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. 1 (2015 Permit)

Fiscal Year 2015-2016
(July 1, 2015 – June 30, 2016)

November 1, 2016

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This *Underground Injection Control Management Plan (UICMP) Annual Report No. 1 (2015 Permit)* is submitted to the Oregon Department of Environmental Quality (DEQ) to fulfill reporting requirements for the City of Portland's (City) Water Pollution Control Facility (WPCF) Permit for Class V Stormwater Underground Injection Control (UIC) Systems. The report summarizes UIC program activities during the 2015 Permit reporting year (July 1, 2015, through June 30, 2016).

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 – 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 [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, 2015 through June 30, 2016 (FY15-16) 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 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 for updates to the UIC Registration Database; submitted updates to DEQ with this report.
- Received and responded to 54 calls regarding spills located within or near an area where UICs are the primary method of stormwater management. (Upon inspection, all of the spills were determined to have minimal to no impact.)
- 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 (O&M), 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 O&M practices.
- Coordinated with the City's Bureau of Development Services on UIC design standards and on the review and approval process for UICs registered on private property.
- Cleaned approximately 1,806 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 28 enforcement actions in response to pollution complaints citywide, with proposed penalties and costs totaling $20,516.
- Conducted 212 groundwater-related inspections and 65 plan reviews in the Columbia South Shore Well Field Wellhead Protection Area (including Gresham and Fairview) of regulated businesses.
- Conducted 340 case reviews for source control measures (citywide) at commercial and industrial properties subject to the City's *Stormwater Management Manual* requirements. Required and approved 1,443 source control measures at these commercial and industrial properties citywide.
- As a partner, administered about 50 neighborhood cleanup collection events citywide to help prevent illegal dumping.
- Conducted and approved 5,250 erosion control-related inspections of private construction sites citywide. (Erosion control inspections that were not approved resulted in 3 stop work orders, 50 correction notices, and 1 notice of violation.)
- Inspected 170 active public construction projects with erosion control components citywide.
- Responded to 18 erosion control complaints.
- Involved approximately 10,243 students citywide in activities and presentations that teach the causes and effects of water pollution and how to protect water resources.

- Participated in numerous community activities and events involving stormwater management and watershed protection issues and actions. Awarded 32 grants totaling $105,800 to encourage watershed protection; several promoted stormwater infiltration projects.
- Inspected and mapped private stormwater management facilities at 1,194 properties (tax lots) with 2,292 total facilities for compliance with BES-approved O&M agreements. Issued 36 warning notices and 5 notices of violation.
- Partnered to make 2,500 outreach contacts and provided technical assistance to over 30 businesses affected by the Columbia South Shore Well Field Wellhead Protection Program.
- Maintained over 20 BMP fact sheets online for commercial and industrial site operators. During FY15-16, the most-viewed fact sheet related to sand-blasting and painting operations (approximately 700 views), catch basin maintenance (approximately 688 views), and preparing emergency response and spill cleanup plans (approximately 234 views).
- Cleaned approximately 11,372 catch basins and inlets citywide.
- Swept major arterials four to six times during the year and residential streets approximately once every 10 months.

System Monitoring

- Implemented FY15-16 stormwater compliance monitoring. Sampled 15 UICs located in areas of shallow groundwater and tested for pollutants defined by the 2015 Permit.
- Compiled and evaluated stormwater data. There were no FY15-16 exceedances of the 2015 Permit's action levels.
- Prepared and submitted FY15-16 stormwater discharge monitoring data with this report.

Response

- Evaluated UICs for corrective action response due to database updates, monitoring results, or spill response.
- Evaluated FY15-16 data to ensure that no major changes have occurred in the City's depth-to-groundwater estimates and monitoring data to confirm the results of groundwater protectiveness demonstrations conducted during the 2005 Permit term.
- Confirmed no new UICs needing corrective action during Year 1 (2015 Permit).

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1 Introduction

1.1 Overview

The Oregon Department of Environmental Quality (DEQ) issued the City of Portland's (City) second Water Pollution Control Facility (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 – 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 first fiscal year of permit implementation (July 1, 2015 through June 30, 2016; FY15-16) 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 Annual Report**
System Monitoring	
Results of stormwater monitoring conducted in accordance with the Stormwater Discharge Monitoring Plan	Appendix C Section 3.1.1
Spreadsheet of all data from sampled UICs provided in the 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*)	
Discussion of 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 A
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 A
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 A
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 4.5
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 4.6

1.2 Overview of the UICMP

The UICMP meets the requirements of OAR 340-044-0018(3)(b)(C). These requirements specify that municipalities with 50 or more stormwater injection systems must 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 determined to be out of compliance with the permit. When this happens, 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 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 make and enforce *** [as] necessary or appropriate water, local, police, sanitary and safety laws and regulations." (*Chapter 2-105, Charter of the City of Portland, Oregon.*)

In addition, 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. 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

There were no personnel changes in UIC Program staff in FY15-16.

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 $1.343 billion in stormwater management services and facilities over the past 21 years.[3] The revenue requirements for FY15-16 were as follows:

Table 1-2. City Revenue Requirements for FY15-16

Major Program Category	Requirements	Percentage Share
Enforcement and Development Review	$13.7 million	12%
Watershed Program and Habitat Restoration	$14.7 million	12%
Facilities Operations and Maintenance	$30.4 million	26%
Capital Improvements*	$59.7 million	50%
Total Revenue Requirements	**$118.5 million**	
* Includes debt service, facilities planning and engineering, construction engineering, and construction contracts.		

Ninety-two percent of these revenue requirements are financed through direct monthly user fees. The remaining revenue sources include direct charges for new private development (system development charges [SDCs]), service charges, permit fees, and regulatory charges and penalties. More details on City revenues are provided below.

[3] The 21-year time period reflects the implementation period of the City's National Pollutant Discharge Elimination System Permit.

In FY16-17, the City plans to invest $122.5 million in stormwater management services and facilities. Direct monthly user fees will pay for 95% of these investments.

Stormwater Management Charges

City Council approves revised stormwater monthly user fees and stormwater SDCs at the start of each fiscal year. Monthly 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.

The following table reports the monthly single-family stormwater management charge and the residential and nonresidential monthly stormwater rates per 1,000 square feet of impervious area for the last 5 permit years, as well as approved increases for FY16-17:

Table 1-3. Stormwater Charge and Rates

	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
Single-Family Residential Charge	$22.36	$23.90	$24.88	$25.72	$26.59	$27.44
Residential rate per 1,000 square feet of impervious area	$9.32	$9.96	$10.36	$10.72	$11.08	$11.43
Nonresidential rate per 1,000 square feet of impervious area	$9.97	$10.55	$10.97	$11.19	$11.55	$11. 95

Stormwater SDCs

The methodology for assessing SDCs for new development and significant redevelopment includes two components. One component represents the charge for stormwater facilities that handle runoff from individual properties. For FY15-16, this onsite portion was assessed based on $183.00 per 1,000 square feet of impervious area. Riparian properties that drain directly to the Columbia Slough, Columbia River, or Willamette River are exempt from this portion of the SDC. The other portion represents the cost of stormwater facilities that handle runoff from public rights-of-way. This portion was assessed based on the use of the transportation system, using road frontage and vehicle trips to allocate the costs. For FY15-16, the rates were $5.84 per linear foot and $3.12 per vehicle trip. At the end of FY15-16, City Council increased the rates for stormwater SDCs to $190.00 per 1,000 square feet of impervious area, $6.05 per linear foot of frontage, and $3.24 per daily 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% for retention of the 100-year event to no discount for control of the 10-year storm.

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 FY16-17.

Section 3: System Monitoring summarizes compliance monitoring. Details are provided in Appendix C.

Section 4: Response identifies response actions conducted during this fiscal year and those projected for next fiscal year.

Appendix A identifies UICs added and removed from service during FY15-16 (including closure reports for decommissioned UICs, provided on a separate CD).

Appendix B identifies spills that occurred within areas serviced by UICs.

Appendix C is a report presenting the annual results of the City's 2015 Permit-required UIC monitoring.

2 System Management

2.1 Overview

The System Management program element involves a series of actions, called best management practices (BMPs), that serve to prevent, minimize, and control pollutants in stormwater prior to discharge to a underground injection control (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 of the programs detailed in this section are citywide programs that 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

The purpose of the Systemwide Assessment (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 relative to the factors that could present a risk to groundwater quality.

SA-1: Inventory and Assess City-owned UICs

2.2.1 SA-1: Key Accomplishments

- Submitted UIC Registration Database updates to the Department of Environmental Quality (DEQ) with this report. All updated UIC database information is posted to the City's FTP site where it can be accessed by DEQ. The files provide all new and removed UIC information as well as any attribute changes to existing information currently included in the UIC database.

- Identified 64 new public UIC[4] records in UIC Registration Database updates. These UIC records are listed in Appendix A.

- Removed 29 public UIC records in UIC Registration Database updates. The reasons for removal may include decommissioning, identification through field investigations as not existing, change in ownership, or data error. These records are listed in Appendix A.

- During FY15-16, four UICs were decommissioned. Three of these closures were conversions of UICs to sedimentation manholes. These locations will not show up in the database as decommissioned locations. They will show up as a type change, where the BES UIC identification number is changed from a UIC to a sedimentation manhole. Closure reports for the four decommissioned UICs are included on a CD as part of Appendix A.

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

    - 168 updates to maintenance period
    - 42 updates to operational status
    - 4 updates to address
    - 324 updates to latitude
    - 345 updates to longitude
    - 1379 updates to distance to nearest water well[5]
    - 3587 updates to distance to nearest wetland[5]
    - 3551 updates to distance to nearest surface water[5]
    - 8433 updates to size of impervious area
    - 91 updates to UIC pretreatment
    - 75 updates to installation date
    - 48 updates to well depth and diameter
    - 280 updates to depth-to-groundwater (most of these updates are due to a new calculation method causing minor changes in rounding)
    - 9338 updates to date updated
    - 9 updates to discharge rate

2.3 Pollution Control

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.

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

[5] Most of these updates are due to a change in GIS calculation methods causing minor shifts in location information.

- 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 issue enforcement actions for violations of Portland City Code 17.39 for prohibited discharges. During FY15-16, issued 28 enforcement actions citywide, with proposed penalties and costs totaling $20,516.
- 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

SPCR staff responds immediately to spill emergencies and investigates pollution complaints regarding spills, illegal disposal, improper site management, and erosion. Citizens can call in reports on a dedicated spill response hotline 7 days a week, and staff is available 24 hours a day to respond to spills, slicks, and other suspicious or inappropriate discharges. The program refers problems to other enforcement agencies 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). SPCR staff supports the entire City, including areas that use UICs for stormwater management.

- Received 54 calls regarding spills located within or near an area where UICs are the primary method for stormwater disposal. Only four of these spills reached a UIC system. In response, all four systems were cleaned and inspected to confirm that no further actions were necessary. For three of these incidents, City staff evaluated the site and determined that the volumes of paint, sediment, and digestive enzymes that were discharged to the UIC system, once cleaned, did not pose a threat to groundwater, and the cases were closed. In the case of the transformer oil spill at SE 125th Place and SE Powell Boulevard that occurred on November 24, 2015, Portland General Electric (PGE) completed all cleanup activities. Upon the City's arrival at the location, all cleaning had been completed. PGE informed DEQ of the spill and collected samples as directed. The collected samples were nondetect for PCBs, so it was confirmed with DEQ that the system was not impacted and no further actions were necessary. Appendix B 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.

Regional Spill Response Committee

- Hosted two Regional Spill Response Committee coordination meetings during FY15-16. The committee includes representatives from DEQ, Water Environment Services, Port of Portland, City of Gresham, and three City of Portland bureaus (Water, Fire, and BES). BES chairs and UIC staff attended all meetings.

Columbia South Shore Well Field (CSSWF) Wellhead Protection Program

The City continued to implement the CSSWF Wellhead Protection Program and reference manual for the City of Portland (and also in effect in Gresham and Fairview). The program focuses on groundwater protection through the implementation of mandatory spill containment BMPs and facility inspections for commercial and industrial facilities located within the CSSWF Wellhead Protection Area (WHPA) overlay zone. The program also includes education and outreach efforts to affected residents and businesses and one-on-one technical assistance to businesses to help them comply with program requirements (See ET-3). Program requirements include structural and operational BMPs to reduce the occurrence of spills and minimize their impacts.

- Conducted 212 groundwater-related inspections in the WHPA (including Gresham and Fairview) of regulated businesses. Conducted 65 plan reviews.

Source Control Measures

The City's *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 projects, redevelopment projects, tenant improvements, and existing sites proposing new offsite discharges. When the SWMM is applied, drainage from high-risk areas is prohibited from draining to public UICs, and stormwater is managed onsite.

- Conducted 340 case reviews[6] for source control measures at commercial and industrial properties subject to SWMM requirements.

- Required and approved 1,443 source control measures at these commercial and industrial properties.[7] 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 draining to public UICs, and stormwater is managed onsite.)

[6] This includes 123 land use reviews; 112 early assistance appointments; 93 pre-application conferences; and 12 exempt land use reviews and meetings for contaminated sites.

[7] 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 re-development or tenant improvement projects.

- Worked toward adoption of a City Source Control Manual to separate source control requirements from the SWMM (currently Chapter 4). The Source Control Manual became effective in early FY16-17.

Prevention of Illegal Disposal

- To help prevent illegal dumping, continued to implement curbside collection services (residential garbage, recycling, yard debris, and food scrap collection). Continued the City's partnership with neighborhood coalition offices and Metro to administer neighborhood cleanup collection events. On average, about 50 events take place throughout the city.

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

2.3.2 PC-2: 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:

- Conducted 5,250 erosion control-related inspections of private construction sites. This number includes only approved inspections.

- Inspected all 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 the course of regular building inspections, the inspector notes any identified erosion control deficiencies, and the site operator is required to implement corrective action.

- As a result of erosion control inspections, the City issued:

    - Three stop work orders
    - 50 correction notices[8]
    - 1 notice of violation

- Inspected 170 active public construction projects with erosion control components. In general, public sites are inspected daily during construction.

- Tracked erosion control complaints (received through the complaint hotline or staff referrals) through the City's building permit tracking program, TRACS. Received and responded to 18 cases.

- Continued the pre-permit issuance site meeting program, in which the applicant's team can choose to meet with staff onsite to discuss erosion control and other sensitive site issues. No

[8] Does not include correction notices issued for residential properties.

applicants requested a pre-permit-issuance site visit this fiscal year.

2.4 Education and Training

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, WPCF permit conditions, and 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 5,500 students (grades K-12) with classroom programs that provide hands-on, interactive science education about stormwater and other environmental issues.
- Involved 3,223 students (K-12) in education field programs that offer watershed investigations and field assessments, stormwater tours, boat tours, and restoration experiences.
- Provided canoe trips to 312 students in the Columbia Slough watershed. These included classroom studies and stewardship projects related to stormwater pollution.
- Presented *Stormwater - Soak It Up*, a 75-minute classroom program for grades 4-12 and special interest groups, totaling 317 students and teachers.
- Presented *Tours of Stormwater Solutions* to 142 students. Students visited bioswales, stormwater planters, ecoroofs, areas with porous pavement, and creative downspout disconnections.
- Presented *Watershed Awareness* class to 498 students, grades 3-6. This program focuses on common non-point sources of pollution and pollution prevention.
- Presented *Futures Working for Clean Rivers* career education programs and field programs to 27 students in the Columbia Slough watershed.

An estimated 10,243 students participated in these activities citywide. Additional detail is provided in Table 1-4.

Table 1-4. Clean Rivers Education Program Activities

Education Activity	Number of Students					
	Columbia Slough	Fanno & Tryon Creeks	Johnson Creek	Willamette River	Non-watershed-specific	Total
Classroom programs	1,127	514	271	3,588		5,500
Field programs	1,517	270	214	1,222		3,223
Canoe trips	312					312
Stormwater - Soak It Up Class	56	44		217		317
Stormwater management facility tours					142	142
Led tours at the WPCL*					224	224
Watershed Awareness Class	145	24		329		498
Futures Working for Clean Rivers class and field program	27					27
Total						**10,243**

*WPCL is the City's Water Pollution Control Laboratory. Tours focus on pollution prevention, onsite stormwater management, and water-quality-based career awareness.

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, restoration projects). More than 26,000 people were involved in these activities. FY15-16 examples included:

    - Awarded 13 stewardship grants and 19 mini grants in FY15-16 totaling $105,800. The program provides up to $10,000 per project to citizens and organizations to encourage watershed protection in Portland. Several awards were given to projects that promoted stormwater infiltration, such as Depave at Saints Peter & Paul Episcopal Church in East Portland.

    - Seventy-six community and school volunteers distributed door-hangers with stormwater pollution prevention messages to residences as part of the storm drain curb marker program.

Stormwater-Related Information

- Included four different inserts in City water/sewer bills mailed to more than 200,000 customers:

    - Fall insert (September, October, November 2015)
    - Winter insert (December, January, February 2016)

- Spring insert (March, April, May 2016)
- Summer insert (June, July, August 2016)

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

  - Sustainable stormwater management (129,194 page views)
  - Treebate incentives for planting yard trees (18,514 page views)
  - Green Street Stewards Program (18,424 views)
  - Native and invasive plant resources (57,046 page views)
  - The City's Brownfield program (35,676 page views)

- Continued to educate and recruit volunteer Green Street Stewards. In FY15-16, the program reached over 1,500 individuals through tabling events and trainings. Twenty-eight people volunteered to become Green Street Stewards and adopt 93 Green Street facilities (citywide).

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

Ecological Business Program

- Continued to work with the Regional Pollution Prevention Outreach Team (P2O Team), Automotive Eco-Logical Advisory Subcommittee, and Landscape Eco-Logical Advisory Subcommittee for the Portland metropolitan region to certify businesses using sustainable and environmental practices under the Eco-Logical Business Program (EcoBiz). This involves performing 38 site visits and technical assistance during FY15-16 on ways to:

  - Reduce and eliminate pollutants like 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
  - Adopt the principles of Integrated Pest Management (landscapers)
  - Reduce or eliminate the use of pesticides (landscapers)

- Distributed 30 spill kits with page and spill response plans during public outreach site consultations.

- Purchased two, full-page ads promoting EcoBiz facilities in the Chinook Book. The Chinook Book promotes and provides discount coupons for environmentally conscious businesses.

- Conducted outreach and hosted a booth at the 2015 Oregon Landscape Contractors Association (OLCA) NW Landscape Expo.

- Attended three OLCA chapter meetings.

- Partnered with Portland State University's Community Environmental Services on a 2016 U.S. Environmental Protection Agency Pollution Prevention Grant Application. The project was not selected for funding, but the City will continue to pursue additional funding opportunities.
- Conducted presentations on EcoBiz to local and statewide DEQ staff.

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 (O&M), 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 O&M practices.

- Coordinated with the City's Bureau of Development Services 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 O&M agreements. Program staff conduct inspections, provide technical assistance to property owners on the O&M 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. The program also collects information on SMF deficiencies and corrective actions taken to address deficiencies. MIP activities in FY15-16 included the following:

- Inspected 1,194 properties (tax lots) with 2,292 associated private stormwater management facilities.
- Mapped MIP data, including MIP properties, facilities, inspections, and O&M plans.
- Issued 36 Warning Notices, 5 Notices of Violation, and 1 Voluntary Compliance Agreement.

CSSWF Wellhead Protection Program

- Provided education and outreach to affected residents and businesses to help them comply with requirements of the program, in conjunction with the Columbia Corridor Association (CCA) and Columbia Slough Watershed Council. Activities in FY15-16 included the following:

  - Made 2,500 individual outreach contacts.
  - Provided technical assistance to over 30 businesses.
  - Published newsletter articles on the protection program.
  - Distributed free spill kits, required signs, and secondary containment pallets.
  - Maintained the CCA and City of Portland webpages on the Groundwater Protection Program with information for businesses and residents.
  - Maintained BES spill response signs and a hotline number: (503) 823-7180.

Sustainability at Work

- Sustainability at Work (formerly the BEST Business Center) continued to assist Portland businesses with resources and information to help them green their operations, including managing stormwater and disposing of waste properly. The program is run by the City of Portland in partnership with Metro and the Energy Trust of Oregon. The program conducted the following activities in FY15-16:

  - Conducted site visits at 284 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. Assisted an additional 595 businesses on these topics by phone and email.

  - Distributed an e-newsletter twice monthly to 4,000 Sustainability at Work customers, providing tips, case studies, and best practices in the above-mentioned topic areas.

  - Reached entrepreneurs of color and built relationships with partner organizations to foster equity in Sustainability at Work's outreach efforts by attending 35 events with a combined audience of over 3,000 and by attending over a dozen individual meetings with six community organizations.

  - Administered Sustainability at Work certifications, recognizing businesses that have taken measurable steps to conserve resources and reduce their greenhouse gas emissions. In FY15-16, the program completed 97 certifications and renewals (for businesses at the end of their 3-year certification period). As of June 30, 2016, 213

businesses were certified and there were over 20,000 employees in a certified workplace.

Industrial Stormwater Program

- Over 20 BMP fact sheets are posted on BES's Industrial Stormwater Program website, which provides technical assistance for proper spill prevention and response outdoors. 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 FY15-16, the most-viewed BMP materials were related to sand-blasting and painting operations (approximately 700 views), catch basin maintenance (approximately 688 views), and preparing emergency response and spill cleanup plans (approximately 234 views). Other BMP materials included information on dewatering activities, loading and unloading materials, and outside container storage and waste disposal.

2.5 Operations and Maintenance

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

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

2.5.1 OM-1: Key Accomplishments

- Made debris screen/inlet inspection/maintenance visits to 350 locations citywide. These locations are inspected multiple times per year. (This number includes, but is not limited to, UIC-specific visits.)
- Cleaned approximately 11,372 catch basins and inlets (citywide).
- Cleaned 1,806 UIC sedimentation and sump manholes.
- Repaired or constructed 299 inlets and inlet leads and 265 linear feet of culvert (citywide).
- Continued to implement retrofits to the existing storm drainage system (roadside ditches to swales or porous shoulder).

OM-2: Address operation and maintenance activities that are conducted in public rights-of-way and <u>may affect</u> City-owned UICs.

2.5.2 OM-2: Key Accomplishments

Street Sweeping

- Swept major arterials four to six times during the year and continued to sweep residential streets approximately once every 10 months.

- Continued to implement a leaf removal program in 30 leaf service areas (areas that have streets lined with large, mature trees). Under the program, The Portland Bureau of Transportation (PBOT) schedules and implements one or two leaf collection days per zone.

PBOT Maintenance Operations BMPs

- Continued to implement BMPs within the right-of-way to protect water quality, including:
    - Following the Oregon Department of Transportation Routine Road Maintenance Water Quality and Habitat Guide Best Management Practices.
    - Using the trenchless liner repair system.
    - Using bio-pillows for sediment control on impervious surfaces to trap sediment during all sediment-disturbing activities.
    - Using low-disturbance sign installation methods to avoid or minimize digging.
    - Using mild cleaners, with no solvents, to clean signs.
    - Monitoring weather conditions during asphalt grinding.
    - Hand-applying asphalt where necessary to prevent these materials from entering the storm drain system.
    - Using rubberized mats on inlets to prevent fog seal material from entering the system.
    - Using water-based asphalt emulsions and biodegradable asphalt release agents.

- Continued to pilot-test alternative methods, products, and practices to reduce pollutant discharges. PBOT is now installing a UV-protection and anti-graffiti coating on new street signs, which will reduce chemical use during cleaning of the signs in the field.

- All licensed pesticide applicators at PBOT Maintenance Operations must receive 40 hours of training over their 5-year licensing period. PBOT Maintenance Operations has a total of seven certified applicators who have met all training requirements.

- Completed the PBOT *Maintenance Environmental Handbook* in 2011 that includes guidance for maintenance procedural steps, preferred seasonality of work, and materials management.

OM-3: Address operation and maintenance 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 O&M procedures for UICs on City property, based on the O&M templates established in the City's SWMM.

- Maintained the program that requires the Portland Water Bureau 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 in order 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 FY15-16, the department 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.

- The Portland Fire Bureau continued to control discharges from nonemergency fire-fighting training by routing the discharges to the sanitary sewer system.

- Met with PBOT Maintenance Operations Pollution Prevention teams to evaluate and track maintenance procedures, pilot test new products and techniques, evaluate work processes, and monitor developments in related fields. Topics relevant to stormwater quality protection included:

    - Water quality protection needs associated with vehicle and equipment washing
    - Evaluation of spill kit usage and appropriate absorbents
    - Spill reporting requirements

- PBOT Maintenance Operations inspected, and cleaned as necessary, stormwater and water quality facilities. It continued to implement stormwater controls, which encompasses installation, inspection, and maintenance of filtration and absorbent media at selected stormwater inlets.

- Portland Parks and Recreation (PP&R) continued to comply with practices required for Salmon Safe certification, including integrated pest management, reducing water and fertilizer inputs on park properties, restoring riparian and upland habitats, and using alternatives to pesticides. PP&R was originally certified Salmon Safe in 2004 and recertified in 2012.

- PP&R continued programs with vendors to provide pesticides at individual golf course sites on an as-needed basis to reduce pesticide storage.

- PP&R continued the use of a specially formulated slow-release fertilizer on park turf, which possesses an ideal formulation of components that reduces leaching and waste elements in runoff. Water quality testing results confirm the efficacy of this formulation.

- PP&R continued the standard use of special equipment for precise application amounts, timing, and distribution of fertilizer on all five City golf course fairways and greens.

- PP&R maintained pesticide-free parks management at three parks (Arbor Lodge Park, Lair Hill Park, and Sewallcrest Park).

- PP&R continued a public/private partnership to fund new practices at key park sites to renovate athletic fields. These practices include aeration and overseeding to reduce fertilizer use and increase water infiltration.

- PP&R continued to perform aeration, topdress, and overseed activities on 28 highly used sports fields at 20 different sites to achieve structural soil changes that improve plant health and optimize the use of water and fertilizers.

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

2.6 Program Management

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

- Participated in quarterly meetings for System Planning and the 2016 SWMM revision, which provides 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 right-of-way.

Land Acquisition

- Acquired 1.2 acres of land in the Stephens Creek subwatershed, 2 acres in the Johnson Creek watershed, and 10 acres in the Columbia Slough watershed as part of the Grey to Green and Johnson Creek Willing Seller Programs. Many acquired properties are in areas where stormwater is managed by UICs.

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).

2.7 Projected Main Activities for FY16-17

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 FY16-17. The following additional PM activity may also be added:

- Participate in the UIC rules revision process (OAR 340-044 and 340-040) when initiated by DEQ and Oregon Water Resources Department.

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 UIC 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, 2016 (end of FY15-16 reporting), 18 new UICs have either been approved for installation or were newly discovered in the field, and five 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:

- When work impacts a UIC that does not currently have pretreatment as part of the system, the UIC program continues to implement the policy of requiring the addition of a sedimentation manhole or other form of pretreatment to the UIC system.

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 will be evaluated annually and reported in Years 4 and 9.

3 System Monitoring

The System Monitoring program element involves ongoing UIC monitoring conducted 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; March 2015). 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 1 (2015 Permit)

The City's UIC monitoring program was implemented in accordance with the SDMP (2015). The monitoring program under the City's 2015 Permit was designed to focus on UICs located in areas of shallow groundwater, which is 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, 2015, and June 30, 2016, 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 QA/QC can be found in Appendix C.

Year 1 (2015 Permit) Results

- All six pollutants were detected in Year 1 (2015 Permit). Specific constituent concentrations are provided in Appendix C.

Action Level Exceedances and Response Actions

- No pollutants were detected in Year 1 (2015 Permit) at concentrations above their respective action levels and, thus, no response actions were required.

3.1.2 Key Accomplishments

- Implemented Year 1 (2015 Permit) stormwater compliance monitoring. Fifteen UICs were sampled and tested for pollutants as defined by the Permit.
- Compiled and evaluated Year 1 (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 C).

3.1.3 Projected Main Activities

- Implement Year 2 (2015 Permit) UIC compliance monitoring in accordance with the 2015 WPCF Permit and 2015 Permit SDMP (March 2015).

- Document, analyze, and report results of Year 2 (2015 Permit) stormwater monitoring to DEQ by November 1, 2017 (per the 2015 WPCF Permit).

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

4 Response

The Response program element uses data and information from System Management and System Monitoring activities (see 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 permit requirements.

During the first permit term (2005-2015), the City completed numerous actions to evaluate and respond to requirements to ensure UICs were compliant 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.

Ongoing evaluation and annual response activities 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 then evaluates 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 that have been identified as needing correction.

4.1.1 Key Accomplishments

- As part of the systemwide assessment completed in May 2015, one UIC (ADT473) was identified as being within 500 feet of a well, had less than 5 feet of vertical separation distance, and was not part of the Category 3 UIC retrofit project that was completed under the first permit term. Upon further evaluation, it was determined that the location information for the identified well was incorrect and this UIC was not within 500 feet. The City is evaluating the well location information that was collected from the Oregon Water Resources Department as part of the systemwide assessment update effort, and it is making changes as appropriate. Other than this instance, no UICs were identified that required a corrective action response.

4.1.2 Projected Main Activities

- Implement actions as needed and appropriate to respond to any Year 2 (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 limits (i.e., 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 response actions were needed during FY15-16

4.2.2 Projected Main Activities

- Implement actions, as needed and appropriate, in response to any Year 2 (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 SPCR 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 Spill Response Hotline. Activities in FY15-16 included:
    - Received and responded to approximately 2,000 calls (citywide) regarding pollution complaints, spills, sanitary sewer overflows, and dye tests.
    - Received approximately 1,500 additional daytime information-only calls (citywide) and responded by providing agency referrals, industrial information, technical assistance, and regulatory information.

No spills were identified during FY15-16 that required ongoing response actions. Only four of 55 spills reached a UIC system. Upon inspection, all of the spills were determined to have minimal to no impact. Systems were cleaned and inspected as appropriate. Additional detail is provided in Section 2.3.1. Appendix B contains a table of all spills during FY15-16 that were in close proximity to a UIC catchment.

4.3.2 Projected Main Activities

- Implement actions as needed and appropriate in response to any FY15-16 spills that may impact a UIC.

4.4 Groundwater Protectiveness Demonstration and Verification

During the first permit term (2005-2015), 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 of 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:** USGS depth-to-groundwater data were used in combination with existing construction information to calculate 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 quarterly updates.
- **Verification of stormwater discharge monitoring results:** In general, pollutants detected in Year 1 (2015 Permit) monitoring are similar to detections, frequency, and concentration ranges identified during the first permit term. Common pollutants detected during the first permit term and during Year 1 (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 all UICs for permit compliance.
- Evaluated Year 1 (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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