the Department of Ecology in 2019 (Ecology, 2019a).
Stormwater Management Program (SWMP)	A set of actions and activities designed to reduce the discharge of pollutants from the MS4 to the MEP and to protect water quality, and comprising the components listed in S5 or S6 of this Permit and any additional actions necessary to meet the requirements of applicable TMDLs pursuant to S7 Compliance with TMDL Requirements, and S8 Monitoring and Assessment.
Surface Waters	Lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the jurisdiction of the State of Washington.
Total Maximum Daily Load (TMDL)	<p>A water cleanup plan. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The calculation must include a margin of safety to ensure that the water body can be used for the purposes the state has designated. The calculation must also account for reasonable variation in water quality. Water quality standards are set by states, territories, and tribes.</p> <p>They identify the uses for each water body, for example, drinking water supply, contact recreation (swimming), and aquatic life support (fishing), and the scientific criteria to support that use. The Clean Water Act, Section 303, establishes the water quality standards and TMDL programs.</p>
Tributary conveyance	Pipes, ditches, catch basins, and inlets owned or operated by the Permittee and designed or used for collecting and conveying stormwater.
Urban/higher density rural sub-basins	All areas within or proposed to be within the urban growth area (UGA), or any sub-basin outside the UGA with 50 percent or more area comprised of lots less than 5 acres.
Vehicle Maintenance or Storage Facility	An uncovered area where any vehicles are regularly washed or maintained, or where at least 10 vehicles are stored.
Water Quality Standards	Surface Water Quality Standards, Chapter 173-201A WAC, Groundwater Quality Standards, Chapter 173-200 WAC, and Sediment Management Standards, Chapters 173--204 WAC.
Waters of the State	Includes those waters as defined as " <i>Waters of the United States</i> " in 40 CFR Subpart 122.2 within the geographic boundaries of Washington State and " <i>Waters of the State</i> " as defined in Chapter 90.48 RCW which includes lakes, rivers, ponds, streams, inland waters, underground waters, salt waters and all other surface waters and water courses within the jurisdiction of the State of Washington.

Table III-2 Abbreviations

Abbreviations	Definition
AKART	All known, available and reasonable methods of prevention, control and treatment (See definition in definitions table.)
AMC*	Asset Management Committee
BMP	Best Management Practice (See definition in definitions table.)
CBP3*	Community-Based Public Private Partnership Program
CCTV*	Closed Circuit Television
CIP*	Capital Improvement Program
DWW*	Drainage and Wastewater (Line of Business)
Ecology*	Washington State Department of Ecology
EIA	Effective Impervious Area
EPA*	U.S. Environmental Protection Agency
ERTS*	Environmental Report Tracking System
FAS*	Department of Finance and Administrative Services
FGD*	first ground disturbance
FOG*	Fats, Oils, and Grease
GIS*	Geographic Information System
HAZWOPER*	Hazardous Waste Operations and Emergency Response
IDDE	Illicit Connection and Discharge Detection and Elimination
JARPA*	Joint Aquatic Resources Permit Application
LDW	Lower Duwamish Waterway (Superfund Site)
LID	Low Impact Development (See definition in definitions table.)
MEP	Maximum Extent Practicable (See definition in definitions table.)
MS4	Municipal separate storm sewer system (See definition in definitions table.)
MTCA*	Model Toxics Control Act
NDS*	Natural Drainage System
NGO*	Non-Government Organization
NOI	Notice of Intent (See definition in definitions table.)
NOV*	Notice of Violation
NPDES	National Pollutant Discharge Elimination System (See definition in definitions table.)
O&M	operations and maintenance
OPCD*	Office of Planning and Community Development
ORC*	Operations Response Center
OSE*	Office of Sustainability and Environment
Parks*	Seattle Parks and Recreation
PAR*	Preliminary Assessment Report
PASV*	Pre-Application Site Visit

Abbreviations	Definition
PE*	preliminary engineering
Permit*	NPDES Phase I Municipal Stormwater Permit (also Phase I MS4 Permit)
QAPP	Quality Assurance Project Plan
QA/QC*	quality assurance/quality control
RCW	Revised Code of Washington (State)
SAM	Stormwater Action Monitoring
SCIP	Source Control Implementation Plan
SCL*	Seattle City Light
SC*	Source Control
SDCI*	Seattle Department of Construction and Inspections
SDOT*	Seattle Department of Transportation
SEPA*	State Environmental Policy Act
SKIP*	Spill Kit Incentive Program
SMC*	Seattle Municipal Code
SPU*	Seattle Public Utilities
SSC	Structural Stormwater Control
SSCP*	Structural Stormwater Control Program
STORM*	Stormwater Outreach for Regional Municipalities
Stormwater Code*	Seattle Municipal Code, Chapter 22.800–22.808, <i>The Stormwater Code</i>
SWG*	Stormwater Work Group
SWMP	Stormwater Management Program (See definition in table.)
SWPPP	Stormwater Pollution Prevention Plan
TESC*	Temporary erosion and sediment control
TMDL	Total Maximum Daily Load (See definition in table.)
TSS*	total suspended solids
UVP*	Urban Villages Program
VCA*	Voluntary Compliance Agreement
WSDOT*	Washington State Department of Transportation

* = Abbreviation is specific to SPU and/or not included in the Permit.

APPENDIX A

Mayor's Executive Order (Clerk's File No. 309104)



**Seattle
Public Utilities**

View Online: [Stormwater Management Plan - Utilities | seattle.gov](https://www.seattle.gov/utilities/stormwater-management-plan)

Send comments to: SWMP@seattle.gov



Office of the Mayor
City of Seattle
Gregory J. Nickels, Mayor

Executive Order: 01-08
NPDES Municipal Stormwater Permit

An Executive Order directing all City Departments to coordinate together to comply with the requirements of the City's National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit, which has been issued to the City of Seattle by the Washington State Department of Ecology under the provisions of the federal Clean Water Act.

WHEREAS, the City of Seattle has long prided itself on its commitment to the environment;

WHEREAS, the Mayor's Executive Order 03-04 directs City departments with responsibilities for and connections to water quality and aquatic habitat issues to develop a shared, broad-based strategy know as 'Restore our Waters' to better protect and restore water quality and aquatic habitat within the City;

WHEREAS, managing municipal stormwater runoff is a critical component of any strategy to meet the City of Seattle's long-standing objective to protect, improve, and enhance the City's lakes, creeks, bays, rivers, and other surface and ground waters;

WHEREAS, the Washington State Department of Ecology has issued to the City a permit under the National Pollutant Discharge Elimination System (NPDES) of the federal Clean Water Act that contains a suite of conditions and requirements for managing municipal stormwater runoff;

WHEREAS, compliance with the City's NPDES Municipal Stormwater Permit is a responsibility of the entire city and all City departments;

WHEREAS, the City's NPDES Municipal Stormwater Permit contains a specific requirement to establish in writing an Executive Directive requiring internal coordination among all departments affected by the permit;

NOW, THEREFORE, I, GREGORY J. NICKELS, Seattle Mayor, do order all City departments to coordinate all stormwater-related policies, programs, and projects to the maximum extent practicable and I order all City departments to eliminate barriers to compliance with the terms of the permit.

FURTHERMORE, I direct all City departments to review the NPDES Municipal Stormwater Permit that has been issued by Ecology and to identify all requirements for which they are responsible and each Director will be responsible for meeting those requirements and associated deadlines that apply to his or her respective department.

FUTHERMORE, I direct Seattle Public Utilities to serve as the lead department in all matters related to overall City compliance with the permit.

FURTHERMORE, I direct Seattle Public Utilities to provide sufficient information to each department, including technical support, and providing a forum for intra-governmental coordination so the City is able to meet the requirements of the permit.

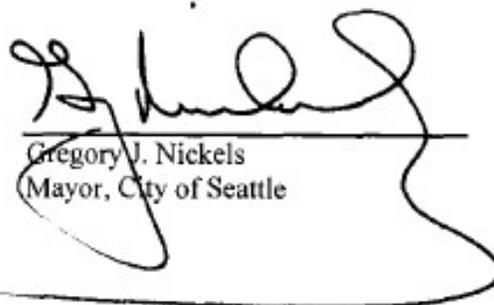
FURTHERMORE, I direct all City departments to provide to Seattle Public Utilities all necessary reporting elements and supporting material necessary to comply with the reporting requirements and associated deadlines of the permit.

FURTHERMORE, Seattle Public Utilities is directed to compile information received from other departments, and to prepare and submit on my behalf all reports to Ecology under the terms of the permit.

FURTHERMORE, the City of Seattle, is required by the permit to certify that all reports submitted to Ecology are true, accurate and complete. And the City of Seattle can be subject to penalties for submitting false information. Therefore, each department must ensure that documents and all attachments prepared in compliance with this permit are true, accurate, and complete before submitting them to Seattle Public Utilities. Seattle Public Utilities may issue additional direction to departments to ensure compliance with this requirement.

Questions regarding this Executive Order should be directed to Trish Rhay at 206-386-1832 (SPU), Darla Inglis, Ph.D. 206-233-7160 (SPU), and Robert D. Chandler, Ph.D., P.E., 206-386-4576 (SPU).

Dated this 29th day of January, 2008



Gregory J. Nickels
Mayor, City of Seattle

APPENDIX B

IDDE Field Screening Methodology



**Seattle
Public Utilities**

View Online: [Stormwater Management Plan - Utilities | seattle.gov](https://seattle.gov/stormwater-management-plan-utilities)

Send comments to: SWMP@seattle.gov

Field Screening Methodology

The City has designed its dry weather screening program to meet the Permit requirement to screen 12% of the MS4 annually in the Permit period (2019 Permit) and to employ a systematic approach to finding illicit discharges and illicit connections using dry weather field screening and source tracing at key locations in the MS4. Field screening is designed to identify and characterize dry-weather flows and attempt to identify pollutants which may indicate illicit discharges or connections. The dry weather field screening element attempts to find illicit discharges/connections by:

1. Prioritizing drainage basins for field screening using existing data and basin characteristics to evaluate the potential for illicit discharges and illicit connections.
2. Identifying screening parameters to use as indicators of discharges
3. Performing field screening which consists of characterization and chemical screening at key locations within selected basins
4. Conducting data review to compare screening results to trigger levels
5. Source tracing where the comparison suggests that illicit discharges may exist
6. Identifying and removing sources of illicit discharges and connections when found

Prioritization of Drainage Basins

Drainage basins are prioritized for field screening using existing data to weight the potential for illicit discharges and illicit connections. Factors considered during prioritization include basins where past cross connections/illicit discharges were found, percentage of impervious area, areas of the MS4 that discharge to 303(d) listed water bodies and lineal footage of drainage infrastructure in each respective basin. These screening factors are tabulated and weighted by drainage basin to generate a priority list for IDDE screening.

Parameters of Concern

The field screening consists of visual observations, field measurements, and laboratory analysis of chemical and biological parameters to characterize flowing discharges. When flow is not present, the field screening element relies on visual observations, such as damage or staining of the MS4 infrastructure as an indication of the presence of intermittent or transitory discharges. Table B-1 details the parameters typically used to identify and characterize flow types and to determine if an illicit discharge or illicit connection is suspected at each sample location. Literature has indicated that these screening parameters have been useful for identifying and characterizing residential, commercial, and industrial discharges (Brown, Caraco, and Pitt 2004).



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Table B-1 IDDE Screening Parameters

Screening Parameter	Parameter Type	Trigger Parameter
Color	Field observation	Yes
Odor	Field observation	Yes
Floatables	Field observation	Yes
Turbidity	Field observation	Yes
Conductivity	Field analysis	Yes
pH	Field analysis	Yes
Temperature	Field analysis	Yes
Estimated flow	Field analysis	No
Fluoride	Laboratory analysis – SPU Water Quality Lab	Yes
Surfactants	Field analysis	Yes
Ammonia	Field analysis	Yes
Potassium	Laboratory analysis – SPU Water Quality Lab	Yes
Fecal Coliform	Laboratory analysis – SPU Water Quality Lab	Yes

Field Screening

The general approach to field screening is to begin at an accessible location at or near the discharge point of a drainage basin, such as an outfall, maintenance hole, ditch, or other MS4 structure. Field screening is performed at multiple key locations in most drainage basins instead of relying on one observation at the MS4 outfall. The size of the drainage basin is used to determine the number of locations screened. In large MS4 basins, key upstream maintenance holes representing major branches of the MS4 are screened to help detect discharges that may be diluted, and therefore, masked by blended flows at downstream locations.

IDDE staff are responsible for field sampling and collection of samples for laboratory analyses. Sample collection consists of grab samples of flowing water. Field screening is mainly conducted during the summer months during dry weather conditions.

For the purposes of the IDDE program, dry weather means no more than 0.04 inch of rainfall in the preceding 6-hour period, with no more than 0.02 inch of rainfall in any 1-hour period. If runoff can be observed entering the drainage system, samples cannot be collected, regardless of rainfall measured.

The sampling schedule must also account for tidal intrusion in areas of the City influenced by tidal flows.

The principal components of SPU’s field screening element are:

- ◆ Field observations of the physical and environmental conditions at each site
- ◆ Field analyses by chemical screening
- ◆ Source tracing if illicit discharges or illicit connections are suspected based on the field observations or field analyses
- ◆ Laboratory analysis of the collected samples for the remaining chemical parameters
- ◆ Additional source tracing based on laboratory analyses

Typical field screening and source tracing procedures are shown below.

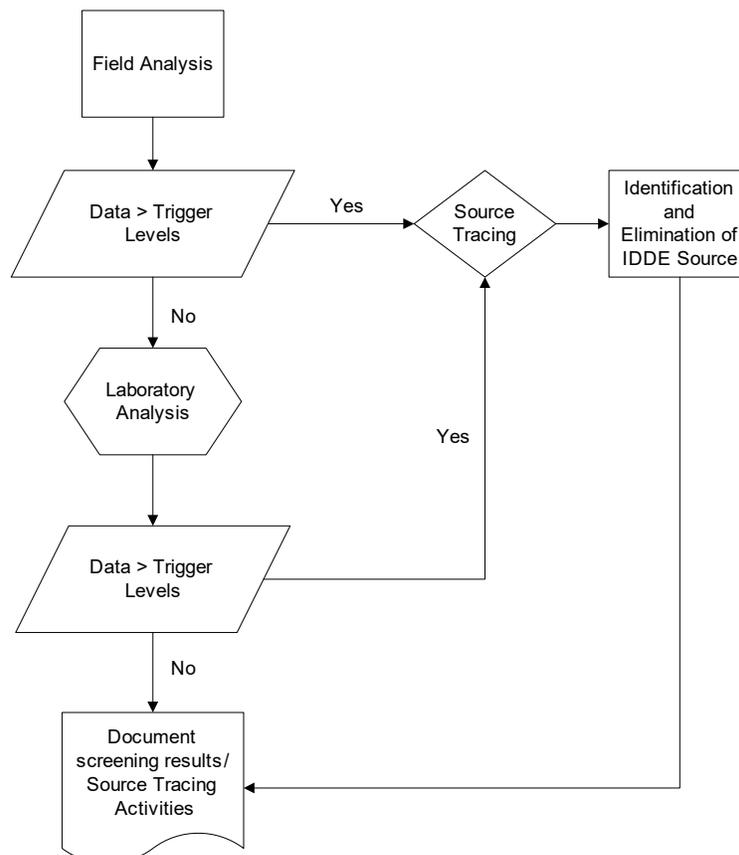


Figure B-1 IDDE Field Screening Flow Chart

Field Survey of Physical and Environmental Conditions

At each screening location, the procedure involves documenting the date, the time the sample was taken, a City specific unique asset identifier, initials of staff taking samples, sample number (which is also written on the sample bottles), field observations of the physical and environmental conditions of each field screening location (estimated flow, color, odor, turbidity, and floatables), and field parameter values and other general information regarding screening. This information is captured and stored in a geodatabase in ArcMap using field laptops.



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Chemical Screening by Field Analyses

If flow is present, IDDE staff conduct the following field analyses: temperature, pH, conductivity, surfactants, and ammonia. This information is also captured and stored in a geodatabase in ArcMap using field laptops.

Laboratory Analysis of Collected Samples

The data review process involves comparing the screening parameters from field observations and field analyses to the trigger levels to verify that source tracing has been initiated for all results over the trigger levels. In some instances, source tracing may be recommended after the data review process when the screening results are not over the trigger levels, but the data suggest the potential for an illicit discharge or connection.

Source Tracing

Source tracing in response to a field observation or analysis is initiated when one or more of the trigger levels for parameters listed in Table B-1 have been reached. Many of the MS4 maintenance holes in the City of Seattle have several inlets; therefore, several samples may be taken at each location which can result in detection of multiple triggers. Source tracing is prioritized based on public health and safety. For instance, flows with elevated fecal coliform values are prioritized overflows with elevated fluoride values as fecal coliform is an indicator of sewage which has the potential to be a public health risk. Additional source tracing based upon laboratory analysis of samples follows the same process as detailed in the field analysis section. However, rather than beginning immediately, source tracing will generally occur within 3 days after receiving and reviewing laboratory results.

Occasionally, source tracing a specific trigger, such as conductivity, does not lead to an obvious pollution source, and SC field staff have reason to believe the trigger source is a natural occurrence. In these instances, the surrounding area will be investigated visually for any potential pollution source(s), and field and lab data will be carefully reviewed to identify the most likely cause of the trigger to be natural. In some cases, there may be outstanding triggers as the IDDE dry field season ends. In these instances, field staff will review the field and laboratory data to assess each individual trigger in relation to public health and safety. Triggers suspected to be a potential severe threat to human health or the environment will be investigated further into the wet season following 'dry weather' conditions: maximum of 0.04 inches of rainfall in the preceding six-hour period, with no more than 0.02 inches of rainfall in any one hour period. Techniques such as closed-circuit television (CCTV), smoke testing, and basic source tracing (i.e., visual observations, odor etc.) may be used to trace and locate sources.

The City's progressive enforcement policy is used to eliminate illicit connections and illicit discharges once identified.