Water Pollution Control Facilities (WPCF) Permit

Class V Stormwater Underground Injection Control Systems

DEQ Permit Number 102830

ENVIRONMENTAL SERVICES
CITY OF PORTLAND
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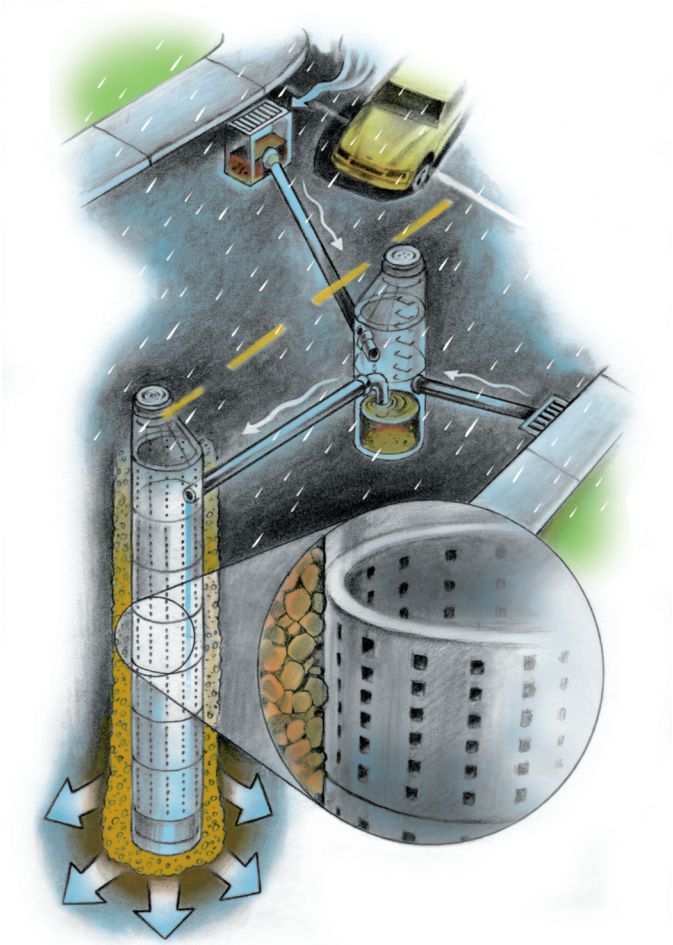
Bureau of Environmental Services • City of Portland

Underground Injection Control Management Plan

■

Annual Report
Year 6 (2015 Permit)
Fiscal Year 2020-2021
(July 1, 2020 – June 30, 2021)



November 1, 2021

Ted Wheeler, Mayor • Michael Jordan, Director

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City of Portland, Oregon

Water Pollution Control Facilities (WPCF) Permit For
Class V Stormwater Underground Injection Control Systems

Permit Number: 102830

Underground Injection Control Management Plan Annual Report No. 6 (2015 Permit)

Fiscal Year 2020–2021
(July 1, 2020, to June 30, 2021)

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Prepared By:
City of Portland, Bureau of Environmental Services

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Contents

Tables

Appendices

Acronyms and Abbreviations

BDS	Bureau of Development Services
BMP	best management practice
BPS	Bureau of Planning and Sustainability
CSSWF	Columbia South Shore Well Field
DEQ	Oregon Department of Environmental Quality
ET	Education and Training
FY	fiscal year
GWPD	groundwater protectiveness demonstration
MIP	Maintenance Inspection Program
OM	operations and maintenance
PC	Pollution Control
PBOT	Portland Bureau of Transportation
PBOT-MO	PBOT Maintenance and Operations
PM	Program Management
PP&R	Portland Parks and Recreation
PWB	Portland Water Bureau
ROW	right-of-way
SA	Systemwide Assessment
SCM	Source Control Manual
SDC	system development charge
SDMP	Stormwater Discharge Monitoring Plan
SMF	stormwater management facility
SPCR	Spill Protection-Citizen Response
SWMM	Stormwater Management Manual
UIC	underground injection control
UICMP	UIC Management Plan
WHPA	Wellhead Protection Area
WPCF	Water Pollution Control Facility

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Executive Summary

Introduction

This *Underground Injection Control Management Plan (UICMP) Annual Report No. 6 (2015 Permit)* is submitted to the Oregon Department of Environmental Quality (DEQ) to fulfill reporting requirements for the City of Portland's (City's) Water Pollution Control Facilities (WPCF) Permit for Class V Stormwater Underground Injection Control (UIC) Systems. This report summarizes UIC Program activities during the 2015 Permit reporting year, Year 6 (July 1, 2020, through June 30, 2021).

Background

DEQ issued the City's second WPCF Permit on May 19, 2015. As required by the Permit, the City submitted a UICMP, which DEQ approved on March 24, 2015. The UICMP describes the activities the City will implement throughout the second permit term (June 1, 2015, to May 31, 2025) to protect groundwater and meet WPCF Permit requirements. The Permit also requires the City to submit a UICMP annual report that summarizes the status of implementing the UICMP and each of its components.

The UICMP and the annual report are organized into the following major program elements:

- **System Management** includes ongoing, programmatic activities (best management practices, or BMPs) that prevent, minimize, or control pollutants.

- **System Monitoring** includes ongoing actions to demonstrate that UICs are operated in a manner that protects groundwater and meets WPCF Permit conditions.

- **Response** describes the process and criteria used to identify and implement actions needed to protect groundwater and meet Permit requirements. Corrective actions address UICs that do not meet WPCF Permit requirements.

This annual report describes the activities that occurred from July 1, 2020, through June 30, 2021 (FY 2020–21) in each of these areas. Key accomplishments are summarized below and described in more detail in the body of the report.

Key Accomplishments

Many City stormwater programs focus on preventing adverse impacts to its stormwater management system. In turn, these programs increase the level of protection for groundwater and surface water and improve the overall health of the City's watersheds. Though some of the key accomplishments summarized below are UIC-specific management actions, many are implemented on a citywide basis and help the City manage stormwater as a whole and not just in the areas where stormwater is discharged through UICs.

System Management

UIC-Specific Management Actions

- Continued ongoing evaluation of City UIC characteristics to update the UIC Registration Database.
- Received and responded to 76 calls regarding spills located within or near an area where UICs are the primary method of stormwater management.
- Continued to educate and train employees on WPCF Permit requirements and groundwater protection, including duty officer training on the Bureau of Environmental Services (BES) spill response hotline and procedures.
- Coordinated with other bureaus on source control, operations and maintenance (OM), spill prevention and response, and development review for UICs and groundwater protection.
- Provided ongoing coordination with other City bureaus that own UICs. Responded to UIC site-specific questions and discussed OM practices.
- Coordinated with the City's Bureau of Development Services on UIC design standards and on the City's review and approval process for UICs registered on private property.
- Cleaned and inspected approximately 1,284 UIC sedimentation and sump manholes.
- Continued evaluation of the review and approval process for private UICs to achieve a more streamlined and consistent registration process for both public and private UICs.

Citywide Management Actions

- Issued 57 enforcement actions in response to pollution complaints for prohibited discharges citywide, with proposed penalties and costs totaling $64,401.
- Conducted 143 groundwater-related inspections in the Columbia South Shore Well Field Wellhead Protection Area (CSSWF WHPA; excluding Gresham and Fairview) of regulated businesses for compliance with the City's *Wellhead Protection Area Reference Manual*.
- Provided technical assistance to 43 businesses affected by the CSSWF Wellhead Protection Program.
- Conducted 404 case reviews for source control measures (citywide) at commercial and industrial properties subject to the City's *Stormwater Management Manual* requirements. Required and installed 890 source control measures at these commercial and industrial properties citywide.
- Conducted and approved 4,046 erosion control-related inspections of private construction sites citywide. (Erosion control inspections resulted in 1,818 enforcement actions and corrections notifications).
- Inspected 164 active public construction projects citywide with erosion control components.
- Involved approximately 1,878 students citywide in activities and presentations that teach the causes and effects of water pollution and how to protect water resources. This represents a drop in participation as a result of school closure and physical distancing protocols that began in March 2020 due to the COVID-19 pandemic.

- Participated in numerous community activities and events involving stormwater management and watershed protection issues and actions. Awarded 10 grants totaling $126,043 to encourage watershed protection, including promoting stormwater infiltration projects.
- Maintained over 20 BMP fact sheets online for commercial and industrial site operators. During FY 2020–21, the most-viewed fact sheets discussed catch basin maintenance (approximately 1,524 views), sand-blasting and painting operations (approximately 757 views), and loading and unloading materials (approximately 322 views).
- Inspected and mapped private stormwater management facilities at 669 properties with 1,699 total facilities for compliance with BES-approved OM agreements. Issued 14 enforcement actions.
- Cleaned approximately 7,648 storm inlets, and repaired 138 storm inlets and inlet leads citywide.
- Swept major arterials six to eight times during the year, residential streets approximately once per year, and downtown core streets three to five times per week.

System Monitoring

- Implemented FY 2020–21 stormwater compliance monitoring. Sampled 15 UICs located in areas of shallow groundwater and tested for pollutants required by the 2015 Permit.
- Compiled and evaluated stormwater data included with this report. There were no FY 2020–21 exceedances of 2015 Permit action levels.

Response

- Evaluated UICs for corrective action response due to database updates, monitoring results, or spill response.
- Evaluated FY 2020–21 data to ensure that no major changes occurred in the City's depth-to-groundwater estimates and evaluated monitoring data to confirm the results of groundwater protectiveness demonstrations conducted during the 2005 Permit term.
- Confirmed no new UICs needed corrective action during FY 2020–21.
- Responded to COVID-19 related challenges, including:
    - When in-person community trash collection events were not possible due to COVID-19, the City provided grant funding to three community partners (ROSE CDC, Unite Oregon, and Trash for Peace) to design and implement waste prevention resources, reaching over 7,500 residents.
    - When in-person public education and outreach activities experienced a decline, Clean Rivers Education offered digital educational resources, such as gathering existing relevant videos, articles, and activities on the web; and the program supported the development of new resources with virtual field experiences and STEM Bites science lessons (for families and teachers).

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1 Introduction

1.1 Overview

The Oregon Department of Environmental Quality (DEQ) renewed the City of Portland's (City's) Water Pollution Control Facilities (WPCF) Permit for Class V Stormwater Underground Injection Control Systems (UICs; Permit No. 102830) on May 19, 2015.[1] As required by this 2015 Permit, the City submitted a UIC Management Plan (UICMP), which DEQ approved on March 24, 2015. The UICMP describes the activities the City will implement throughout the 2015 Permit term (June 1, 2015, to May 31, 2025) to protect groundwater and meet WPCF Permit requirements.

The 2015 Permit also requires the City to submit a UICMP annual report that summarizes the status of implementing the UICMP and each of its components. Accordingly, this annual report provides information about key accomplishments during the sixth fiscal year of permit implementation (July 1, 2020, through June 30, 2021, also known as FY 2020–21) and identifies activities planned for implementation in the next fiscal year where applicable.

Table 1-1 summarizes the 2015 Permit requirements for the annual report and identifies where the requirements are addressed in this annual report.

Table 1-1. Summary of the City's 2015 Permit Annual Report Requirements

Annual Report Requirement (as identified in Schedule B.5 of the 2015 Permit)	**Where Requirement Is Addressed in this Annual Report**
System Monitoring	
Results of stormwater monitoring conducted in accordance with the Stormwater Discharge Monitoring Plan	Appendix D and Section 3.1.1
Spreadsheet of all data from sampled UICs provided in analytical laboratory reports	
Evaluate and report trends in emerging pollutant types and concentrations required by Schedule D, Condition 6 (*fourth year and ninth year annual reports only*)	
Discuss any Schedule A, Table 1, action-level exceedances, and actions taken to address the exceedances	

[1] Information about the City's first WPCF Permit term (2005–2015) can be found in its annual UICMP reports for 2005 through 2015.

System Management	
Description of actions taken to implement the UICMP. *UICMP requirements are as follows:*	Section 2: Key accomplishments are listed for each best management practice (BMP)
Decommissioning activities	Section 2.2.1 and Appendix B
Employee education and public outreach	ET-1, ET-2
Operations and maintenance and inspection protocols	OM-1, OM-2, OM-3, ET-2
Accidental spills/illicit disposal	ET-1, ET-3, PC-1, PC-2
Preventing discharge of stormwater from refueling areas, hazardous/toxic material storage/handling areas, materials storage/ handling areas, or other discharges that may contain pollutants above levels of concern[2]	ET-2, ET-3, OM-3, PC-1, SA-1
Housekeeping practices to protect groundwater quality	ET-2, ET-3, OM-1, OM-2
Facility designs and practices that block discharges to UICs	PC-1, PM-1
Site control measures and BMPs (Schedule A, Condition 7)	OM-1, PC-1
Description of any proposed modifications to the UICMP	Section 1.5
Description of any additional actions taken to manage the UIC system to ensure groundwater protection	Section 2.8
Description of any actions included in the UICMP that were not completed and why	Section 2.9
Identification of UICs closed, retrofitted, or installed during the year	Section 2.2.1 and Appendix B
Future (in the next year) plans to install, modify, convert, or close any UIC	Section 2.7
Changes to key personnel or areas of responsibilities for the permit	Section 1.4.2
Identification of any newly discovered UICs	Section 2.2.1 and Appendix B
Adaptive Management	Section 2.10

[2] The Systemwide Assessment (2015) did not identify any City-owned or -operated UICs located in refueling areas, hazardous or toxic material storage or handling areas, or materials storage or handling areas.

Response	
Progress reporting on corrective actions	Section 4
Report of all instances of noncompliance and other permit violations that are not reported per Schedule F.4.e. (compliance schedule) or F.4.f (24-hour and 5-day reporting)	Section 4.5

1.2 Overview of the UICMP

The UICMP meets the requirements of the City's 2015 UIC WPCF Permit. These requirements specify that the City prepare and implement a written UICMP that includes a systemwide assessment, system controls, monitoring, and a plan for recordkeeping and reporting.

The UICMP is organized into the following three major elements:

- **System Management** includes ongoing, programmatic activities (best management practices, or BMPs) that prevent, minimize, or control pollutants before they discharge to a UIC. BMPs include structural, nonstructural, and institutional controls. They are organized into the following five categories:
    - Systemwide Assessment
    - Pollution Control
    - Education and Training
    - Operations and Maintenance
    - Program Management
- **System Monitoring** includes ongoing actions to demonstrate that UICs are operated in a manner that protects groundwater and meets WPCF Permit conditions.
- **Response** uses data and information from system monitoring and system management to identify any UICs that may be a threat to groundwater protection and thus are out of compliance with the Permit. When a UIC is identified as such, a corrective action is required to evaluate the threat and may result in either further action to bring the UIC into compliance or closure of the UIC. The objective of the response is to improve or correct conditions at a UIC or group of UICs.

1.3 Legal Authority

The Charter of the City of Portland grants broad authority to the City "to exercise any power or authority granted to the City by statute… and [provides that the City] may do any other act necessary or appropriate to carry out such authority, or exercise any other power implied by the

specific power granted." Such authority includes, among other things, "all powers commonly known as the police power to the same extent as the State of Oregon has or could exercise said power… and to make and enforce… all necessary or appropriate water, local, police, sanitary and safety laws and regulations" (Chapter 2-105, *Charter of the City of Portland, Oregon*).

In addition, the Portland City Code addresses the regulation of stormwater discharges, building requirements, zoning, erosion and sediment control, and public improvements in Chapters 10, 17, 24, 29, and 33, respectively. Chapters 17.38 and 17.39 specifically address Drainage and Water Quality and Stormwater Discharges, respectively.

1.4 UIC Program Staff

1.4.1 Key Roles and Responsibilities

The 2015 Permit designates the Bureau of Environmental Services (BES) as the bureau responsible for implementing the Permit and for identifying and managing the regulatory and technical components of the UIC Program citywide and across bureaus. Key staff roles and responsibilities for the UIC Program are summarized in the UICMP.

1.4.2 Personnel Changes

During FY 2019–20, BES initiated a reorganization of its internal groups and divisions. Though the immediate UIC Program staff did not change, there were some changes to upper-level management. Prior to 2019, the UIC Program was part of the Stormwater Regulatory team that reported to Barb Adkins and was part of the Pollution Prevention Services Group. In this group, the UIC Program staff reported to Matt Criblez, Regulatory Division manager, and Marveita Redding, Pollution Prevention Services group manager. As part of the reorganization, the UIC Program and the Stormwater Regulatory Strategy team under Barb Adkins was moved to a newly developed Strategy Group. The UIC Program and Stormwater Regulatory Strategy team now report to Kaitlin Lovell, who oversees the Regulatory Strategy and Remediation Division, and Kristen Acock, who is the Strategy group manager. The new organizational chart for BES, as well as the organizational chart for the new Strategy group, are provided in Appendix A.

1.5 Proposed Changes to the UICMP

There are no proposed changes to the UICMP at this time.

1.6 City Budget and Funding

The City has invested more than $2 billion in stormwater management services and facilities over the past 26 years.[3] The revenue requirements for FY 2020–21 were allocated as described in Table 1-2.

[3] The 26-year time period reflects the implementation period of the City's National Pollutant Discharge Elimination System permit.

Table 1-2: Stormwater Program Expenditures

Major Program Category	Revenue Requirements (*millions*)		Percent Change
	2010–11	2020–21	
Enforcement and Development Review	$5.8	$17.5	202%
Watershed Program and Habitat Restoration	$18.3	$24.8	35%
Facilities Operations and Maintenance	$21.0	$29.1	39%
Capital Improvements*	$45.8	$68.2	49%
Total Expenditures	**$90.9**	**$139.6**	**54%**

* Includes debt service, facilities planning and engineering, construction engineering, and construction contracts.

In FY 2021–22, the City plans to invest $142.2 million in stormwater management services and facilities. Direct monthly user fees will pay for 85 percent of these investments.

Stormwater Management Charges

Portland City Council approves revised stormwater system monthly user fees at the start of each fiscal year. Monthly system user fees are adjusted to reflect operating, maintenance, and capital costs of the City's sanitary sewer and drainage system. The rate adjustments are based upon cost-of-service principles, ensuring equity by charging ratepayers according to the amount of sewer and drainage service they use.

Table 1-3 reports the change in the monthly single-family stormwater management charge and in the residential and nonresidential monthly stormwater rate per 1,000 square feet of impervious area, between 2010 and 2021.

Table 1-3. Stormwater Management Charges and Rates

Stormwater Management Monthly Charges and Rates	2010–11	2020–21	Percent Change
Single-family residential charge	$21.79	$30.05	38%
Residential rate ($/1,000 ft^2 impervious area)	$9.08	$12.52	38%
Nonresidential rate ($/1,000 ft^2 impervious area)	$9.66	$13.10	36%

Stormwater System Development Charges

In addition to stormwater system monthly user fees, Portland City Council also approves revised stormwater system development charges (SDCs) for new development and significant redevelopment at the start of each fiscal year.

The methodology for assessing SDCs includes two components. The first component, onsite runoff management, represents the charge for stormwater facilities that handle runoff from individual properties. For FY 2020–21, this onsite portion is assessed based on $243 per 1,000 square feet of impervious area (see Table 1-4). Riparian properties that drain directly to the Columbia Slough, Columbia River, or Willamette River are eligible for 100 percent in credit for the onsite portion of the fee.

The second component, public right-of-way (ROW) runoff management, represents the cost of stormwater facilities that handle runoff from public ROWs. This portion is assessed based on the use of the transportation system, using road frontage and vehicle trips associated with the

proposed development to allocate the costs. For FY 2020–21, the rates were $7.76 per linear foot and $4.28 per vehicle trip.

Discounts may be granted only for the "onsite" part of the charge for facilities constructed as part of new development. Discounts range from 80 percent for retention of the 100-year event to no discount for control of the 10-year storm.

Table 1-4. Stormwater System Development Charges (SDCs) and Rates

SDC Charges and Rates	2010–11	2020–21	Percent Change
Onsite portion ($/1,000 ft^2)	$154.00	$243.00	58%
Right-of-way (ROW) portion ($/linear foot of frontage)	$4.78	$7.76	62%
ROW portion ($/vehicle trips)	$2.51	$4.28	71%

1.7 Organization of the Annual Report

The remainder of this annual report contains the following sections:

Section 2: System Management identifies citywide BMPs implemented to prevent, minimize, and control pollutants prior to infiltration. Where relevant, it also identifies projected main activities for FY 2021–22. The following appendices provide additional detail about System Management activities:

- **Appendix A** is the BES organizational chart and the BES Strategy Group organizational chart.
- **Appendix B** identifies UICs added and removed from service during FY 2020–21 (including closure reports for decommissioned UICs, provided on a separate CD).
- **Appendix C** identifies spills that occurred within areas serviced by UICs.

Section 3: System Monitoring summarizes compliance monitoring. **Appendix D** presents the annual results of the City's 2015 Permit-required UIC monitoring.

Section 4: Response identifies response actions conducted during FY 2020–21 and those projected for next fiscal year (FY 2021–22).

2 System Management

2.1 Overview

The System Management program element involves a series of actions, called BMPs, that serve to prevent, minimize, and control pollutants in stormwater prior to discharge to a UIC. These BMPs are organized into the following five general categories and are applied to the entire UIC system on an ongoing basis:

- Systemwide Assessment
- Pollution Control
- Education and Training
- Operations and Maintenance
- Program Management

Although this report is focused on the City's management of its UIC system, it is important to understand that many programs detailed in this section provide stormwater management benefits (improved water quality, groundwater and stormwater protection, and increases in overall watershed health) across the entire City and not just to areas that discharge stormwater to UICs.

2.2 Systemwide Assessment (SA)

The purpose of the SA BMP is to identify, evaluate, track, and report on spatial and physical characteristics of existing and new City-owned and -operated UICs. This enables the City to evaluate whether drainage entering individual UICs may pose a risk to groundwater, as well as to overall watershed health, as a result of these characteristics. Ongoing activities necessary to provide stormwater drainage infrastructure include the registration and construction of new UICs, replacement of existing UICs, and decommissioning of existing UICs. This BMP category focuses on updating information related to the location and physical characteristics of existing and new UICs. It fulfills two WPCF Permit requirements:

- Develop and implement a comprehensive UIC Registration Database.
- Evaluate UICs for factors that could present a risk to groundwater quality.

The 2015 Permit requires the SA to be revised at the end of the fifth year of the permit term. A review was completed and the revised SA was submitted as part of the FY 2019–20 annual UIC report.

SA-1: Inventory and Assess City-Owned UICs

2.2.1 SA-1: Key Accomplishments

- Submitted UIC Registration Database updates to DEQ with this report. All updated UIC database information will be posted by November 1, 2021, to the City's FTP site, where it can be accessed by DEQ. The files provide information on all new and removed UIC as well as any attribute changes to existing information currently included in the UIC database.

- Identified 46 new public UIC[4] records in UIC Registration Database updates. These UIC records are listed in Appendix B. Two UIC records are footnoted and described as follows:

    - One very old UIC was added back into the database. UIC ADV589 (DEQ ID 10102-1457) was originally identified for abandonment in 2001 (prior to the first 2005 permit) and subsequently removed from the UIC database. Upon further investigation by field staff, it was determined that the UIC was never abandoned and has remained in service. The location is added back into the UIC database with its original number designation.

    - One existing surface infiltration facility was retrofitted as a UIC with a separation distance of 0 feet and added to the database. UIC APJ714 is not a new installation. It was originally designed as a surface infiltration facility located at Waterfront Park. Due to impacts from homeless activity at the park, the location was retrofitted to a UIC with a sedimentation maintenance hole for pretreatment. The location receives roof drainage from an adjacent pavilion and does not drain any portion of the ROW.

- Removed or changed the status[5] of nine public UIC records in UIC Registration Database updates. These records are listed in Appendix B.

- Decommissioned 13 UIC during FY 2020–21. An additional four UICs were found to have been removed in previous years, but notifications were sent to DEQ in FY 2020–21. Closure reports are included on a CD as part of Appendix B.

- Other changes to database records made as part of the database update include the following:

Updates	Database Record
22	Maintenance period
41	Operational status
3	Addresses
49	Latitude
49	Longitude
47	Distance to the nearest water well
53	Distance to the nearest wetland
48	Distance to the nearest surface water
0	Size of impervious area

[4] Some UICs identified as new facilities may not be recently discovered or newly constructed UICs. UICs may be identified as new due to database management. For example, correcting a database identifier for a facility from "sedimentation manhole" to "UIC" would make the UIC appear to be a new sump in the BES database, even though the facility itself is not new.

[5] The reasons for removal may include identification as not existing through field investigations, change in ownership, or data error. The reason for changing status (e.g., from "active" to "closed") is UIC decommissioning.

Updates	Database Record
1309 [6]	UIC pretreatment
62	Installation date
31	UIC depth and diameter
32	Depth-to-groundwater
10,070	Date updated
0	Discharge rate

2.3 Pollution Control (PC)

Activities and practices such as spills, illegal disposal, improper site management, and erosion can increase the discharge of pollutants to public UICs, with potential negative impacts to groundwater. This BMP category focuses on reducing such pollutant discharges from both public and private sites and activities. It fulfills two 2015 Permit requirements:

- Implement spill prevention and pollution control.
- Identify activities conducted on commercial/industrial properties that may result in a violation of action levels in stormwater discharging to a public UIC.

PC-1: Identify, prevent, minimize, and control activities that can increase pollutant discharges to public UICs. These activities include illegal dumping of solid and liquid wastes (such as paint, used motor oil, or solvents) into catch basins; accidental or unplanned discharges (such as car accidents and firefighting activities); site uses that may generate pollutants; and construction site activities.

2.3.1 PC-1: Key Accomplishments

Spill Prevention and Pollution Control

- Continued to respond to pollution complaints citywide and issued enforcement actions for violations of Portland City Code 17.39 for prohibited discharges. During FY 2020–21, issued 57 enforcement actions citywide, with proposed penalties and costs totaling $64,401.

- Continued to implement City programs, which included improving ongoing citywide pollution control activities to identify and control activities on private properties and commercial/industrial properties where site activities (e.g., illegal disposal, improper storage and handling of materials, and erosion) could result in a violation of action levels in stormwater discharging to a UIC.

Spill Protection-Citizen Response (SPCR) Team

The SPCR team responds immediately to spill emergencies and investigates pollution complaints regarding spills, illegal disposal, improper site management, and erosion. The team supports the entire City, including areas that use UICs for stormwater management. Citizens can call in reports on a dedicated spill response hotline 7 days a week, and staff is available 24 hours a day

[6] This value captures changes to the way pretreatment is reported and not specifically to whether pretreatment was added.

to respond to spills, slicks, and other suspicious or inappropriate discharges. The program refers problems to other local or state agencies for response and enforcement as appropriate. The SPCR team also provides education and technical assistance to property owners to improve site management and address work practices that may impact stormwater discharges (see ET-3, Education and Training, Key Accomplishments).

The SPCR team received 76 calls regarding spills located within or near an area where UICs are the primary method for stormwater disposal. Appendix C shows this information in table format, including date, release type, volume, location, identification of the closest City-owned UIC catch basin, and if the spill entered a City-owned UIC.

Of the 76 reported spills, nine reached a UIC system. All nine UICs were inspected and cleaned. It was determined that, once cleaned, the volumes of sewage, auto fluids, and turbid water discharges sent to the UIC systems did not pose a threat to groundwater, and the cases were closed.

Follow-up activities were conducted regarding a release that occurred in 2018 at Starks Auto Shop on 5330 N Columbia Court. In FY 2019–20, the City worked with Starks to develop a stormwater pollution control plan that was accepted in June 2020. The City continues to inspect and review site management activities in accordance with the pollution control plan.

Regional Spill Response Committee

SPCR participates in the Regional Spill Response Committee, which solicits input about new participants and meeting topics, and the committee increases coordination with emergency responders and planners. The Regional Spill Response Committee typically includes representatives from various City bureaus, DEQ, the U.S. Coast Guard, Clackamas County Water Environment Services, the Port of Portland, and the City of Gresham. During FY 2020–21, the committee did not convene due to a combination of ongoing COVID-19 pandemic and SPCR's prioritization of backlogged enforcement actions.

Columbia South Shore Well Field Wellhead Protection Program

The City provides outreach and technical assistance to businesses and residents in the Columbia South Shore Well Field Wellhead Protection Area (CSSWF WHPA) to help them comply with local drinking water source protection regulations. These regulations are designed to prevent contamination of groundwater used as the drinking water source. During FY 2020–21, the City continued to implement the CSSWF Wellhead Protection Program and reference manual for the City of Portland (also in effect in Gresham and Fairview) within the CSSWF WHPA overlay zone. Businesses in the area are required to implement structural and operational BMPs, such as mandatory spill-containment BMPs and facility inspections, to manage harmful chemicals, reduce the occurrence of spills, and minimize spill impacts. The program also includes education and outreach efforts to affected residents and businesses and one-on-one technical assistance to help businesses comply with program requirements (See ET-3).

Key accomplishments include the following:

- Conducted 143 groundwater-related site inspections in the CSSWF WHPA (excluding Gresham and Fairview) of regulated businesses for compliance with the City's *Wellhead Protection Area Reference Manual*.

- Provided a virtual groundwater protection workshop, including spill control basics, for approximately 24 businesses.

Source Control Measures

BES's Development Planning and Pollution Prevention Plan Review teams conduct land use and pollution source control permit reviews associated with commercial and industrial properties subject to requirements in the City's *Source Control Manual* (SCM). The SCM (formerly part of the *Stormwater Management Manual* [SWMM]) requires storm and sanitary source controls for site uses and characteristics that generate, or have the potential to generate, specific pollutants of concern. These requirements apply to new development and post-development activities that are considered "high-risk" or pollutant-generating. The manual identifies structural, operational, and treatment BMPs designed to prevent or control conventional and toxic pollutants in stormwater, groundwater, and wastewater. In the Spring 2021, BES hired a new Toxics Reduction Program Manager to oversee the SCM and develop a program to inspect and ensure proper maintenance of required BMPs.

Key accomplishments include the following:

- Conducted 404 case reviews[7] for source control measures at commercial and industrial properties subject to SWMM requirements.

- Required and installed 890 source control measures at these commercial and industrial properties.[8] These numbers are citywide and are not limited to areas draining to UICs. (Note: When the SWMM is applied, drainage from high-risk areas is prohibited from entering public UICs, and stormwater is managed onsite.)

- Continued to implement the City's 2020 SWMM and 2020 SCM.

    - The City completed revisions of the SCM and the SWMM. Both versions became effective on December 14, 2020.[9] Changes to the SCM include using monitoring to evaluate if infiltration is feasible. Changes to the SWMM are focused on updating facility BMP details, reworking engineering assumptions used to size facilities, and increasing flow control.

    - For projects with 500 square feet or more impervious area, onsite infiltration is required to the maximum extent feasible. The SWMM includes a BMP hierarchy

[7] This includes 230 land use reviews and 174 contaminated site reviews.

[8] The City reviews and requires source control measures for some projects that never materialize due to development issues, project financing, etc. This metric reflects projects that eventually received final building and occupancy permits and, therefore, were actually constructed. The number includes properties that re-enter the permitting process from previous years, such as redevelopment or tenant improvement projects.

[9] 2020 Source Control Manual | Portland.gov and 2020 Stormwater Management Manual | Portland.gov

to promote infiltration-based and vegetated facility implementation. UICs constructed in the public ROW or on private streets must have a sedimentation manhole. UICs in driveways or small parking lots must have a lynch-style catch basin. If these are not possible, a vegetated stormwater management facility is required for pollution reduction.

- If onsite infiltration is not feasible, onsite stormwater management that overflows to an offsite discharge location is required. City-owned UICs are not an approved discharge point for offsite drainage from private sites. Stormwater discharged offsite must reduce pollutants or concern (in those watersheds with Total Maximum Daily Loads or that are listed on DEQ's 303d list of impaired waters) and for total suspended solids.

Prevention of Illegal Disposal

To help prevent illegal dumping, the City continued to implement curbside collection services (residential garbage, recycling, yard debris, and food scrap collection). However, the City's partnership with the Neighborhood Coalition Offices and Metro to administer community collection events concluded June 30, 2020, because in-person events were not possible due to COVID-19. To offset this change, the City provided grant funding to three community partners (ROSE CDC, Unite Oregon, and Trash for Peace) to design and implement waste prevention resources, reaching over 7,500 residents. In addition, the Bureau of Planning and Sustainability (BPS) continued to work with SOLVE to help community groups organize litter pickup activities. Events are posted online at https://www.solveoregon.org/detrashpdx.

PC-2: Focus on erosion control during construction activities, on both public and private sites.

2.3.2 PC-2: Key Accomplishments

The City has an erosion control program that applies to both public and private construction projects. Portland City Code Title 10 and the City's *Erosion and Sediment Control Manual* outline requirements and provide technical guidance for temporary and permanent erosion prevention and for construction-related sediment and pollution control. Program requirements apply to all ground-disturbing activities, regardless of whether a development permit is required, unless such activities are otherwise exempted by Portland City Code. As part of its comprehensive plan to manage stormwater, protect water quality, and promote watershed health, the City implemented the following erosion control actions citywide:

- Conducted 4,046 erosion control-related inspections of private construction sites. This number includes all inspections (200, 205, 210, and site consultations).

- Inspected private development sites with qualifying ground disturbance areas for temporary and permanent erosion control measures at the beginning and near or at completion of the project. At interim checks conducted during regular building inspections (or as needed), the inspector noted any erosion control deficiencies, and the site operator was required to implement corrective action.

- Issued a combined total of 1,818 enforcement actions and correction notifications (i.e., stop-work orders, correction notices, and notices of violation) as a result of erosion control inspections.

- Inspected 164 active public construction projects with erosion control components. In general, public sites are inspected daily during construction. These include Portland Bureau of Transportation (PBOT), BES, Portland Water Bureau (PWB), and Portland Parks and Recreation (PP&R) projects.

- Additional erosion control activities and accomplishments in FY 2020–21 included the following:

    - The Bureau of Development Services (BDS) and BES continued to evaluate and update the *Erosion and Sediment Control Manual*. This process includes a review and update of the existing manual's structure, BMPs, and usability, as well as revisions to Title 10 and the development of a new Enforcement Code. This work is expected to be completed next year.

    - PBOT provided erosion control program compliance and reporting at preconstruction conferences for 39 PBOT capital improvement projects.

2.4 Education and Training (ET)

The purpose of this Education and Training (ET) BMP category is to inform and educate the public; businesses; and City employees about UICs, groundwater protection, and WPCF Permit conditions. It is also used to promote pollution prevention and source control.

ET-1: Provide education and outreach to members of the public living and working in areas served by UICs. Implement public information, education, involvement, and stewardship activities that will raise awareness, foster community stewardship, and promote pollution prevention, stormwater and groundwater management, and environmental protection.

2.4.1 ET-1: Key Accomplishments

As part of its comprehensive plan to manage stormwater, protect water quality, and promote watershed health, the City has implemented the following actions citywide.

Clean Rivers Education Program

- Reached 1,064 students (grades K–12) with classroom programs that provide hands-on, interactive science education about stormwater and other environmental issues. Examples included:

    - *Watershed Awareness* class, which focuses on common nonpoint sources of pollution and pollution prevention.

    - *Stormwater - Soak It Up*, a 75-minute classroom program about stormwater runoff and green infrastructure for students in grades 4–12.

- Involved 88 students (K–12) in education field programs that offer watershed investigations and field assessments, stormwater tours, career awareness, and green infrastructure tours. Examples included:

    - Green infrastructure tours of bioswales, stormwater planters, ecoroofs, areas with porous pavement, and creative downspout disconnections. Students learned how these solutions provide stormwater infiltration to reduce volume, while plants and soil filter pollutants and improve water quality.

    - Career education classroom programs and field trips, such as tours of the City's Water Pollution Control Laboratory, for middle- and high-school students.

- Worked with Zenger Farm, located on City property, to provide classroom and field education to 726 students focused on stormwater management, watershed health, environmental stewardship, and sustainability lessons.

An estimated 1,878 students participated in these activities citywide. This represents a drop in participation as a result of school closure and physical distancing protocols that began in March 2020 due to the COVID-19 pandemic. However, in response to declining in-person activities, Clean Rivers Education offered digital educational resources, including:

- Curated existing videos, articles, and activities, including information on aquifers and groundwater. The webpage received more than 7,500 external hits.

- Supported development of new resources including Portland State University's capstone virtual field experiences for four Portland natural areas; and two digital STEM Bites science lessons (for families and teachers) for the Oregon STEM Hub network and the Portland Metro STEM Partnership.

Stewardship Activities and Community Events

- Sponsored, cosponsored, funded, and participated in numerous community activities and events throughout the City's watersheds that involved stormwater management and watershed protection issues and actions (e.g., workshops, educational presentation and activities, training, and restoration projects). FY 2020–21 examples include the following:

    - Awarded 10 stewardship grants totaling $126,043. The program generally provides up to $12,000 per project to citizens and organizations to encourage watershed protection in Portland. Two awards were given for projects that promoted stormwater infiltration: to Depave for two schools in the Willamette watershed, and to Verde for rain gardens in the Columbia Slough watershed. The Verde project in the Cully neighborhood received $22,463 in grant funds.

- Coordinated with Columbia Slough Watershed Council to provide Slough 101, Groundwater 101, Explorando El Columbia Slough, Canoe the Slough, and Columbia Slough Regatta outreach events. Fifty-nine events were attended by 1,112 participants and 148 volunteers.

- Coordinated with Johnson Creek Watershed Council and community partners on creek clean-up, student service-learning projects, maintenance, and other events. Thirty-eight events were attended by 143 participants and 402 volunteers.

- Continued to educate and recruit volunteer Green Street Stewards to look after green infrastructure. Programs provided education, training, and tours to residents, including low-income communities and communities of color, and new BES staff. In FY 2020–21, 7 events were attended by 417 participants and 87 volunteers (citywide).

Stormwater-Related Information

- Included four different inserts on various topics in City water/sewer bills that were mailed to approximately 175,000 customers:

    - Summer 2020: How to register for Clean River Rewards, the discount program that helps property owners manage rain with green solutions.

    - Fall 2020: All about your bill – a breakdown of how your bill pays for sewer, stormwater, and water services.

    - Winter 2020/21: Take care of your home plumbing, and reminders to pick up pet waste.

    - Spring 2021: Drinking water treatment upgrades and adding native plants to your garden.

- Updated and posted fact sheets, brochures, and educational materials on the BES website:

    - "Clean River Rewards" stormwater discount program (52,922 page views)

    - Treebate incentives for planting yard trees (24,919 page views)

    - Green Street Stewards Program (38,541 views)

- Distributed a variety of educational materials at community meetings and events.

Eco-Logical Business Program

- Continued to work with the Regional Pollution Prevention Outreach Team (P2O Team), and the Eco-Logical Business Program (EcoBiz). EcoBiz program members certify automotive and landscaping businesses in the Portland metropolitan region to ensure sustainable and environmental practices. In FY 2020–21, the number of certifications and recertifications

was lower due to delays resulting from COVID-19. The City also funded a limited-term staff position to expand EcoBiz awareness and business participation, and hired a new toxics coordinator (Cindy Ryals) to help oversee the EcoBiz program. Due to COVID 19, activities were severely curtailed for the reporting period. In addition, requirements for certification by landscaping businesses were under review and revision by the P2O Team for much of the reporting period. As a result, activities have been paused until new requirements are finalized, which is anticipated in early fall of 2021. Prior to the pause, 20 automotive businesses were in the process of new certification or recertification. Four automotive site visits conducted during FY 2020–21 for technical assistance helped businesses with the following types of activities:

- Reduce and eliminate pollutants such as volatile organic compounds and chlorinated solvents
- Prevent spills by adding secondary containment for tanks over 55 gallons
- Provide employee spill response trainings
- Properly manage and dispose of hazardous materials
- Conserve water in the office, shop, and on managed landscaped areas
- Wash vehicles and equipment using environmentally responsible systems
- Adopt sustainable purchasing and inventory policies

Alternative Transportation

PBOT promotes carpooling, public transportation, and alternative commuting strategies to reduce emissions of toxic pollutants and to support climate change prevention measures. Due to COVID-19, various activities (i.e., May Walk + Roll Challenge Month, 2020 Sunday Parkways) did not occur as they did in previous years. Specific activities during FY 2020–21 include the following:

- Continued the Drive Less Connect program to match carpooling partners and provide discounted carpool parking.
- Continued to provide Bike and Walk maps covering Portland, including new, bilingual English/Spanish editions of the Northwest/Downtown and Southeast Bike/Walk Maps and a mobile-friendly online version at PortlandBikeMap.com.
- Coordinated the Safe Routes to School program, which included over 100 schools in the City of Portland.
- Converted Sunday Parkways to a virtual event, and introduced “Friday Transportation Highlights”, and “Choose Your Own Adventure,” including a citywide scavenger hunt. During the summer of 2021, 542 people participated in the scavenger hunt, and 162,813 households received direct mail highlighting these resources for staying active and using alternative transportation modes.

- Increased the number of bikes in Portland's bike share system (BIKETOWN) to 1,500, replaced the entire fleet with electric pedal-assist bicycles, and expanded its service area to 32 square miles, adding many East Portland neighborhoods. Total trips for FY 2020–21 declined; however, summer ridership returned to 2019 pre-pandemic levels.
- Continued the Transportation Wallet Program in the Northwest Parking District and Central Eastside Parking District to provide passes and credits for transit, streetcar, bike sharing, and scooters. It is an effective, low-cost strategy to reduce parking demand and congestion by incentivizing transit use, biking, walking, and scooting. In 2020, there were 1,506 Transportation Wallets for the two parking districts.

ET-2: Promote knowledge of WPCF Permit conditions and requirements for City staff responsible for implementing UIC Program elements and BMPs, and ensure that City practices related to UICs are protective of groundwater.

2.4.2 ET-2: Key Accomplishments

- Continued to educate employees and develop training on groundwater protection and WPCF Permit requirements, including duty officer training on the BES spill response hotline and specific duty officer procedures.
- Coordinated with other bureaus on source control, operations and maintenance, spill prevention and response, and development review for UICs and groundwater protection.
- Provided ongoing coordination with bureaus that own UICs. Responded to UIC site-specific questions and discussed operations and maintenance practices.
- Coordinated with BDS development review staff on UIC design standards and on the review and approval process for UICs registered on private property.

ET-3: Provide outreach and technical assistance to businesses to reduce and control pollutant discharges from industrial and commercial facilities to protect groundwater quality.

2.4.3 ET-3: Key Accomplishments

As part of its comprehensive plan to manage stormwater, protect water quality, and promote watershed health, the City has implemented the following actions citywide.

Maintenance Inspection Program

The Maintenance Inspection Program (MIP) ensures that property owners follow site-specific, BES-approved operations and maintenance agreements. Program staff conduct inspections, provide technical assistance to property owners on the operations and maintenance of their onsite stormwater management facilities (SMFs), and provide guidance on pollution prevention BMPs for site activities that may impact the functionality of the SMFs. In September 2019, the MIP changed the method of retrieving new operations and maintenance agreements to include only

finalized permits, to more accurately track the number of SMFs installed on private property. The program also collects information on SMF deficiencies and corrective actions taken to address them.

The COVID-19 pandemic resulted in a pause in development activities and new permit issuance during FY 2020–21. MIP activities in FY 2020–21 included the following:

- Inspected 669 properties for OM requirements of 1,699 associated private SMFs.
- Recorded 205 OM Agreements for 485 SMFs managing 112 acres of impervious surface.
- Tracked and mapped SMFs and SMF attributes.
- Issued 14 enforcement actions (i.e., warning notices, notices of violation, and compliance orders).

CSSWF Wellhead Protection Program

The CSSWF Wellhead Protection Program provided education and outreach to affected residents and businesses to help them comply with local drinking water source protection requirements of the program, in conjunction with the Columbia Corridor Association and Columbia Slough Watershed Council. Activities in FY 2020–21 included the following:

- Provided technical assistance to 43 business, representing a slight increase from FY 2019–20.
- Distributed six free spill kits, four spill-containment pallets, and nine spill response signs.
- Maintained the association and City of Portland webpages on the Groundwater Protection Program with information for businesses and residents.
- Launched a multi-lingual, website version of the Aquifer Adventure environmental education event to continue delivering water protection messaging online rather than during in-person events.

Sustainability at Work

This reporting year is the final year for the City's Sustainability at Work program. In FY 2020–21, this program continued to assist Portland businesses with resources and information to help them "green" their operations, including managing stormwater and preventing pollution. The program conducted the following activities:

- Conducted 184 remote site visits at businesses, providing assistance across a broad range of topics, including water conservation, stormwater management, hazardous waste, energy efficiency, renewable power, alternative transportation, and waste prevention.
- Administered Sustainability at Work certifications, recognizing businesses that have taken measurable steps to conserve resources and reduce their greenhouse gas emissions. In FY

2020–21, the program completed two new certifications and renewals. At the sunset of the program, 200 businesses were certified.

Industrial Stormwater Program

Twenty BMP fact sheets are posted on BES's Industrial Stormwater Program website, which provides technical assistance for the public. Information is targeted to commercial and industrial site operators, helping to educate and assist in the prevention of spills and the protection of groundwater and surface water. During FY 2020–21, the most-viewed BMP materials continue to be related to the following topics:

- Catch basin maintenance (approximately 1,524 views)
- Sand-blasting and painting operations (approximately 757 views)
- Loading and unloading materials (approximately 322 views)

Other BMP materials included information on dewatering activities, loading and unloading materials, and outside container storage and waste disposal.

Erosion Control Program

The City's erosion control program applies to both public and private construction projects. Portland City Code Title 10 and the City's *Erosion and Sediment Control Manual* outlines requirements and provides technical guidance for temporary and permanent erosion prevention, sediment control, and control of other site development activities that can cause pollution during the construction process. The City's erosion control requirements apply to all ground-disturbing activities, regardless of whether a development permit is required, unless such activities are otherwise exempted by City Code.

The City continues to provide educational training to staff on operation, maintenance, and construction practices to protect water quality. The COVID-19 pandemic resulted in cancellation of the annual construction inspector training for BES staff. BDS staff continue to pursue continuing education credits for current erosion control certifications. One BDS staff member pursued a professional erosion control certification.

2.5 Operations and Maintenance (OM)

OM BMPs for City UICs are important to both remove pollutants from UICs (e.g., UIC cleaning) and prevent pollutant discharges into UICs (e.g., street sweeping and catch basin cleaning). This BMP category identifies OM practices both for UICs located in City-managed ROWs and for UICs on other City-owned property.

OM-1: Address the inspection, maintenance, cleaning, and repair of City-owned UICs in public ROWs.

2.5.1 OM-1: Key Accomplishments

UIC Inspection, Maintenance, Cleaning and Repair

- Cleaned and inspected approximately 7,648 inlets and 2,884 trash racks[10] (citywide).
- Cleaned and inspected 1,284 UIC sedimentation and sump manholes.
- Repaired 138 storm inlets and inlet leads (citywide).

OM-2: Address operation and maintenance activities that are conducted in public ROWs and may affect City-owned UICs.

2.5.2 OM-2: Key Accomplishments

Street Sweeping

The City implements practices in and around ROWs to prevent and limit pollutant discharges, such as street sweeping, spill control, erosion control, and material testing, and the City also conducts leaf removal. PBOT is the primary bureau responsible for maintaining the City's roads and other transportation-related facilities and infrastructure. The PBOT *Maintenance Environmental Handbook* is a guide provided to PBOT Maintenance and Operations (PBOT-MO) field crews to ensure they have easily accessible information on waste handling, erosion control measures, spill control and prevention practices, and vehicle washing.

- Cleaned over 4,000 lane miles of curbed streets in the City. The City swept major arterials six to eight times in FY 2020–21, residential streets approximately once, and downtown core streets three to five times per week. Street sweeping removed 3,324 tons of sediment and material from City roadways in FY 2020–21.
- Continued to implement a street leaf removal program in 30 leaf service areas (areas that have streets lined with large, mature trees). Under the program, PBOT schedules and implements one or two leaf collection days per zone. The program removed 8,436 tons of leaf material in FY 2020–21.

PBOT-MO BMPs

- Continued to implement BMPs within the ROW to protect water quality, including:
    - Following the Oregon Department of Transportation Routine Road Maintenance Water Quality and Habitat Guide

[10] This value represents the number of trash rack inspections. Trash racks are cleaned and cleared of debris at the time of inspection, if needed. The true cleaning number is likely much lower.

- Controlling erosion during all sediment-disturbing activities
- Using cured-in-place pipe technology when replacing stormwater piping in the ROW to reduce the amount of excavation needed
- Using low-disturbance sign installation methods to avoid or minimize digging
- Using mild, solvent-free cleaners to clean signs
- Using a UV-protection and anti-graffiti coating on new street signs to reduce the need for chemical cleaners
- Monitoring weather conditions during asphalt grinding to avoid runoff
- Hand-applying asphalt where necessary to prevent these materials from entering the storm drain system

- Coordinated with BES on environmentally responsible practices for use of roadway anti-icers and deicers, including road salt. In FY 2020–21, PBOT used approximately 536 cubic yards of salt throughout the city in response to snow and ice events. Due to COVID-19 and technical constraints/staffing limitations for crews, salt use and application by region (e.g., Southwest Portland, Northwest Portland, Southeast Portland, and North/Northeast Portland) were not tracked as previously reported. Deicing procedures and BMPs were integrated into overall winter road maintenance activities, including adaptive management of priority route identification and evaluation of application rates. All crews directly responsible for winter maintenance activities are trained in Pacific NW Snowfighters Association BMPs prior to the winter season start in October.

- Continued to use the 2011 PBOT *Maintenance Environmental Handbook* for street maintenance that includes guidance to ensure that field crews have easily accessible information on waste handling, erosion control measures, spill control and prevention practices, and vehicle washing.

OM-3: Address OM of UICs <u>on other City property</u>, as well as good housekeeping practices that may affect UICs.

2.5.3 OM-3: Key Accomplishments

- Continued discussions with other City bureaus to standardize OM procedures for UICs on City property, based on the OM templates established in the City's SWMM.

- Maintained the program that requires PWB to submit requests to BES for potable water discharges from the flow tests of hydrants and tank and reservoir drains. Discharges are approved on a case-by-case basis with a letter of authorization. The authorization requires DEQ/BES BMPs to reduce the impacts of flow rate, volume, and suspended solids from these activities, in addition to the state guidelines for chlorinated discharges. A report is required for each discharge to track volume and respond to any complaints.

- The City's Procurement Services engages in green purchasing best practices to spend public funds on goods and services that minimize negative impacts on human health and the environment. In FY 2020–21, the program included environmentally preferable product and service specifications in City solicitations and contracts, such as the use of untreated wood for boardwalks and similar exterior wood features. Additional specifications include zero-sediment runoff at construction sites and onsite stormwater management (ecoroofs, rain gardens, etc.).

- The City continues to incorporate electric and other low-carbon fuel vehicles into the City fleet as part of its Climate Action Plan and sustainability strategies. The City currently has 155 electric or plug-in hybrid sedan vehicles, representing approximately 38 percent of the sedan vehicle fleet to date.

- The Portland Fire and Rescue continued to control discharges from equipment washing, maintenance, and nonemergency firefighting training by routing discharges to the sanitary sewer system. Washwater is discharged typically through an oil/water separator.

- PBOT-MO inspected and maintained, as necessary, all stormwater and stormwater containment and pollution prevention facilities in City maintenance yards. The City employs a variety of structural stormwater and nonstructural source controls in its maintenance yards. Typical controls include use of covers, berms, and other containment strategies for waste and recyclables; sweeping and good housekeeping practices; installation of filtration and absorbent inlet inserts in catch basins; and use of oil-water separators and other pollution prevention facilities.

- PP&R, BES, PBOT, PWB, Portland Fire & Rescue, Office of Management and Finance, and BPS continued to comply with practices required for Salmon-Safe certification, including integrated pest management, reduction of water and fertilizer inputs on park properties, riparian and upland habitat restoration, and use of pesticide alternatives. Facility managers have committed to additional actions to limit water pollution, conserve water use, and restore habitat through 2021, at which time City operations will be inspected for Salmon-Safe recertification. The City is evaluating recertification in light of other landscape level salmon recovery efforts such as environmental and floodplain zoning improvement and stricter mitigation requirements on development which are not covered by the certification.

- PP&R continued to implement City integrated pest management activities in parks, which reduce fertilizer and pesticide inputs, as well conserve water. These activities include:

    - Utilizing plants with natural resistance to pests

    - Proper mowing and irrigation of park turf to increase vigor and reduce weed populations

    - Mulching of planting beds to reduce establishment of weeds

    - Application of selected herbicides to control invasive weeds and prevent their spread

    - Release of natural biological control insects

- PP&R continued to implement practices to conserve water, minimize runoff, increase infiltration, and reduce fertilizer use in the City's park system, including:
    - Aerating and overseeding athletic fields to reduce the need for fertilizers
    - Using central control irrigation systems to reduce water usage
    - Prioritizing park areas that receive irrigation based on frequency and volumes
    - Reviewing irrigation plans to minimize maintenance and water usage
- PP&R consolidates maintenance activities and materials into one location, the Mount Tabor Yard. Recyclable and recoverable waste products are moved to the site, stored appropriately, and hauled offsite by specialized vendors and contract services. Used transportation maintenance wastes (oil, antifreeze, solvents, tires, and dry cell batteries), paper and cardboard, scrap wood and metal, excess paint, and fluorescent lamps are managed at the site.

Site-specific OM actions conducted as a response action are discussed in Section 4: Response.

2.6 Program Management (PM)

The purpose of the Program Management (PM) BMP is to ensure effective program management, coordination, and reporting for effective implementation of the UICMP and compliance with the WPCF Permit. This approach involves strong relationships and coordination with multiple City bureaus, state agencies, and other jurisdictions and organizations. This BMP category includes City initiatives, such as policies that promote the implementation of green streets as alternatives or retrofits for UICs, as well as code and administrative rules pertaining to groundwater protection.

PM-1: Facilitate internal City coordination regulations to enhance groundwater protection.

2.6.1 PM-1: Key Accomplishments

Development Review Process and UICs

- Continued evaluation of the review and approval process for private UICs, identifying issues and process gaps and identifying strategies for a more streamlined and consistent registration process for both public and private UICs.

SWMM Revision

- Continued to participate in quarterly meetings for System Planning and SWMM revisions, which provide policy and design requirements for stormwater management citywide, to provide input on new and retrofitted UICs on private and public property and in the public ROW. The most recent update to the SWMM went into effect on December 14, 2020. This manual is revised every 2 to 5 years and provides implementation requirements for stormwater management activities within the City of Portland.

Land Acquisition

- Acquired 1.3 acres of land in the Johnson Creek watershed as part of the Watershed Land Acquisition Program and Johnson Creek Willing Seller Programs. UICs are most commonly found in Johnson Creek and Columbia Slough eastside watersheds.

Climate Change Planning

- Adopted the 2015 *Climate Action Plan*, to reduce local carbon emissions and build resilience to the projected impacts of climate change. The Plan provides a roadmap to achieve an 80 percent reduction in carbon emissions by 2050, with an interim goal of a 40 percent reduction by 2030. In June 2020, the City declared a climate emergency and prioritized key actions for climate and community health. In July 2020, the City Council adopted a Climate Emergency Declaration that acknowledges that the Portland metro area faces a human-made climate emergency, with frontline communities being the least responsible for, but most impacted by, climate change. With this Declaration, the City is committing to using a new climate justice and equity-focused approach that centers on communities of color, and youth from those communities, in the next chapter of climate action planning and implementation. A progress report on the Climate Emergency Declaration was provided to City Council in July 2021.

- Relevant climate change planning work conducted during FY 2020–21 includes the following:

    - BES is prioritizing and advancing recommendations from the recently completed Resiliency Master Plan for wastewater and stormwater infrastructure to better prepare City infrastructure and its watersheds for climate change impacts. The plan includes application of sensitivity analysis, scenario planning, and programmatic changes for natural systems services. Efforts include assessing the sensitivity of a sewer basin to potential changes in rainfall intensity and volume and extrapolating the effect of range of climate projections on combined sewer overflows. The plan contains recommendations for both mitigation and adaptation measures.

    - BES partnered with neighboring agencies to fund high-resolution regional climate models produced by the University of Washington Climate Impacts Group. The projected precipitation data was made available in March 2021 and shared with City and regional partners. Data from these models will improve the

understanding of how global climate change will have local effects and indicate how sub-daily rainfall intensity may change in the future.

- The City's infrastructure bureaus (BES, PWB, PBOT, and PP&R) have continued to meet regularly and have formed the Disaster Resilience and Recovery Action Group, which is coordinating and facilitating multi-bureau resilience planning. The group's bureau members are also members of the Citywide Climate Preparation Implementation Team along with BPS, Portland Bureau of Emergency Management, BDS and other City bureaus.

PM-2: Coordinate with external partners, including state agencies, other jurisdictions, and outside organizations.

2.6.2 PM-2: Key Accomplishments

Regional Coordination

- Participated in the Association of Clean Water Agencies' Groundwater Committee, which consisted of discussing monitoring proposals and permit negotiations with other municipal permittees, tracking the issuance of individual and general municipal WPCF Permits and permit conditions, and promoting consistency in required permit activities (e.g., adaptive management).

- Participated in coordination activities for the statewide Clean Rivers Coalition clean water communications campaigns. The initial campaign focus is on pesticides and insecticides. The City's participation in FY 2020–21 included a $5,000 sponsorship contribution supporting marketing campaign development, community feedback, and participation in the identification of priority issues.

- Participated in clean water education programming through "The River Starts Here" campaign. This coalition seeks to help Portland residents make informed home and automobile care decisions that reduce stormwater pollution. The City's participation in FY 2020–21 included a $1,000 sponsorship to support awards for a clean rivers practices student video contest.

- Participated in and contributes to the development and delivery of the "Clean Water — It's Our Future" campaign with a group of regional clean water partners. The campaign comprises a series of public service announcements (PSAs), social media posts, and website content focusing on practical advice for implementing clean water practices such as alternatives to herbicide use. The PSAs air during KPTV news segments, and complementary information is posted on the KPTV Community webpages and shared via Facebook posts. The City contributed $5,000 to this campaign in FY 2020–21 that was pooled with other jurisdictions' monies. The City also participated in the selection and development of messages. The PSAs aired throughout the year in the Portland metropolitan area.

2.7 Projected Main Activities for FY 2020–21

All stormwater management BMPs discussed in Sections 2.2 through 2.6 are intended to help prevent, minimize, and control pollutants in stormwater prior to discharge to a UIC. Unless otherwise noted as a one-time activity, implementation of these BMPs is expected to continue and be tracked in FY 2021–22. The following additional Program Management activity may also be added:

- Participate in the UIC rules revision process (which will include revision of Oregon Administrative Rules [OAR] 340-044, UIC Rules, and OAR 340-040, Groundwater Quality Protection Rules) when initiated by DEQ.

Due to the large amount of development and redevelopment in the City of Portland, it is impossible for the City's UIC Program to forecast how many new UICs will be added or removed from the system 1 year in advance. Therefore, for UIC construction, the City has its own registration process to ensure that all new UIC installations meet the conditions of its current WPCF Permit prior to construction. Also, for UIC closure, part of the City's decommissioning process is to inform DEQ directly (either by phone or email) prior to any actions in the field. Since June 30, 2020 (the end of FY 2019–20 reporting), 46 new UICs have either been approved for installation or were newly discovered in the field, and 13 UICs have been reported for decommissioning.

All newly constructed or identified UICs will continue to be evaluated for characteristics that may potentially create adverse impacts to groundwater. Resulting information will be incorporated into the Response process, as appropriate.

2.8 Additional Actions Taken to Manage the UIC System

Additional actions taken to manage the UIC system to ensure groundwater protection for this reporting year include the following:

- UIC Program policy requires adding pretreatment to a UIC system when a construction project impacts a UIC that does not have a sedimentation manhole or other form of pretreatment. The UIC Program will continue to work with BES Engineering staff to ensure that pretreatment is added.

2.9 UICMP Actions Not Completed

All actions identified in the UICMP have been completed for this reporting year.

2.10 Adaptive Management

Adaptive management measures are evaluated annually and were anticipated in FY 2020–21 due to the COVID-19 pandemic, which started in March 2020. With little notice, City staff were required to work from home, necessitating a significant amount of time to establish home offices, identify new ways to communicate and coordinate, and update means to access and share data,

all needed to accomplish UICMP objectives. While some individual BMP elements were not fully implemented, overall permit requirements were completed in FY 2020–21, including UIC system monitoring (Section 3) and the SA revision. As the situation with COVID-19 continues to impact work sites and the time necessary to implement BMP elements, the City fully expects to continue to meet all conditions of the UIC WPCF permit and applicable monitoring and reporting.

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3 System Monitoring

The System Monitoring program element involves ongoing UIC monitoring to demonstrate that UICs are operated to meet WPCF Permit requirements and protect groundwater as a drinking water resource. Stormwater discharge monitoring is conducted annually on a representative subset of UICs, as identified in the *Stormwater Discharge Monitoring Plan* (SDMP). This is referred to as "compliance monitoring" and is discussed in Section 3.1.

3.1 Compliance Monitoring

3.1.1 UIC Stormwater Discharge Monitoring Summary - Year 6 (2015 Permit)

The City's UIC monitoring program was implemented in accordance with the 2015 SDMP. The monitoring program under the City's 2015 Permit was designed to focus on UICs located in areas of shallow groundwater, defined as having less than 5 feet of separation distance between the UIC and estimated seasonal high groundwater. Fifteen UIC locations were sampled between July 1, 2020, and June 30, 2021, to implement the required compliance monitoring described in the SDMP. Stormwater discharge samples were analyzed for pollutants as defined in Table 1 of the 2015 Permit. Specific information concerning site details, monitoring results, and quality assurance/quality control can be found in Appendix D.

Year 6 (2015 Permit) Results

- All six pollutants in Table 1 of the City's 2015 Permit were detected in Year 6 (2015 Permit). Specific constituent concentrations are provided in Appendix D.

Action-Level Exceedances and Response Actions

- No pollutants were detected in Year 6 (2015 Permit) at concentrations above their respective action levels and, thus, no response actions were required.

3.1.2 Key Accomplishments

- Implemented Year 6 (2015 Permit) stormwater compliance monitoring. Fifteen UICs were sampled and tested for pollutants as defined by the Permit.
- Compiled and evaluated Year 6 (2015 Permit) stormwater data; there were no exceedances of the Permit's action levels.
- Prepared and submitted annual stormwater discharge monitoring results to DEQ with this report (Appendix D).

3.1.3 Projected Main Activities

- Implement Year 7 (2015 Permit) UIC compliance monitoring in accordance with the 2015 WPCF Permit and 2015 Permit SDMP. As described in the SDMP, Year 7 monitoring will repeat the shallow groundwater locations sampled in Year 2 (2015 Permit).

- Document, analyze, and report results of Year 7 (2015 Permit) stormwater monitoring to DEQ by November 1, 2022 (per the 2015 WPCF Permit).

- Continue to work with DEQ to demonstrate (through SDMP-required compliance monitoring) that discharges to public UICs meet permit action levels and are protective of groundwater quality (see Section 4).

3.2 Stormwater Discharge Monitoring Plan Update

The 2015 Permit required the SDMP to be evaluated and updated after 5 years. The evaluation conducted at that time did not result in any monitoring changes to the current SDMP. A review of the current SDMP, including an updated emerging contaminant evaluation, will be conducted prior to completing the City's permit renewal application, and is expected to be completed no later than January 2025.

4 Response

The Response program element uses data and information from System Management and System Monitoring activities (Sections 2 and 3) to assess UIC compliance status. It also defines the process and criteria used to identify, evaluate, and prioritize actions necessary to protect groundwater and meet WPCF Permit requirements.

During the first permit term (2005 to 2015), the City completed numerous actions to ensure UICs were compliant with the state and federal UIC rules and protective of groundwater. Actions included required and voluntary annual monitoring, on-the-ground UIC retrofits, and decommissioning, as well as data evaluation and numerous modeling efforts to demonstrate groundwater protectiveness for various discharge scenarios. Detailed information about these activities can be found in the annual UICMP reports for 2005 through 2015.

In addition, detailed information about response activities conducted so far during the second permit term can be found in the annual UICMP reports for 2016 through 2019. Ongoing evaluation and annual response activities for FY 2020–21 are discussed in this section.

4.1 Assessment Response

Data generated through the systemwide assessment and ongoing database updates and evaluations are used to identify whether spatial and physical characteristics of UICs could result in drainage that may pose a risk to groundwater. Assessment response includes an evaluation of the appropriate actions to correct the condition and protect groundwater quality. Responses may include a variety of corrective actions, and they may apply to individual UICs or groups of UICs.

4.1.1 Key Accomplishments

- No UICs were identified that required a corrective action.

4.1.2 Projected Main Activities

- Implement actions as appropriate to respond to any Year 7 (2015 Permit) UICs identified as needing correction.

4.2 Monitoring Response

Response actions are intended to reduce elevated stormwater discharge concentrations at the ground surface to meet permit action levels. Meeting permit action levels at the “end of pipe” demonstrates compliance with state and federal requirements for the protection of “underground sources of drinking water” and “waters of the state.” Response actions are intended to be implemented in a timely manner and are considered interim in nature until a final compliance determination is made or a final corrective action is implemented.

4.2.1 Key Accomplishments

- No monitoring response actions were needed during FY 2020–21.

4.2.2 Projected Main Activities

- Implement actions, as needed and appropriate, in response to any Year 7 (2015 Permit) individual stormwater discharge monitoring action-level exceedances, unusual conditions observed during UIC sampling, inspections, or citizen complaints.

4.3 Spill Response

Spills and illicit discharges are reported to the SPCR team through the spill response hotline or by the Oregon Emergency Response System, or they are discovered by staff during site inspections. If a spill that could impact a UIC is discovered, the City will undertake a response as identified in the UICMP.

4.3.1 Key Accomplishments

- Continued to operate the BES 24-hour spill response hotline. Activities in FY 2020–21 included the following:
    - Received and responded to approximately 2,033 calls (citywide) regarding pollution complaints, spills, sanitary sewer overflows, dye tests, and other pollution-related inquiries.

During FY 2020–21, no spills of note occurred that required larger response actions (see Section 2.3 of this report for details).

Appendix C contains a table of all spills during FY 2020–21 that were in close proximity to a UIC catchment, including any triggered response-related activities.

4.3.2 Projected Main Activities

- Implement actions as needed and appropriate in response to any FY 2021–22 spills that may impact a UIC.

4.4 Groundwater Protectiveness Demonstration and Verification

During the first permit term (2005 to 2015), the City completed multiple groundwater protectiveness demonstrations (GWPDs). These GWPDs showed that operation of all City-owned UICs are protective of groundwater, including UICs with direct discharge and UICs that are within close proximity to a drinking water well. For the purpose of maintaining the validity of the demonstrations, the City evaluates monitoring data and depth-to-groundwater information annually to confirm that the basis of the protectiveness demonstrations have not changed and that groundwater continues to be protected.

4.4.1 GWPD Verification

The following data were evaluated to ensure that the City's GWPDs are still valid.

- **Verification of vertical separation distance:** U.S. Geological Survey depth-to-groundwater data were used in combination with existing construction information to calculate the vertical separation distance between the bottom of the UIC and seasonal high groundwater. All vertical separation distances are reported and updated as part of the UIC database annual reporting.
- **Verification of stormwater discharge monitoring results:** In general, pollutants detected in Year 6 (2015 Permit) monitoring are similar to the detections, frequency, and concentration ranges identified during the first permit term. Common pollutants detected during the first permit term and during Year 6 (2015 Permit) are at low concentrations and below their respective action levels. Concentrations are generally low and within narrow ranges at individual UIC locations.

4.4.2 Key Accomplishments

- Evaluated UICs for WPCF Permit compliance.
- Evaluated Year 6 (2015 Permit) monitoring information for compliance.

4.4.3 Projected Main Activities

- Continue identification and evaluation of UICs as new data become available.
- Perform compliance determinations on any new UICs.
- Review and update as appropriate the Decision Making Framework for Groundwater Protectiveness Demonstrations to reflect any identified changes.
- Apply the protocols in the Decision Making Framework for Groundwater Protectiveness Demonstrations to any new UICs as appropriate to determine if groundwater is protected or corrective action is required.

4.5 Other Noncompliance or Violations

No instances of noncompliance or other unreported permit violations were identified.

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