City of Gresham UIC Management Plan, 2012 – 2022[1]
Submitted to Oregon Department of Environmental Quality on Oct 12, 2012

Background

In 1974, Congress enacted Underground Injection Control (UIC) rules under the federal Safe Drinking Water Act (SDWA). These rules are administered by the U.S. Environmental Protection Agency (EPA) under 40 CFR 144-148. EPA delegated UIC rule primacy to the Oregon Department of Environmental Quality (DEQ) in 1984. The federal UIC rules were modified in 1999. In response to the new federal rules, delegated states were required to update their state UIC rules within 270 days. DEQ released revised UIC rules (Oregon Administrative Rules (OAR) 340-044) in September 2001. OAR 340-044 includes special requirements for municipalities with more than 50 UICs.

As a result of these requirements, the City of Gresham (City) conducted an inventory and system assessment and determined that most City Underground Injection Controls (UICs) qualified for rule authorization, but a small number would require a permit. The City applied for rule authorization in 2001, and submitted a Water Pollution Control Facility (WPCF) permit application for seven UICs in 2002.

In 2006, the City obtained approximately 350 UICs from Multnomah County, when responsibility for all formerly County-owned roads within Gresham was transferred to City ownership. Upon review of the new UICs, many of which were paved over, the City determined the new UICs would require permit coverage. In consultation with DEQ, in 2008, the City updated its permit application to include all City UICs—including those eligible for rule authorization.

In addition to the 2008 permit application update, the City submitted reports in December of 2009 and 2010 that detailed changes to the number, location, and status of its UICs. On June 30, 2011, the City submitted an additional permit application update that reflected discussions with DEQ regarding the anticipated permit.

An applicant review draft of a WPCF permit was presented to the City by DEQ in September 2011 (DEQ File Number 112110). The applicant-review draft of the WPCF permit for discharge of municipal stormwater to the ground via UICs required submittal of a Monitoring Plan, a System-wide Assessment (SWA), and a UIC Management Plan following permit issuance.

The City of Gresham requested approval of its monitoring plan concurrent with permit issuance; DEQ consented to review the monitoring plan, but required simultaneous submittal of the System-wide Assessment. The City submitted a Monitoring Plan and System-wide Assessment with its applicant review comments on November 21, 2011.

Based on significant public comment received on a draft WPCF permit written for another jurisdiction, DEQ re-evaluated the permit, and no permit was issued in 2011.

On September 10, 2012, DEQ sent Gresham a revised permit for applicant review. Gresham updated the System-wide Assessment and Monitoring Plan originally submitted in November, 2011 to meet the new permit requirements, and reflect the fact that one year of UIC monitoring consistent with both

[1] Dates are those anticipated to be the duration of the WPCF permit term. The UICMP will likely change when the MS4 NPDES permit is renewed, and at other intervals consistent with adaptive management required by the permits.

permit drafts was collected in fiscal year 2011/2012. Finally, the City also updated its management plan to more specifically address the requirements of the WPCF permit.

Gresham's Stormwater Management Program Organization

Gresham's Department of Environmental Services' (DES) Watershed Division undertakes a majority of the responsibilities for development and implementation of the City's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit requirements that are described in its MS4 stormwater management plan (SWMP) and will also be responsible for implementing the WPCF permit requirements as described in the UICMP. There are, however, required components of the program where implementation and tracking must occur in other City divisions, departments, and groups. The divisions within Gresham that are responsible for implementation of the NPDES and WPCF programs are described below. DES is comprised of the city utilities, providing services such as delivery of drinking water, collection and treatment of wastewater, recycling & solid waste disposal, maintenance of streets, stormwater management, and parks and recreation activities. Gresham's DES consists of the following Divisions:

- The **Watershed Division (WD)**, formerly called the **Stormwater Division,** works to improve flood protection and water quality through the construction and maintenance of the public stormwater system and protection of local waterways and groundwater. This division is responsible for management of Gresham's programs that address all stormwater water quality regulatory requirements listed above, monitoring of storm and surface water; erosion control inspection and enforcement; stormwater capital improvements; stormwater operations and maintenance, engineering and flood control and stormwater public involvement and education of staff, as applicable and the general public. The Watershed Division is also tasked with supporting and providing guidance to other divisions within the city regarding the NPDES MS4 and WPCF permits. There are groups within WD that play very specific roles in implementation of the NPDES MS4 and UIC WPCF programs and, ultimately in implementing the stormwater management plans.

  - *Stormwater Operations and Maintenance Grou*p is responsible for maintaining all public conveyance and water quality components of Gresham's stormwater drainage system including water quality facilities and the structural conveyance system, identifying illicit connections, responding to accidental spills, and assisting in mapping updates.
  - *Stormwater Engineering Group* is responsible for planning, designing, and constructing capital improvement projects within the Watershed Division.
  - *Water Resources Group* within WD is responsible for ensuring the City meets its regulatory requirements, including NPDES MS4, UIC WPCF, and stormwater-related TMDL programs.

Other DES groups include:

- *The Transportation Division* is responsible for street improvements, maintenance, and repair, street cleaning, street lighting, and some signs and signals within city limits. NPDES MS4 and UIC components that include the Transportation Division are road maintenance, street sweeping, limiting and tracking their Division's use of pesticides and herbicides, and de-icing material management.
    - *The Public Works Inspection Group* (housed within the Transportation Division) implements the commercial/industrial erosion prevention and sediment control inspections during construction.
    - *Development Engineering* is responsible for the review and permit approval of

development and re-development including implementation of the stormwater *Water Quality Manual*, as well as the *Green Development Practices Manual.*

- *The Water Division* provides planning, design, construction, operation, and maintenance of the public drinking water systems. The flushing of water lines, emergency system repairs and limiting and tracking of their Division's use of pesticides and herbicides are activities the Water Division undertakes that fall within the NPDES MS4 permit. The Natural Resource protection program is also housed within the Water Division. This program ensures compliance with temperature TMDLs and the Endangered Species Act.
- *The Parks and Recreation Division* operates, maintains, plans, and acquires Gresham's parks. Of the parks within Gresham, eight are directly adjacent to open waterways. The Parks Division is responsible for limiting and tracking of their Division's use of pesticides and herbicides, maintenance of litter receptacles, using native vegetation where appropriate, reporting dumpsites, and reporting unusual discharges in the waterways.
- *The Wastewater Services Division* is responsible for sanitary sewer master planning, design, review, and contract administration of new infrastructure projects; compliance with the City's wastewater NPDES permit; maintaining the public system to help prevent sanitary leaks or infiltration into the stormwater system; limiting and tracking of their Division's use of pesticides and herbicides; and implementing the Pre-Treatment Industrial Inspection program to monitor industrial point source discharges to the sanitary system and, where applicable, impacts to the stormwater system. Wastewater Services also manages the 1200COLS stormwater permit for the wastewater treatment plant.
- *The Recycling & Solid Waste Program* is responsible for managing curbside garbage, yard debris, used oil, & recycling collection and implements programs that foster waste prevention and all public education efforts related to these activities for businesses and residents. This group also assists Metro Regional Services with delivery of household hazardous waste collection events.

Other city offices having a role in the stormwater NPDES MS4 and UIC programs include:

- *The Mapping Program* is responsible for supporting various program monitoring efforts such as mapping the public infrastructure, mapping streams, watersheds, maintenance schedules, etc.
- *The Community Relations Program* is responsible for supporting all public involvement and education efforts for the City.
- *Code Compliance* is responsible for enforcement of city code and ordinance violations.
- *Facilities Maintenance* is responsible for maintaining various city-owned properties and utilizing stormwater best management practices to limit pollutant sources.
- *Urban Design & Planning* assists with short and long range planning for city development that is codified in the Community Development Plan (Vol 1-3).
- *City Attorney's Office* assists with review of the Legal Authority element of the permit as well as regular updates to city code.
- *Fire & Emergency Services* assists with spill response (HAZMAT team) related to hazardous chemical storage.

See Figures 1 and 2 which are organization charts for the Department of Environmental Services and the Watershed Division, respectively.

Figure 1. Department of Environmental Services Organization Chart (updated December 2016)

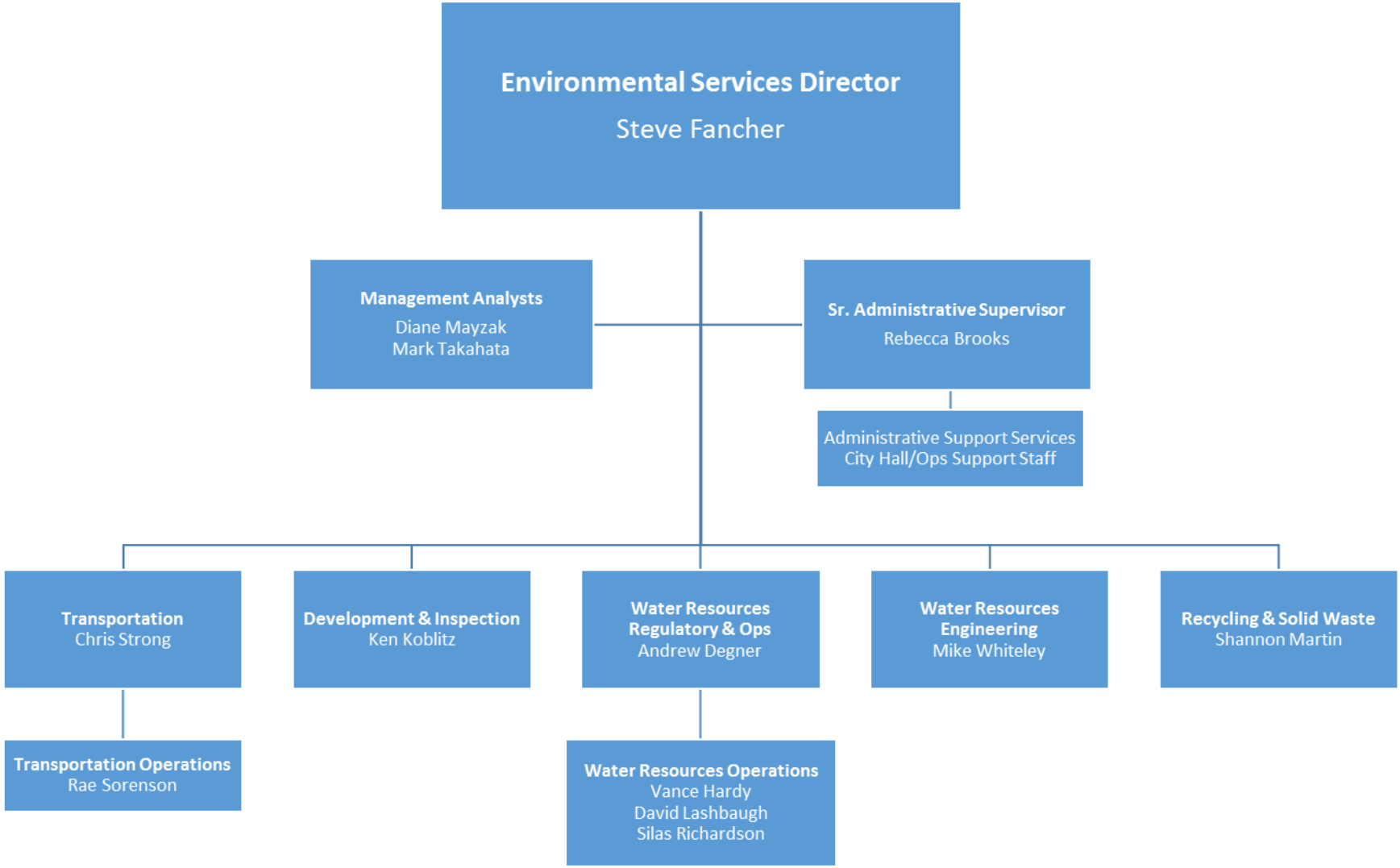
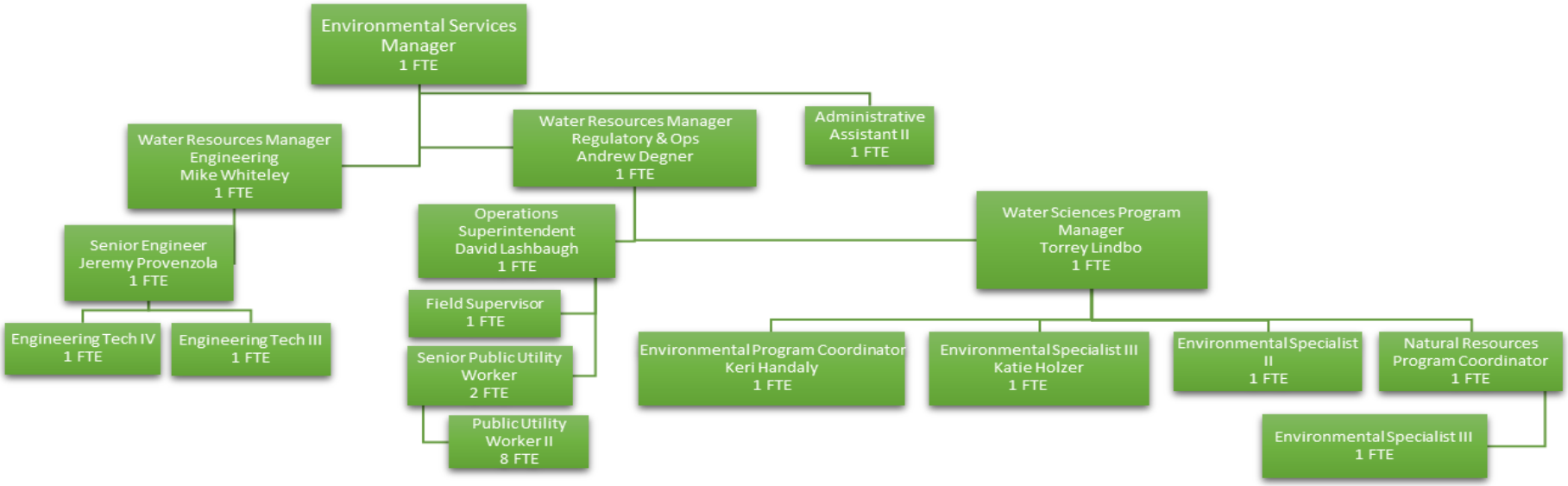


Figure 2. Watershed Division Organization Chart[2] (updated December 2016)



[2] Names of persons with primary responsibility for compliance with the UIC WPCF permit are shown. See Appendix C for contact information and an explanation of the role served by each person.

Adaptive Management

As described in the WPCF permit in Schedule D 6. Adaptive Management, the City follows an annual adaptive management process to assess and modify, as necessary, program elements to achieve reductions in stormwater pollutants. This includes consideration of available technologies and practices; review of monitoring data generated by the implementation of the monitoring plan and corresponding analysis of the data; review of goals and tracking measures; and evaluation of City resources available to implement the technologies and practices.

Permit Requirements

Schedule D.5. of the WPCF permit for City of Gresham UICs requires submittal of a UIC Management Plan (UICMP) for DEQ approval. Once approved, the plan must be implemented.

> *"…The management plan must include a description of how the elements listed below will be implemented in order to protect groundwater quality:*
>
> *a. Stormwater monitoring, including how you will use stormwater monitoring results to ensure compliance with the action levels in Schedule A, Table 1;*
> *b. Injection system decommissioning;*
> *c. Employee education and public outreach;*
> *d. Injection system operation and maintenance;*
> *e. Protecting injection systems from accidental spills or illicit disposal of wastes or contaminants; Preventing injection of stormwater from loading docks, refueling areas, areas of hazardous and toxic material storage or handling, materials storage or handling areas, or other discharges that may contain pollutants above levels of concern;*
> *f. Housekeeping practices to protect groundwater quality;*
> *g. Facility designs or practices that allow you to block discharge into any underground injection systems in the event of an accident, spill, or emergency fire-fighting activity."*

Organization of this Plan

This management plan is comprised of several separate documents, which are referenced, described, and/or included in the ensuing sections and appendices.

For each permit-required element, the requirement is shown, followed by a reference to the section or document that explains how the City plans to manage that element to protect groundwater quality. The heading "Required Element" is followed by the letter associated with the paragraph in the permit that requires inclusion of that element.

Overview of City Commitments

Required Element a:

> *Stormwater monitoring, including how you will use stormwater monitoring results to ensure compliance with the action levels in Schedule A, Table 1;*

Reference: The Stormwater Monitoring Plan was submitted to DEQ on October 2, 2012 and is intended for inclusion among the documents DEQ will make available for public comment prior to finalizing and issuing the WPCF permit. The plan is dated October 2, 2012, and is available for review at the City by appointment.

Required Element b:

> *Injection system decommissioning;*

Reference: The City's decommissioning plan is provided in Appendix A.

Required Elements c, d, e, f, and g:

- *Employee education and public outreach;*
- *Injection system operation and maintenance;*
- *Protecting injection systems from accidental spills or illicit disposal of wastes or contaminants; Preventing injection of stormwater from loading docks, refueling areas, areas of hazardous and toxic material storage or handling, materials storage or handling areas, or other discharges that may contain pollutants above levels of concern;*
- *Housekeeping practices to protect groundwater quality;*
- *Facility designs or practices that allow you to block discharge into any underground injection systems in the event of an accident, spill, or emergency fire-fighting activity.*

Reference: The City's UICMP Best Management Practices are provided in Appendix B and are summarized in Table A, on page 8. With exception of UIC-specific activities that have been added to comply with the WPCF permit, the BMPs are derived and updated from the City's NPDES Stormwater Management Plan (SWMP).

Table A. SWMP BMPs that address WPCF Permit-Required Management Plan Elements

Permit-Required Element	SWMP Component* and BMP Number
Employee education and public outreach;	Component #5: EDU 1: A. Ensure Staff/Stakeholder Training; B. Educate Residents; C. Educate Businesses
Injection system operation and maintenance;	Component #1: RC 1, 2, 3, 4A, 5, 6:
Protecting injection systems from accidental spills or illicit disposal of wastes or contaminants;	Component #2: ILL 1A&B, 4A, 5, 6, 7 Component #4: CON 1, 2, 3
Preventing injection of stormwater from loading docks, refueling areas, areas of hazardous and toxic material storage or handling, materials storage or handling areas, or other discharges that may contain pollutants above levels of concern;	Component #3: IND 1/2A
Housekeeping practices to protect groundwater quality;	Component #2: ILL 4B&C
Facility designs or practices that allow you to block discharge into any underground injection systems in the event of an accident, spill, or emergency fire-fighting activity.	Component #2: ILL 4A

Gresham UIC Decommissioning Plan

DEQ Requirements

The following DEQ documents were referenced in the development of this UIC Decommissioning Plan:

- OAR 340-044-0040 (Decommissioning and Conversion Requirements for Underground Injection Systems)
- DEQ draft applicant-review WPCF permit dated September 10, 2012
- DEQ Fact Sheet, Closure of an injection System (DEQ-11-WQ-062, 2/7/12)

DEQ UIC Registration Pre-Closure Notification (DEQ-08-WQ-039, 08/08)
As the governing document, OAR 340-044-0040 is copied below, along with the rule it references: OAR 690-240-0030.

OAR 340-044-0040

"Decommissioning and Conversion Requirements for Underground Injection Systems

(1) When an underground injection system is no longer in use for injection or is abandoned, the owner or operator shall decommission the system or convert the system to another type of well in a manner that will prevent the movement of contaminants into groundwater.

(2) The owner or operator shall notify the Director of the owner's or operator's intent to decommission or convert the injection system 30 days prior to closure or conversion.

(3) The owner or operator shall comply with all reporting, licensing and design requirements of all applicable state and local laws when decommissioning or converting an injection system. These include OAR 340-071 for on-site sewage disposal systems, 690-200 and 690-220 for water supply wells, 690-240-030 for other holes and 632-020 for geothermal wells.

(a) Any soil, gravel, sludge, biosolids, liquids or other material removed from or adjacent to the injection system shall be characterized and disposed in a manner consistent with all applicable local, state and federal laws.

(b) Except for on-site sewage disposal systems decommissioned according to OAR 340-071 and injection systems for storm water runoff from rooftops, proper decommissioning of an injection system shall be certified by a professional geologist, engineering geologist, or professional engineer registered in the State of Oregon.

(c) The following decommissioning requirements apply to drilled wells, boreholes and sewage drain holes or sewage drill holes unless waived in writing by the Director:

(A) The owner or operator shall immediately render the system to be completely inoperable by plugging and sealing to prevent the vertical movement of fluids.

(B) All portions of the well that are surrounded by "solid wall" formation shall be plugged and filled with cement grout or concrete; or

(C) The top portion of the well must be effectively sealed with cement grout or concrete to a depth of at least 18 feet below the surface of the ground, or wherever this method of sealing is not practical, effective sealing must be accomplished in a manner approved in writing by the Director.

(4) If the Director determines that the injection system is high risk or potentially contaminated, the Director may require submission of a closure plan for review and approval prior to decommissioning. The owner or operator shall perform any sampling requested by the Director. The results of such sampling shall be reported to the Director. Detection of soil or groundwater contamination from the injection system shall be reported to the Director within 14 days of observation or receipt of sampling results."

OAR 690-240-0030

"Other Holes: General Performance and Responsibility Requirements

(1)(a) Other holes are constructed for a variety of purposes which may or may not encounter ground water. Other holes are constructed using a wide variety of equipment and are not typically designed to access water in order to collect subsurface information. Other holes include but are not limited to: temporary (abandoned within 72 hours) wetland delineation holes, gravel pits, pits for removal of underground storage tanks (UST), pilings, tunnels, post holes, excavation and construction holes, elevator shafts, and trenches.

(b) Although enforcement actions may be exercised against other parties, the landowner of the property where the other hole is constructed is ultimately responsible for the condition and use of the other hole.

(2)(a) In order to protect ground water, all other holes shall be constructed, operated or used, maintained, and abandoned in such a manner as to prevent contamination or waste of ground water;

(b) In order to protect ground water, all other holes, when abandoned, shall be abandoned in such a manner that water cannot move vertically in them with any greater facility than in the undisturbed condition prior to construction of the other hole;

(c) Conversion of other holes to a water supply well, monitoring well, or geotechnical hole shall be considered by the Water Resources Department on a case-by-case basis;

(d) If the other hole is an excavation for removal of an underground storage tank, water samples may be taken without adhering to the licensing, start card/fee, monitoring well report and monitor well conversion requirements."

The draft permit allows for a convenient way of meeting the notification requirement. It states[1]:

> *"Schedule B.5. Closing an Underground Injection System. You must provide prior notice of converting or closing any underground injection system you own or operate. Either you may notify us in advance by listing future decommissioning plans in your annual report as in Condition 4 above, or you may notify us 30 days prior to closure as specified in OAR 340-044-0040."*

The requirements listed in the fact sheet and pre-closure form are summarized below:

Notification to DEQ requires:

1. Filling out the UIC Pre-Closure Notification form (DEQ-08-WQ-039, 08/08)
2. Providing DEQ with data about any sediment that will be removed
3. Paying a fee (currently $100 for each UIC to be decommissioned)

UIC Pre-Closure Notification form requires the following information:

- Facility name, location and contact
- Facility description, including latitude, longitude, year of construction, depth of UIC, depth to groundwater, distance to nearest domestic/public water well
- Copy of decommissioning sampling plan (below)
- Signature of legally authorized representative

Decommissioning Sampling Plan:

1. Assess bottom of UIC to be decommissioned to determine if water or sediment are present
2. Sampling of water or sediment within a single UIC will only occur if UIC meets one of the following criteria:
    a. Visible evidence of contamination is observed within UIC;
    b. The UIC is located within 500 feet, or the two year time of travel, to a water supply well; or
    c. The UIC catchment area encompasses a cleanup site with a confirmed release.
3. If water or sediment are present in a UIC meeting above criteria, collect sample of water and sediment within the UIC.[2] Sediment and water not meeting above criteria will be collectively characterized, along with other debris from stormwater infrastructure maintenance, to ensure proper disposal occurs. Current analytes include:
    a. Total Petroleum Hydrocarbons for gasoline (TPH-Gx)
    b. Total Petroleum Hydrocarbons for diesel (TPH-Dx), and
    c. RCRA-8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver) using Toxicity Characteristic Leaching Procedure (TCLP) method.
4. Compare results to applicable standards, which may include any or all of the following:
    a. Table 1 action levels from WPCF permit,
    b. Drinking water maximum contaminant levels (MCLs)

[1] The City will at all times comply with the rule, including when notification occurs via the annual report.

[2] Debris from all stormwater devices owned and operated by the City (catch basins, sedimentation manholes, swales, etc) is dewatered; the solids are tested; and the liquid and solids are disposed of in conformance with state and federal requirements.

c. DEQ Risk-based concentrations for individual chemicals

UIC Closure

1. Properly dispose of any water and/or sediment from bottom of UIC based on sampling results
2. Remove the top 4 to 8 feet of the UIC system (typically cone and first perforated segment)
3. Place fill material (typically 1" – 0" clean aggregate) in UIC to fill all voids
4. Add 24" of controlled density fill on top of aggregate (and below any asphalt lifts or other surface cover).
5. Send closure report to DEQ

The UIC Closure Report requires the following information:

- Date of closure
- Description/diagram/photos of how system was closed (materials, contractor)
- Summary of sampling data, including chain of custody forms and lab reports
- Copies of receipts for fill materials used in decommissioning and for disposal of any materials removed from UIC
- Closure report must be certified by a registered State of Oregon geologist, professional engineer with geotechnical expertise, or engineering geologist

Situations in which Decommissioning May Occur

There are at least three situations in which the City may decide to decommission a UIC. They include:

1. The UIC is no longer functioning properly or serving a useful purpose
2. The UIC is being replaced by a new, nearby UIC; in which case the City generally seeks to convert the original UIC to a sedimentation manhole by sealing the bottom and blocking the perforations in order to provide pretreatment for the new UIC
3. The UIC creates an unacceptable risk to groundwater that can't be addressed through additions or modifications to the UIC

City Decommissioning Plans

As of October 12, 2012, the City has plans to decommission one UIC that is no longer functioning properly and replace it with a new, nearby UIC. The City has identified four UICs for which the modeled waste management area overlaps a water well, and the City's consultant is developing options to retrofit the UICs to ensure that groundwater is protected. If the best option for any one of those UICs includes decommissioning, the City will follow the relevant DEQ requirements for decommissioning.

In addition to the four UICs that require some type of retrofit, the City owns 16 structures that originated as UICs, but were discovered during the 2009 system-wide survey to no longer serve that purpose. All pipes leading to these former UICs were found to be permanently blocked; in at least two cases, adjacent UICs had been installed to collect the stormwater. The City will

discuss with DEQ whether these legacy structures require further action, and take any agreed-upon action.

The 16 former UICs have been identified by the City as a lower priority for decommissioning or retrofitting because they are unlikely to cause water quality exceedances. As stated previously, the structures receive no influent. They are unlikely to impair groundwater based on past infiltration of stormwater, given that robust statewide stormwater data shows only rare exceedances of drinking water standards at the point of discharge, and there is no indication that the water quality at water wells has been affected by years of stormwater injection. Additionally, over 25 UICs have been formally decommissioned by the Cities of Gresham and Portland over the last ten years, and none of the debris or water in the bottom of those UICs has required cleanup activity.

City of Gresham Underground Injection Control System Plan (UICMP) Best Management Practices

The BMPs described below are derived and updated from the City's Stormwater Management Plan (SWMP) that was written to comply with the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit. The Best Management Practices (BMPs) are predominantly the same for compliance with both the NPDES and WPCF permits and they are applied throughout the City, unless otherwise noted. Modifications have been made in order to comply with elements specific to the UIC permit and to reflect the passage of time and adaptive management that has occurred since the NPDES SWMP was submitted. The BMP naming and organization conventions have been retained so that the City can use one Annual Report to meet the requirements of the two water quality permits. This will prevent administrative inefficiency.

The BMPs are grouped into Components, within which a number of related BMPs are described. The Components include:

Component #1. Structural and Source Control BMPs to Reduce Pollutants from Commercial and Residential Areas (see Table 4.3.2)
Component #2. A Program to Detect and Remove Illicit Discharges and Improper Disposal into the Storm Sewer System (see Table 4.3.3)
Component #3. A Program to Monitor and Control Pollutants from Industrial Facilities (see Table 4.3.4)
Component #4. A Program to Reduce Pollutants in Stormwater Discharges from Construction Sites (see Table 4.3.5)
Component #5. Public Education BMPs (see Table 4.3.6)

Within a Component, each BMP contains the following information:

- Purpose
- Individual tasks that will be carried out as a result of that BMP, including:
  - The responsible group
  - A description of implementation activities
  - Program commitment*
  - Permit year of commitment
  - Program goals (if any)**
  - Measurable Goals***

*Program Commitment includes the timeline for which the BMP will be initiated, implemented, or completed. "Ongoing" refers to an annual commitment to continue the BMP for the duration of the permit term.

**Program Goals are activities that the City has identified as potential program enhancements, should additional resources (staff time and budget) become available. In some cases, initiatives are planned for discussion and recommendation, but most are subject to legal review and City Council approval and are therefore not commitments at this time. The program commitments do not include the BMPs listed as program goals.

***Measurable Goals include the reportable outcome that will be tracked, recorded and reported in the annual report, such as street miles swept, debris removed, number of trees planted, number of persons reached, etc. Location is city-wide, unless otherwise noted.

Component #1 (RC 1-6)
Structural and Source Control BMPs to Reduce Pollutants from Commercial and Residential Areas

RC 1 Stormwater System Maintenance Program:

- Pipe Cleaning
- Catch basin Cleaning
- Maintain Public Water Quality Facilities
- System Repair and Maintenance
- Manhole (Sedimentation & Control Release types) and Detention Line Cleaning
- Ensure Proper Disposal
- Underground Injection Control Maintenance and Cleaning

RC 2 Planning Procedures:

- Water Quality Manual for New and Re-development
- Promote Low Impact Development (LID) Practices
- Private Water Quality Facility Maintenance Program
- Master Plan Update
- Urban Canopy Initiatives

RC 3 Maintain Public Streets:

- Street Sweeping
- Deicing
- Standard Operating Procedures for Road Maintenance Activities

RC 4 Retrofit & Restore System for Water Quality:

- Water Quality Retrofits

RC 5 Monitor Pollutant Sources from Closed or Operating Municipal Waste Facilities:

- Pollutant Source Evaluation

RC 6 Reduce Pollutants from Pesticides, Herbicides and Fertilizers:

- Integrated Pest Management Program

EDU 1 Stormwater Education Program

- Educate Businesses
- Educate Residents

TABLE 4.3.2 - Structural and Source Control BMPs to Reduce Pollutants from Residential and Commercial Areas (RC 1-6)

BMP Descriptions	BMP Implementation	Measurable Goals	Reporting Elements
RC 1 Stormwater System Maintenance Program			
Purpose: To promote efficient and effective maintenance of the stormwater system that will lead to the removal of targeted pollutants and optimize the function and lifespan of the MS4/UIC system.			
Introductory Note With Respect to Addressing this Requirement: The City performs maintenance as needed to ensure the proper functioning of the stormwater system with respect to both flow and water quality. Over the permit term, the City will optimize the effectiveness of its maintenance activities by shifting resources among the BMPs listed below to respond to on-the-ground needs, as necessary and as part of the City's annual adaptive management process to ensure efficient and effective implementation of BMPs; and will notify DEQ as required by the MS4/UIC permits. Measurable goals are provided for each BMP, but as the size of the public system continues to grow, the City may not always have proportional maintenance budget growth or staff allocations. Therefore, the level of effort on a specific BMP may vary over the permit term, but the City will endeavor to ensure that the total amount of resources does not fall below current levels.			
A. Pipe Cleaning	**BMP Owner**: Watershed Division Operations & Maintenance group **Implementation Activities:** The City's stormwater system currently encompasses approximately 220 miles of pipes that drain to both surface and groundwater. Historically, cleaned lines are mapped and new sections of pipe are identified for inspection and cleaning (if necessary) each year. When crews conduct the inspection and/or cleaning, they can detect off-set joints and collapsed pipe which leads to repairs that will limit pollutants from being introduced into stormwater and protects the City's investment over the long term.	**Program Commitment:** Clean & inspect 5-10 miles of pipe per year. **Permit Year of Commitment:** ongoing	- Track number of pipe miles inspected/cleaned per year. - Track volume of materials collected per year.
B. Catch basin Cleaning	**BMP Owner:** Watershed Division Operations & Maintenance group **Implementation Activities:** The City currently owns over 6,500 catch basins that drain to both surface and groundwater. This number grows by about 50 to 100 per year. When cleaning is complete, the catch basin lateral pipes are inspected and deficiencies are noted for repair. Maps of the maintenance areas are made annually to ensure efficient routes and scheduling.	**Program Commitment:** Clean or inspect publicly-owned catch basins that drain to surface or groundwater water once per year. **Permit Year of Commitment:** ongoing	- Track number of catch basins cleaned per year. - Track volume of materials collected per year.

Table 4.3.2 (continued)

BMP Descriptions	BMP Implementation	Measurable Goals	Reporting Elements
C. Maintain Public Water Quality Facilities	**BMP Owner:** Watershed Division Operations & Maintenance group **Implementation Activities:** The City currently owns and operates about 170 water quality facilities, some of which drain to groundwater. The City maintains a database to manage the inventory, maintenance, and cleaning details of the publicly-owned water quality facilities. From 2002-2007, the City prioritized the inspection and major cleaning of ponds, swales and proprietary devices. Based on these efforts, staff estimate that an average of 20-25 facilities per year will be cleaned to optimize performance. During certain years, major pond rehabilitation efforts and large regional water quality facility maintenance will be necessary. Therefore, during these years, the stated goal in terms of overall quantity may not be met, but an average will be met over the permit cycle. Regional Facilities: (3 total) • Kelly Creek Pond and Swale—drains 480 acres • Columbia Slough Water Quality Facility—drains 709 acres • Fairview Creek Water Quality Facility—drains 959 acres Activities that may be conducted during cleaning include the following: Ponds: (32 total) Litter pickup, mowing, weeding, invasive species removal, planting enhancements, and vegetation management to ensure adequate access to the appropriate structures of the pond, periodic excavation of sediments in the basin to ensure pollutant removal and periodic removal of woody debris buildup that clogs the inlet structure. Occasionally, rehabilitation of maintenance access roads is also necessary to support large equipment, resulting in considerable cost in a budget cycle and limiting the amount of facilities that can be addressed in a given year. Swales/Ditches/Rain Gardens: (100+ total) mowing, weeding, invasive species removal (infrequently), replanting, and occasional removal of sediment build up and reconstruction as needed to maintain performance. Proprietary Devices: (113 total) (i.e., underground vaults with stormwater filters or vortechnic settling devices, currently over 500	**Program Commitment:** On average, clean 20-25 facilities per year over the permit cycle. Annual cleaning totals may vary because of the intensive labor efforts needed to maintain the larger regional facilities in a particular year. **Permit Year of Commitment:** ongoing	- Track number of and type of facilities inspected per year. - Track type of cleaning activities performed by facility type each year. - Track volume of materials removed each year.

Table 4.3.2 (continued)

BMP Descriptions	BMP Implementation	Measurable Goals	Reporting Elements
	cartridges to maintain) Maintenance of these devices includes sediment/debris removal by cleaning and filter cartridge replacement. Devices that have been installed for typically 4 years or less are inspected annually. Devices that are older than four years tend to require less frequent cleaning because of the presence of mature landscaping and fully developed neighborhoods and are therefore inspected every 2-3 years. Staff typically replace one to fifteen filters per device inspected each year.		
D. System Repair and Maintenance	**BMP Owner:** Watershed Division Operations & Maintenance group **Implementation Activities:** This includes repair of the pipe system and minor maintenance to ditches, culverts, inlets, off-road systems, etc that helps reduce the incidence of flooding and helps protect the City's investments. Records of repairs and locations are kept for long-term asset management and resource planning. (UIC-specific repair and maintenance is described under G.)	**Program Commitment:** Repair and maintain the publicly-owned system to enhance function and limit water quality pollutants. **Permit Year of Commitment:** ongoing **Program Goal:** Implement capital improvement projects as staff time and resources allow to retrofit off-road water quality facilities in order to provide ease of access for maintenance equipment.	-Track the number of hours dedicated to repair & maintenance activities.
E. Manhole/ Detention line Cleaning	**BMP Owner:** Watershed Division Operations & Maintenance group **Implementation Activities:** The City currently has approximately 165 sedimentation manholes and 137 control release manholes	**Program Commitment:** Inspect 75% of	- Track number of structures cleaned/repaire

Table 4.3.2 (continued)

BMP Descriptions	BMP Implementation	Measurable Goals	Reporting Elements
	(CRMH) that are connected to detention lines that drain to both surface water and groundwater.	manhole structures annually, as appropriate; clean detention lines only as needed, based on a visual inspection while cleaning the CRMH. **Permit Year of Commitment:** ongoing	d. - Report volume of debris removed.
F. Ensure Proper Debris Disposal	**BMP Owner:** City-wide Operations and Maintenance groups **Implementation Activities:** Debris from public infrastructure maintenance is taken to the City's dewatering station where it is dumped and dried. The City's dewatering station is plumbed to the wastewater system. The dried debris is hauled to a DEQ approved disposal site. The debris is tested on an annual basis to verify that it does not meet the definition of hazardous waste. To date, the debris from these activities has never required special disposal due to contamination.	**Program Commitment:** Ensure that the City utilizes environmentally sound disposal practices and services. **Permit Year of Commitment:** ongoing	-Keep records on annual disposal services utilized. -Keep annual debris testing data.
G. Underground Injection Controls (UICs) Maintenance and Cleaning	**BMP Owner:** Watershed Division Operations & Maintenance groups **Implementation activities:** The City currently owns approximately 1,100 UICs, for which relevant information was provided in the Oct 2, 2012 System-wide Assessment. UIC maintenance and cleaning occurs on an as-needed basis to maintain functionality. Further study is needed to identify which UICs require more or less frequent cleaning. Until such study has occurred, the City will continue current policy which includes cleaning after minor flooding has been observed due to a full UIC, with opportunistic, proactive	**Program Commitment:** Under the City's UIC WPCF permit, report all maintenance and cleaning activities. **Permit Year of Commitment:** ongoing	-Keep records of annual maintenance locations and cleaning activities. Report findings of study and adaptively manage

Table 4.3.2 (continued)

BMP Descriptions	BMP Implementation	Measurable Goals	Reporting Elements
	cleaning occurring when resources are available. City maintenance also includes infrequent removal of the rock and sediment surrounding a UIC, with replacement using clean rock to improve infiltration rates, thereby increasing the useful life of the UIC.	Conduct further study to determine whether indicators exist that can guide cleaning frequency. Identify in the Annual Report the timeframe for the study or for discontinuing study efforts based on findings and conclusions.	cleaning frequency, as applicable.

Table 4.3.2 (continued)

BMP Descriptions	BMP Implementation	Measurable Goals	Reporting Elements
RC 2 Planning Procedures			
Purpose: To promote effective development and implementation of City code and policies that will help limit stormwater pollutants.			
A. Water Quality Manual for New and Re-Development	**BMP Owner:** Watershed Division, Development Engineering, Building Division **Implementation Activities:** The City's current *Water Quality Manual/Green Development Practices Manual* provides guidance to developers that is needed for meeting the stormwater quality treatment requirements as prescribed in the *Gresham Community Development Code*, *Gresham Revised Code*, and the *Gresham Public Works Standards* for surface and groundwater protection. These *Manuals* illustrate and describe the disturbance threshold for compliance, storm derivation for design standards, stormwater management principles and techniques that are aimed at achieving water quality goals, with a focus on preserving or mimicking the natural hydrologic cycle (use low impact development/green infrastructure techniques), whenever possible. These *Manuals* are available on the City's website; they provide developers and design professionals with specific requirements for reducing the impacts of stormwater runoff (water quantity) and pollution (water quality) resulting from new development and redevelopment within the City of Gresham.	**Program Commitment:** 1) Implement the *Water Quality Manual* standards and biennially determine whether updates to the document are necessary. Update the document, at a minimum, once during the permit cycle. 2) Provide training opportunities to *Manual* users whenever the *Manual* is significantly updated. **Permit Year of Commitment:** ongoing	- Track the number, location, acreage and land use of new and re-development projects. - Track the number and type of private water quality facilities installed to comply with new development standards. - Delineate and GIS map the drainage areas of the private facilities installed to comply with new development standards. - Track training activities.

Table 4.3.2 (continued)

BMP Descriptions	BMP Implementation	Measurable Goals	Reporting Elements
B. Promote Low Impact Development (LID) Practices	**BMP Owner:** Watershed Division, Development Engineering, Building Department **Implementation Activities:** The City has two manuals that set the policy for the use of Low Impact Development (LID) for development. (Also referred to as Green Infrastructure in the City's NPDES MS4 permit). The *Water Quality Manual* describes methods available to developers for reducing stormwater runoff volumes and delaying the peak stormwater runoff flows from developed sites. The City also has the *Green Development Practices for Stormwater Management Manual*, which was originally designed for development in the Pleasant Valley & Springwater plan areas. This manual contains a simplified approach that streamlines sizing, design and maintenance submissions which acts as an incentive to the development community to use LID. Since the manual's inception, it has commonly been utilized for stormwater management for development throughout the city, where LID is appropriate. While the water quality treatment standards are required, developers are afforded flexibility in BMP selection based on their various site considerations such as cost, topography, safety, drainage, full build out intent, etc. However, the primary factor they are required to consider includes surface infiltration to mimic the natural hydrologic cycle. If on-site stormwater management methods are not feasible, the City's options for determining alternative options are described in the *Gresham Community Development Code*. The City also adopted *Green Street Standards* for the Pleasant Valley & Springwater areas in July 2007 that include standard details for rain gardens and stormwater planters in the street right-of-way. Standard cross-sections, plan views, and details make it easy for developers and City design staff to incorporate into new projects across the city, in addition to the Pleasant Valley and Springwater area. The City will continue to evaluate the *Water Quality Manual*, the *Green Streets Standards*, and *Green Development Practices Manual* to further refine and incorporate LID BMPs where appropriate.	**Program Commitment:** Implement practices or programs that promote the use of low impact development techniques and report on activities annually. **Permit Year of Commitment:** ongoing	- Track the location, drainage area and type of LID practices that are implemented.

Table 4.3.2 (continued)

C. Private Water Quality Facility Maintenance Program	**BMP Owner:** Development Engineering, Watershed Division **Implementation Activities:** City code provides the legal authority for the City to inspect and require private facilities to be maintained and function for water quality and public safety. Since about 2002, the City also collects a maintenance agreement from the facility developer/owner. The maintenance agreement notes the type of water quality treatment facility constructed, type and frequency of maintenance to be conducted and the frequency of inspection by the owner necessary to ensure proper functioning. The agreements are reviewed by Development Engineering staff and/or WD Engineering staff for completeness. Requested changes, if any, are resubmitted to the developer for correction. A Memorandum of Agreement (MOA) to maintain stormwater facilities is then filed with Multnomah County prior to recordation of the plat. If a plat is not required as part of the development, the MOA is recorded prior to approval of the construction plans. The original copy of the maintenance agreement and a photo copy of the MOA are generally kept on file at the City. The WD Engineering and the WD Operations & Maintenance groups maintain a tracking database of the status of all finalized agreements. Some facilities were built prior to the requirement for maintenance agreements. There are currently just over 150 properties with private water quality facilities. The City collects data on all newly installed facilities, including an estimate of the treated area. These estimates are mapped in the GIS system for planning and evaluation purposes. **See Also: Stormwater Education Program** (See Table 4.3.6) A description of the City's education BMP for privately-owned or operated stormwater quality management facilities is included under Component #5, in Table 4.3.6.	**Program Commitment:** 1) Collect and record maintenance agreements for private water quality facilities that legal code allows. **Permit Year of Commitment:** ongoing 2) Develop a program to ensure private facilities are being adequately maintained. The goals for program development include example actions such as the following: ▪ Collection of maintenance agreements for those facilities without recorded agreements using technical assistance. ▪ Self reporting requirements/Internal auditing of paperwork ▪ Inspections of facilities **Permit Year of Commitment:** ongoing	- Track the number, type, year installed, and watershed location for private water quality facilities. - Report progress on program development related to private facility maintenance annually, as applicable.

Table 4.3.2 (continued)

		Program Goals: ▪ Create an on-line submittal form for maintenance agreements to streamline the submittal process for developers.* ▪ To take advantage of the City's new civil penalty authority, consider changing code to require maintenance according to a maintenance manual. This could make maintenance agreements obsolete.* *This requires financial resources and staff time that is not currently available.	
D. Master Plan Update	The City has updated all of its master plans to include water quality as part of the overall planning effort. These plans are expected to be effective for approximately 20 years. **Updated Original Stormwater Master Plans:** Fairview Creek Master Plan (May 2003) West Gresham (Columbia Slough) (April 2005) Johnson Creek Master Plan (December 2005) Kelly Creek Master Plan (November 2007)	**Program Commitment:** Include water quality goals in the City's master plans.	- Report on updates to Master Plans. - Master plan project implementat

Table 4.3.2 (continued)

	New Master Plans: Pleasant Valley Master Plan (July 2004) Springwater Master Plan (December 2005) Johnson Creek Master Plan Executive Summary including Pleasant Valley and Springwater (January 2006) Pleasant Valley Stormwater Master Plan (Updated 2007)	**Permit Year of Commitment:** ongoing, as applicable	ion with water quality benefits are reported in BMP RC4: Water Quality Retrofits

Table 4.3.2 (continued)

E. Urban Canopy Initiatives	**BMP Owners:** Watershed Division, Urban Design & Planning Department **Implementation Activities:** The City of Gresham recognizes that trees in an urban setting are an integral part of a variety of approaches to offset impervious surface runoff caused by urban development. They intercept rain, infiltrate stormwater, and evapotranspire water, all of which are effective at slowing and reducing stormwater runoff. In recent years the City has adopted additional stream protection overlays known as habitat conservation areas that conform to Metro's Title 13 Urban Growth Functional Plan and afford additional protection to riparian areas, wetlands, and certain upland areas from most types of development.	**Program Commitment:** 1) Create and Implement an Urban Forestry Management Plan by November 1, 2012 2) Utilize Code Compliance staff to help ensure urban canopy objectives are supported. 3) Collect fines from tree removal violations that may be used for tree replacement efforts. 4) Review code to ensure urban canopy objectives are supported. 5) Conduct community outreach to help achieve urban canopy protection goals in accordance with the urban forestry	-1) Report on the progress of creating the Urban Forestry Management Plan and annually report on the status of the Plan's implementation -2) Report the number of Code Compliance investigations and outcomes related to tree protection objectives. -3) Report outcomes that result from the collection of tree removal fines. -4) Report code changes, as applicable. See MON 2: Legal Authority and Code Review. -5) Report the type/number of outreach activities conducted and

Table 4.3.2 (continued)

		strategic plan. **Permit Year of Commitment:** ongoing	estimated persons reached. See EDU 1: Stormwater Education Program.

Table 4.3.2 (continued)

RC 3 Maintain Public Streets			
Purpose: To promote efficient and effective maintenance activities related to the management of the City's streets in order to limit pollutants to stormwater.			
A. Street Sweeping	**BMP Owner:** Transportation Division **Implementation Activities:** The City of Gresham Transportation Division has contracted out for services to provide street sweeping for the majority of the city during the months of March through December. The City entered a new contract in early 2010 that has an option to renew up to four additional years beyond the first year. Additionally, the City owned-sweeper will provide supplemental sweeps, including weekly sweeps of the downtown commercial district and enhanced leaf pickups in the fall for the Watershed Division. The City's prioritization for using its own sweeper focuses on higher vehicular use areas, higher pedestrian traffic areas downtown, City-owned parking lots, and removal of accumulated leaves in the fall to prevent flooding. The City may also respond, if necessary, to small traffic accident clean up needs and clean up of excess sediment or landscaping materials on streets and illegal construction debris dumping that sometimes occurs during new development. The City has reviewed national data related to the effects of street sweeping on water quality. To date, study findings are inconclusive or contradictory about what the optimal frequency of sweeping and type of machinery to use in order to maximize water quality effects. Therefore, the City has selected the frequency which can be completed by the contractor based on current road miles, maximum miles per hour of the street sweeper, and weather. (Currently, there is little return for sweeping during the wettest months of January and February because the volume of water collected greatly exceeds the sediment collected, in turn requiring frequent decanting, making the effort very inefficient.) In order to gain extra sweeps during the dry months, an additional truck and driver would have to be employed, which drives up the cost significantly. There are currently no additional resources to conduct enhanced frequencies at this time.	**Program Commitment:** Provide 8-10 sweeps of the city per year. **Permit Year of Commitment:** ongoing	- Track & report the number of sweeps per year, total miles swept and total debris collected.

Table 4.3.2 (continued)

B. Deicing	**BMP Owner:** Transportation Division, Watershed Division **Implementation Activities:** The City of Gresham road safety and management procedures are described in a winter response standard operating procedure that is designed to maximize public safety and limit negative impacts to the environment. The techniques utilized by the City are planned in order to limit applications of sand and gravel, which are estimated to be 50% to 70% recoverable and to minimize overspray or travel of anti-icing and deicing products. The City's Watershed Division assists the Transportation Division by evaluating products using performance, cost, environmental impacts, and corrosivity to determine the best options for use. This report is titled, *Anti-icing and Deicing Product Assessment* and is available upon request.	**Program Commitment:** Continue to implement deicing activities in a manner that limits impacts to water quality. At least once per permit cycle, review the *Anti-icing and Deicing Product Assessment*, update if needed to reflect new data or products. **Permit Year of Commitment:** ongoing	- Track and report an estimate of sand/gravel and deicing product applied to Gresham roads. -Track the miles of road to which sand/gravel or deicing products are applied.

Table 4.3.2 (continued)

C. Standard Operating Procedures for Road Maintenance Activities	**BMP Owner:** Transportation Division, WD Natural Resource program **Implementation Activities:** The City has developed a manual titled "*Standard Operating Procedures for Wetland, Waterway, and Habitat Protection*" to guide City staff and contractors in resource protection efforts when working near jurisdictional resources. This Manual was initially based on ODOT's routine road maintenance manual, which they developed in collaboration with NOAA fisheries to gain limit 10 protection under the endangered species act. Gresham's practices include use of the ODOT standards, plus additional policies/standard operating procedures staff deemed necessary for identification and protection of jurisdictional resources areas, listed species and their habitats, and water quality. The Manual is updated as necessary to reflect any regulatory changes, or to include information on new species/habitat discoveries, new BMPs, or clarifying information. The first training on the Manual was held march 2009, and was provided to all operations, engineering, and planning staff. Staff responsible for permitting projects or overseeing staff or contractors working on tasks with a reasonable potential to impact resources areas, listed species and their habitats, or water quality, are required to attend trainings.	**Program Commitment:** Implement a road maintenance program that will limit impacts to water quality. **Permit Year of Commitment:** Biennially train appropriate staff (ongoing) Monitor and Adapt Program, as applicable **Permit Year of Commitment:** ongoing	- Track and report implementation of training activities. - Report changes to the SOPs annually, if updated.

Table 4.3.2 (continued)

RC 4 Retrofit & Restore System for Water Quality			
Purpose: To promote effective implementation of the capital improvement program projects and riparian/wetland restoration projects in order to maximize stormwater water quality, protect groundwater, and enhance stream channel function and wildlife habitat, whenever possible.			
A. Water Quality Retrofits	**BMP Owner:** Watershed Division Engineering group **Implementation Activities:** The City looks for opportunities to retrofit the existing storm system through the development of stormwater master plans, all recently updated for the major watershed areas in Gresham including: Fairview Creek, Johnson Creek, Kelly Creek, and the Columbia Slough/West Gresham. These master planning efforts result in capital improvement projects (CIPs) that are based on surface and ground water quality, habitat & riparian buffer restoration, flood control, and conveyance. The Watershed Division CIPs within each Master Plan are ranked and prioritized per watershed for short, medium and long range planning. All projects from all watersheds are then re-ranked in the CIP ranking system to look at city-wide needs, not just the needs within one watershed. Additionally, projects that have more of a regional benefit for the community are given more weight. Other ranking factors include: environmental impact, cost, and public safety. The current CIP list is scheduled for implementation over a 20-year period. The CIP process is based on a rolling 5-year plan, with each year's plan extended to account for the projects that were completed from the previous year and then adding one more year's worth of projects. UIC only: A State Revolving Fund loan was obtained in 2009 to retrofit UICs that are inconsistent with the WPCF permit requirements. Based on extensive analysis, the City plans to retrofit four UICs. Beyond the permit requirements, the City has commissioned a study to evaluate the risk of spills from vehicle accidents, and will take appropriate action to minimize such risk where possible given available resources and Departmental priorities.	**Program Commitment:** Implement a CIP program that will help mimic the natural hydrologic cycle and reduce or treat stormwater pollutants and promote stream and groundwater protection and enhancement in accordance with the City's Water Quality and Green Development Practices Manuals. **Permit Year of Commitment:** ongoing **Program Commitment:** Document a stormwater retrofit strategy for developed areas that are underserved or lacking stormwater controls in a stormwater retrofit plan. **Permit Year of Commitment:** November 1, 2014 **Program Commitment:** Retrofit UICs based upon the City's analysis and permit requirements, and evaluate spill risk **Permit Year of Commitment:** Conduct the	- Track the number, type, watershed location and total drainage area of Watershed Division CIPs constructed for water quality.

Table 4.3.2 (continued)

		analysis and initial follow up retrofits during PY 1-3 of the WPCF permit.	

Table 4.3.2 (continued)

RC 5 Monitor Pollutant Sources from Closed or Operating Municipal Waste Facilities			
Purpose: To ensure that the City has no stormwater pollutant sources stemming from closed municipal landfills.			
Pollutant Source Evaluation	**BMP Owner:** Watershed Division **Implementation Activities:** There are currently no operating landfills or other treatment, storage or disposal facilities for municipal waste within the City's jurisdiction. There is an existing closed landfill that was formerly the Multnomah County dump, also sometimes referred to as Vance Pit. WD staff hired a consultant to conduct an evaluation to determine its potential to contribute stormwater pollutants to the publicly-owned system. The consultant found no significant potential for the site to contaminate stormwater. The report is available upon request.	**Program Commitment:** Ensure that any new municipal waste facilities within the City's permitted area are appropriately permitted and designed, in order to limit the potential for pollutants to enter stormwater.	- Report any new facilities and assessment results.
RC 6 Reduce Pollutants from Pesticides, Herbicides and Fertilizers			
Purpose: To reduce stormwater pollutant sources from public lands.			
Integrated Pest Management Program	**BMP Owner:** City-wide Operations & Maintenance Divisions **Implementation Activities:** The purpose of this BMP is to reduce stormwater pollutants stemming from the use of pesticides, herbicides and fertilizers by addressing the need for, alternatives to, and methods of chemical applications in landscaping, open space management, roadside ditch maintenance, and public facility maintenance. Integrated Pest Management (IPM) is an effective and environmentally sound approach to pest management. Unlike any single method of pest control, IPM programs balance costs, benefits, public health and environmental quality, and avoid unnecessary applications of pesticides, herbicides, and fertilizers. This is accomplished by focusing on correcting conditions that encourage pests and strategically selecting the locations and number of times that pest populations are addressed to maximize the effectiveness of chemical treatment while minimizing the number of applications. The City of Gresham updated their Integrated Pest Management Plan (IPMP) in 2007 based on the City of Portland's latest version. During 2008-2011, the WD staff continued to develop and evaluate the policies to ensure their effectiveness and ability to be applied effectively by staff. Notably, staff identified a lack of local or state integrated pest management trainings and/or certifications as one of the challenges to the ease of implementing this BMP. Staff will continue to develop or seek state and regional support for IPM trainings to further hone this program's efficiency and effectiveness.	**Program Commitment:** 1) Review and evaluate the IPM Plan biennially and, at a minimum, update at least once per permit cycle. 2) Conduct staff training. 3) Annually review the list of City approved pesticides to ensure the most current environmental information is being applied to what is prescribed by staff. **Permit Year of Commitment:** Evaluate and update the IPMP, as applicable. Train all staff as policies are updated. **Program Goals: *** 1) Encourage other public	- Track frequency of staff trainings and number of staff trained. - Report updates to the plan. - Track quantities and types of pesticide, herbicides and fertilizer application.

Table 4.3.2 (continued)

	Of further note, inadequate general funds have created extreme public utility worker shortages with regard to park management and natural areas, as well as operating budget funding that would be used to hire subcontractors. This further limits the City's ability to avoid the use of pesticides altogether, due to the fact that organic approaches require more human hours for maintenance. The City is committed to identifying a balance of IPM techniques combined with chemical applications within the resources allocated for this purpose.	agencies within the Gresham city limits such as TriMet and the School Districts to adopt the IPM Plan if resources allow. 2) Create a pesticide-free park to enhance public education if resources allow. 3) Develop a training for municipal employees to supplement the training that occurs during the state of Oregon licensing process, as needed if resources allow. *These are dependent on staff time available to coordinate the project, partnerships and neighborhood commitment due to funding and labor shortages.	
Stormwater Education Program (See Table 4.3.6)	A description of the City's education BMP for construction site operators is included under Component #5, in Table 4.3.6.		See Table 4.3.6

Component #2 (ILL 1-7)
A Program to Detect and Remove Illicit Discharges and Improper Disposal Into the Storm Sewer System

ILL 1 Non-Stormwater Discharge Controls

- Control Releases from Fire Training Activities
- Water Line Flushing
- See also Table 4.3.6 Educate Residents & Educate Businesses

ILL 4 Spill Response Program:

- Spill Response
- Spill Prevention
- Maintain Public Vehicles

ILL 5 Facilitate Public Reporting and Respond to Citizen Concerns

ILL 6 Facilitate Proper Management of Used Oil and Toxics

ILL 7 Limit Sanitary Sewer Discharges

See Table 4.3.3 for more detailed descriptions of the City's BMPs.

TABLE 4.3.3 - BMPs to Detect and Remove Illicit Discharges and Improper Disposal Into the Storm Sewer System (ILL 1-7)

BMP Descriptions	BMP Implementation	Measurable Goals	Reporting Elements
ILL 1 Non-Stormwater Discharge Controls			
Purpose: To promote effective development and implementation of City code and policies that will help limit stormwater pollutants.			
A. Control Releases from Fire Training Activities	**BMP Owner:** Fire Department **Implementation Activities:** This BMP includes procedures to limit pollutants to stormwater while conducting fire training activities. • Utilize catch basin filter inserts when conducting activities at the Fire Training Facility using foam. • Conduct off-site fire training activities in vegetated areas that will capture and filter the water & foam releases, whenever possible. • If vegetated areas cannot be utilized for off-site fire training, then install catch basin filter inserts at downstream drain sites.	**Permit Year of Commitment:** ongoing	- Document fire training protocols for stormwater protection and train staff
B. Water Line Flushing	**BMP Owner:** Water Division **Implementation Activities:** The Water Division periodically flushes all public water lines to ensure the reliability of all valves and hydrants in addition to removing organic sediments that have collected in the water system. Flow capacity data is also collected from fire hydrants during flushing activities. Flushing typically occurs from October to May. To avoid impacts to sensitive stormwater collection basins, detention ponds and/or swales discharges are flushed into the wastewater collection system on a case by case basis. Other activities to minimize impacts to discharges that enter the storm system include the following: • All large discharges from the water system are dechlorinated with the use of a dechlorinator (injector) and applicable and appropriate treatment chemicals. • Catch basin inserts and bio bags are used to help filter excess sediments from the water before it enters the stormwater system.	**Permit Year of Commitment:** ongoing	-Train employees on standard operating procedure to minimize impacts to local streams. -Annually report gallons flushed.

Table 4.3.3 (continued)

BMP Descriptions	BMP Implementation	Measurable Goals	Reporting Elements
	• Discharges are monitored for chlorine levels, sedimentation removal, and flow rates.		
Stormwater Education Program (See Table 4.3.6)	A description of the City's public education BMP related to reducing non-stormwater discharges is included under Component #5, in Table 4.3.6.		See Table 4.3.6

ILL 4 Spill Response Program			
Purpose: To promote effective development and implementation of City code and policies that will help limit stormwater pollutants.			
A. Spill Response	**BMP Owner:** Watershed Division, Code Compliance **Implementation Activities:** **UIC Only: Block entry of discharges to a UIC:** The City uses a variety of materials that block the entry of liquids into a catch basin. For small spills, when it's not raining, a kitty litter "dam" is poured around the inlet. Oil absorbent pads and booms can perform the same function if it's raining. These items are small enough that they are routinely carried in the vehicle used by Operations staff who are the first responder to most non-hazardous spills. (A description of who responds to which types of spills is provided below.) For large spills, the City has spill blockers that are made of synthetic materials that mold to the shape of the ground and prevent movement of fluids into the UIC. Because of their bulk, the spill blockers are stored at the Operations yard in an easily accessible location. Since 2001, the City's facility design standards for UICs have required sedimentation manholes, which provide pretreatment as well as an additional storage area for spills that can be cleaned out prior to discharging to a UIC.	**Program Commitment:** 1) Implement the City's Spill Response Protocol and conduct periodic review of the document to ensure efficacy. 2) Ensure proper training of staff responsible for implementing the spill response protocol. **Permit Year of Commitment:** ongoing	- Track the number, type and location of spills* that occur and the approximate quantity of material spilled. - Track the response activities. *Does not include traffic accidents.

Table 4.3.3 (continued)

	As described in RC4 A, page 19, the City is taking an additional step to prevent the entry of harmful spills into its UICs. The City has commissioned a traffic accident risk analysis, and plans to provide pretreatment such as sedimentation manholes, rain gardens, or catch basin filters to those UIC systems judged most at risk. **Hazardous Substances/Threats to the Environment:** When there is a hazardous substance spill or a spill of any other substance that: • Is hazardous in any quantity • Is non-hazardous and greater than 42 gallons on the ground, • Is any quantity that has entered a waterway Gresham staff either notifies the Oregon Emergency Response System (OERS), or tells the responsible party that they must notify OERS. OERS then notifies DEQ and Gresham HazMat (if necessary) and other state and local agencies that may be affected. The responsible party, if identified, is required to contact an environmental clean-up company and pay for clean-up costs. Examples could include a 55 gallon drum of restaurant grease or sanitary sewer overflows on private property resulting in or having the risk of resulting in discharges to the public stormwater system. DEQ typically remains the enforcement authority in these cases. In some cases, DEQ may ask Gresham staff to oversee the clean-up and report back to DEQ. DEQ may choose to enforce against the responsible party under the following conditions: 1) the party has acted maliciously, 2) the party is a repeat offender, or 3) the party has failed to report the incident to DEQ. **Non-Hazardous Substances:** Watershed Management operations staff will investigate and provide emergency containment and cleanup, as necessary for identifiable substances that are labeled and are not hazardous. If the responsible party can be identified, they are directed to provide containment and site cleanup and the City will oversee the process to ensure compliance. If the spill is an imminent threat to waters of the state, the City reserves the right to provide clean-up and bill the responsible party for the work. The responsible party will be invoiced for any response and cleanup provided by the City. Examples include spills or dumping of paint, auto fluids, carpet cleaning wastes or concrete, etc. into catch basins or onto the street. Unidentifiable substances will be treated as hazardous and referred to a licensed disposal contractor to reduce risk to City employees responding to spills.		

Table 4.3.3 (continued)

	In non-emergency situations, such as stockpiling landscaping materials in the street or dumping yard debris on private property near a stream bank, staff will notify the responsible party, verbally and in writing and specify a timeframe for clean up. Staff will either refer the incident to Code Compliance if the responsible party does not respond within the specified time frame or take enforcement action directly. NPDES and WPCF staff and Code Compliance have the authority to issue Abatement Procedures, Violations or Civil Actions. Because the state will not assist with cleanup of non-hazardous spills less than 42 gallons, and because the City's equipment is not designed to cleanup spills over 5 gallons, the City will typically utilize private clean-up contractors to deal with spills between 5 and 42 gallons and less than 5 gallons when the substance is unidentifiable, if no responsible party can be found. **Releases from Traffic Accidents:** If there is a spill of automotive fluids resulting from a traffic accident, typically, the Fire Dept will spread an absorbent compound (usually clay) and specialized absorbent pads on automotive fluids and direct the towing company to assist with cleanup, or contact the Watershed Division if additional assistance is needed. Buckets are placed underneath dripping fluids. The road is swept and cleaned and, when necessary, additional protection is placed around the catch basins. Large leaking spills from commercial vehicles or semi-trucks are captured using a children's plastic pool and are disposed of by the HazMat Team. From a legal standpoint, the generator of the spill is responsible; therefore the waste materials are bagged and placed inside the wrecked vehicle or given to the tow truck driver for disposal. **UIC Area Only:** When Watershed Division staff learn of a spill of a substance that is not readily attenuated in the subsurface such as a chlorinated solvent, and the spill is of a quantity that may endanger a nearby drinking water well, the City will call the phone number on record for the well owner to alert the well owner of the spill.	**Program Commitment:** 3) Identify criteria to indicate the quantity and types of spill materials that may threaten drinking water wells **Permit Year of**	-- Track number and location of spills that potentially endanger drinking water wells, resulting in calls to well owners

Table 4.3.3 (continued)

		Commitment: WPCF Permit Years 1 & 2 **Program Commitment:** 4) Alert owners of potentially-affected water wells about the spill **Permit Year of Commitment:** ongoing after Permit Year 2	
B. Spill Prevention (Hazardous Waste Management -City Property)	**BMP Owner:** Fire Department, Facilities Maintenance, All City Operations & Maintenance Divisions **Implementation Activities:** This BMP includes the proper management of hazardous materials to prevent spills on City-owned property from City practices. Hazardous materials are dealt with slightly differently depending on the group that stores or handles the materials. Fire: Hazardous materials that are stored or handled by the Fire Dept are limited to small quantities of solvents used for cleaning, plus occasional unsolicited "gifts" of unlabelled substances that appear anonymously at the Fire station doorsteps. These substances are handled by trained HazMat personnel. Operations: At the Operations yard, drums of waste paving-related emulsion, diesel oil, and used motor oil, together with small cans of gasoline or cleaning agents are the main sources of hazardous materials. For small spills, the Operations staff use absorbent booms that are mechanically squeezed to release the fluids back into a container. Drums that contain hazardous materials are located on plastic spill basins that have a capacity adequate to contain the materials from the largest drum. Used hazardous materials are disposed of by a private vendor. Lubricants and fluids are stored in OSHA-approved, fire-rated storage cabinets. Safety containers that minimize spillage during pouring are also used. Pesticides are kept in a locked storage area, and only licensed pesticide operators are allowed to access and apply them. Relatively small quantities (2 ½ gallon containers) of pesticides	**Program Commitment:** 1) Ensure safe handling, storage and disposal of hazardous fluids in order to prevent spills and limit pollutant sources to stormwater by training staff appropriately. 2) Provide periodic review of City contractor's safety and environmental violations and disposal permits, where applicable to help ensure environmental compliance of contractors handling the City's waste products. **Permit Year of**	-Report quantities of hazardous materials disposed annually. -Report number of spill incidents and outcomes annually. -Request and review contractors' permits, where applicable, and review appropriate regulatory agency databases for safety and environmental violations, biennially.

Table 4.3.3 (continued)

	are stored, due to the concentrated nature of the pesticides. Tanks used for diluting and applying pesticides are rinsed with water that is then sprayed on the area to be treated. Spill kits are distributed to all Operations & Maintenance divisions and are kept in the most commonly used vehicles and each dump truck. Facilities Maintenance: Chemicals related to vehicle maintenance are described under that BMP. Other chemicals used by Facilities Maintenance include: those associated with cleaning, and paints, lubricants, hydraulic fluids, and solvents. All fluids are stored in drums inside a contained storage facility and utilize a closed chemical distribution system that minimizes leaks or spills. Fluids are disposed or recycled by an appropriately certified vendor.	**Commitment:** ongoing **Program Goals:** 1) Document safety protocols. 2) Develop a City procedure or policy for contractor disqualification or contract annulment based on permit or other safety & environmental violations.	

Table 4.3.3 (continued)

C. Maintain Public Vehicles	**BMP Owner:** Facilities & Fleet Management Division, All DES Operation & Maintenance Divisions, Fire Dept. **Implementation Activities:** The City owns and maintains approximately 240 vehicles. Most vehicle maintenance is performed at City Hall in the vehicle maintenance bay which drains to the sanitary sewer system. Due to high use of vehicles, and the need for high performance (esp. police cars and fire trucks), routine maintenance is conducted at three-month intervals. Maintenance tasks include ensuring that working parts are fully functional, and that vehicles are clean. A database provides triggers when a vehicle is due for maintenance and information is input regularly that tracks all work done on vehicles. **Typical BMPs implemented to minimize entry of pollutants into stormwater from these activities include the following:** • Vehicles in the fleet that leak fluids are taken out of operation until maintenance has eliminated the leak. • Maintenance work is conducted indoors. The floor is routinely swept, and pans set below the work bays collect anything that falls from vehicles being maintained. Any fluids that drip during maintenance are covered in kitty litter and given to a permitted private company that handles used fluids. • All fluids that are replaced are kept in drums for pickup by a permitted private firm that recycles or otherwise appropriately disposes of the fluids. Used tires are likewise recycled. • Steam cleaning and washing of vehicles is either performed at the wash pad by the decant facility at the Hogan Operations yard, or performed at commercial car washes that recycle the water. The Hogan wash pad drains to a baffled vault, from which any overflow enters the sanitary system. The vault is cleaned twice per year. • Back hoes and dump trucks are washed once per month at the wash bay at the Hogan Operations yard. • Tractors and riding mowers are inspected daily, and are maintained by a private vendor. They are washed as needed at the Hogan wash pad. • Fire trucks are washed at the individual fire stations using a mild detergent; some discharges currently enter the stormwater system.	**Program Commitment:** 1) Maintain City-owned vehicles & equipment and ensure proper handling & disposal of fluids to reduce the likelihood of leaks or spills being released into the MS4 system or the environment. 2) Keep appropriate documentation of all contractor permits/disposal practices to ensure proper handling & disposal of fluids. 3) Train new personnel on all safety & maintenance & spill cleanup procedures. 3) Keep spill kits stored in all locations where maintenance & operations procedures occur. 4) Keep written documentation of vehicle maintenance schedules and standard operating procedures for review by the NPDES Program	- Report annual disposal quantities of all fluids and vendors utilized. Report status of

Table 4.3.3 (continued)

		Coordinator. **Permit Year of Commitment:** ongoing **Program Commitment:** Meet DEQ Permit 1700 A deminimis discharge or seek a permit and/or waiver. **Permit Year of Commitment:** ongoing	deminimis discharges or Vehicle Wash Water permit implementation and/or waiver.

Table 4.3.3 (continued)

ILL **5 Facilitate Public Reporting**			
Purpose: To promote awareness of the effects of human activities on the municipal storm sewer system, area streams and wetlands and wildlife.			
Facilitate Public Reporting & Respond to Citizen Concerns	**BMP Owner:** Watershed Division, Code Compliance **Implementation Activities:** The Watershed Division will respond to requests and/or complaints from citizens regarding observed water quality problems from suspected illicit discharges or other causes and document the investigations and outcomes in a database. To date, typical activities that have caused the City to respond include the following: illegal dumping, spills, erosion control, plugged catch basins, drainage issues (public & private), concerns about mosquito breeding in stormwater water quality structures, riparian enhancement and Code Compliance related issues (e.g., overgrown vegetation in the public right of way, etc.). The City of Gresham currently implements or supports the use of a variety of methods to communicate stormwater related educational information to the public that address the topics listed in the descriptions above and to facilitate public reporting of illicit discharges, as appropriate. **Communication methods that are commonly used include the following:** • Gresham *Outlook* (estimated to reach 12,000 residents & businesses) • *Oregonian* East (estimated to reach 75,000+ readers) • *El Hispanic News* (estimated to reach 15,500 readers) • Gresham *News to Reuse* (residents and GREAT Business editions) (36,000 households & 3,500 businesses) • Chamber of Commerce newsletter (estimated to reach 900 businesses) • Gresham City Newsletter (estimated to reach 39,000 households) • Utility Bill Stuffers (estimated to reach 39,000 households) • Gresham's Website (approximately 200,000 visits annually)	**Program Commitment:** Include information for the public on how to report an illegal discharge to the stormwater system in various types of City publications, where appropriate. **Year of Program Commitment:** ongoing	-Track number of calls/letters received, the issue of the call, and the response to the call.

Table 4.3.3 (continued)

	• Johnson Creek Watershed Council *Within Your Reach* newsletter and e-newsletter (reaches about 800 residents & business owners) • Columbia Slough Watershed Council newsletter (reaches 500 residents & business owners) • Gresham area school district newsletters • Door hangars for specific projects, maintenance work, notice of violations (varies) • Direct mail to streamside property owners or specifically targeted neighborhoods. (varies) • Mount Hood Community College Public Access television (20,000) • Televised City Council meetings (20,000) • Public Service Announcements via radio or television (varies) • Educational Videos (varies) • Presentations to the public at events, open houses, meetings, etc. (varies) • Tri-met bus/max advertisements (varies by route) • Educational signs such as in parks, public, or private property (varies) • Educational brochures and posters (varies)		

Table 4.3.3 (continued)

ILL 6 Facilitate Proper Management & Disposal of Used Oil & Toxics			
Purpose: To promote public understanding and appropriate actions related to proper management and disposal of used oil and other toxic materials likely to enter stormwater.			
Facilitate the Proper Management & Disposal of Used Oil and Toxics	**BMP Owner:** Solid Waste & Recycling Division, Community Relations **Implementation Activities:** The City of Gresham currently utilizes a variety of approaches to encourage proper solid waste, recycling, waste prevention and hazardous waste management behaviors in the business and residential sectors. Typical City efforts include: • Voluntary GREAT Business Program audits, technical assistance and certification for businesses. • Hazardous and/or Special Collection events for residents. • Curbside recycling of used oil & publication of drop off locations. Public education communication pieces such as: News to Reuse (residential and business), brochures, website, etc.	**Program Commitment:** The City will continue to implement various solid waste, recycling, waste prevention and hazardous waste management & disposal programs. **Permit Year of Commitment:** ongoing	- Track quantities of used oil and toxics collected. - Estimate the number of persons and/or households reached.
ILL 7 Limit Sanitary Sewer Discharges			
Purpose: To promote best management practices of the municipal wastewater sewer system in order to limit pollutant sources to stormwater.			
Limit Sanitary Sewer Discharges	**BMP Owner:** Wastewater Services Division **Implementation Activities:** The City of Gresham Wastewater System operates under an NPDES permit issued by the Oregon Department of Environmental Quality (DEQ). The DEQ regulates the activities related to the operation, management and discharge of wastewater into surface water. The City's wastewater system is defined as a separate sanitary sewer system, unlike a combined sewer system, which contains stormwater directly connected from the stormwater system to the sanitary system. The wastewater treatment plant discharges to the Columbia River. The Wastewater Services Division also administers an Industrial Pretreatment Program to ensure that industrial users that discharge to the City's wastewater treatment system pretreat their wastewater to a certain level of quality before it can be discharged.	**Program Commitment:** Limit infiltration seepage from the wastewater system by implementing best management practices to the maximum extent practicable. **Year of Program Commitment:** ongoing **Program Goal:*** As resources become available,	- Track sanitary discharge to the stormwater system, including estimated volume and location. - Track follow up responses to the identification of any sanitary discharges to the stormwater system. - Track implementation of the CIP to connect currently unsewered properties to the sanitary

Table 4.3.3 (continued)

	In 2010, the DEQ issued an internal management directive (IMD), which incorporates CMOM provisions from the U.S Environmental Protection Agency (EPA). "CMOM" stands for "Capacity, Management, Operations, and Maintenance". It is a flexible, dynamic framework for municipalities to identify and incorporate widely accepted wastewater industry practices to better manage, operate, and maintain collection systems; investigate capacity constrained areas of the collection system; and respond to sanitary sewer overflow (SSO) events. Although CMOM was not officially adopted by the EPA, it is being used by the DEQ. Therefore, the Wastewater Services Division has taken the following steps to ensure program efficiency and minimization of sanitary releases to the stormwater system: • Completed Wastewater Collection and Conveyance Master Plan (updated in 2005) and Wastewater Treatment Plant (WWTP) Master Plan (2004) Updates to ensure system capacity and efficient implementation of high priority capital improvement projects. A new Treatment Plant Master Plan is currently being prepared and will be completed by 2011. The Division is also planning to hire a consultant to complete a new Collection System Master Plan by 2012. • Implemented best management practices at the wastewater treatment plant such as: routine maintenance and inspection of equipment; installation of covered surfaces and truck washing facilities to prevent releases. • Implemented the Pretreatment Inspection & Enforcement program. • Mapped the entire wastewater pipe system within the City's GIS program that links to "as-built" maps, CCTV video inspection reports and videos as well as provides "at a glance" information including age, length, and material composition of pipes. • Implemented annual flow monitoring, line cleaning, TV inspection and repair, as well as manhole inspections.	implement a CIP to construct pipelines to properties within the city that are not served by sanitary sewers, with the goal of eventually connecting all "unsewered" properties to the City's wastewater collection, conveyance and treatment system. There are relatively few unsewered properties within Gresham, therefore, this activity is a lower priority among the existing staff's work plans. *(This activity is dependent upon additional monetary resources subject to City Council approval)	sewer system.

Table 4.3.3 (continued)

	• Documented standard operating procedures to respond to wastewater system blockages that could potentially result in sanitary releases from manholes and utilizes the City's Spill Response protocol to respond appropriately.		

Component #3 (IND 1 & 2)
A Program to Monitor and Control Pollutants from Industrial Facilities

IND 1 Industrial Inspection & Monitoring:

- Business Inspection Program

IND 2 Industrial Inspection & Monitoring:

- Industrial Monitoring Program

See Table 4.3.4 for the City BMPs.

TABLE 4.3.4 - A Program to Monitor and Control Pollutants from Industrial Facilities (IND 1 & 2)

BMP Descriptions	BMP Implementation	Measurable Goals	Reporting Elements
IND 1 & 2 Industrial Inspection & Monitoring			
Purpose: To limit stormwater pollutants from various industrial sources.			
A. Business Inspection Program	**BMP Owner**: Watershed Division, Wastewater Division, Solid Waste and Recycling **Implementation Activities:** This BMP includes the following three implementation activities: 1) Business License Review—a proactive measure instituted to identify potential sources of stormwater pollutants during the business license application process, and ensure appropriate disposal. 2) Stormwater Business Inspections—Over this permit term the City plans to (a) continue development of the business inspection program implementation manual and technical assistance materials. (b) NPDES MS4: The program will provide technical assistance efforts to businesses that may need an NPDES 1200-Z or 1200-COLS permit from DEQ but that do not already have one. (c) The City will also inspect businesses based upon a review of their activities and NAICS classifications that allows the City to assess their potential to contribute pollutant loads to the MS4 system. The number of annual inspections conducted is expected to vary based on workload and efforts related to resolving code violations. The City's first priority is to utilize technical assistance whenever possible. (d) Wastewater inspection staff will continue to notify the Stormwater Business Inspector of any deficiencies for follow-up resolution. 3) The City has a GREAT business program that includes voluntary stormwater related audits to suggest various best management practices such as sweeping rather than power hosing, keeping non-leaking dumpsters on site and marking all storm drains on site most likely to be misused for dumping wastewater, etc. As this program is voluntary and focused upon education and technical assistance, it	**Program Commitment:** 1) Continue to implement business license reviews **Year of Program Commitment:** Ongoing **Program Commitment:** 2a) Continue to evaluate needs and develop protocols and technical assistance materials for key business sectors. For UIC area, evaluate existing databases and risk information to determine inspection priorities. **Year of Program Commitment:** ongoing. UIC only: identify priorities in Permit Years 1 & 2. **Program Commitment:** NPDES MS4: 2b) Notify businesses that may need a 1200-Z or 1200COLS permits to apply for one, or obtain a no exposure certificate. **Year of Program Commitment:** NPDES MS4: PY 16 and ongoing	- (1) Track the number and location of stormwater related issues identified during the business license review and the follow-up. - (2a) Report the status of ongoing program development. - (2b) Notify DEQ of businesses that may need a 1200-Z or 1200-COLS permit and report actions promised by businesses with which the City is working - (2c) Track business inspections that are conducted including the business, location, outcome, and follow-up. - (2c) Estimate number and type of businesses to be inspected for the next year in each

Table 4.3.4 (continued)

BMP Descriptions	BMP Implementation	Measurable Goals	Reporting Elements
	is also included under the public education component of this SWMP (see Table 4.3.6). This program is housed within the Solid Waste & Recycling Division and is reliant on other sources of funding to continue and is therefore subject to change in the future if City resources are reduced.	**Program Commitment:** 2c) Inspect businesses with potential to contribute significant pollutant loads to the MS4 system. **Year of Program Commitment:** NPDES MS4: PY 16 and ongoing. UIC: begin inspections Yr. 3 **Program Commitment:** 2d) Continue to implement stormwater inspections at the businesses that are inspected for the wastewater pretreatment program, based on potential to contribute pollutant loads to the MS4 system. **Year of Program Commitment:** ongoing **Program Goal:** 3) Contingent on available resources, continue to implement the GREAT business program. **Year of Program Commitment:** Ongoing	annual report - (2d) Report stormwater concerns identified by the wastewater pretreatment program, and resolution - (3) Track GREAT business program inspections and certifications annually. (Reported in the public education component).

Component #4 (CON 1-3)
A Program to Reduce Pollutants in Stormwater Discharges from Construction Sites

CON 1 & 2 Construction Site Planning & Controls:

- Erosion Prevention & Sediment Control Manual

CON 3 Construction Site Inspection & Enforcement

- Construction Site Inspection & Enforcement

See Component #5 and Table 4.3.6. *EDU 1* Stormwater Education Program: Ensure Staff/Stakeholder Training

See Table 4.3.5 for the City BMPs.

TABLE 4.3.5 - A Program to Reduce Pollutants in Stormwater Discharges from Construction Sites

BMP Descriptions	BMP Implementation	Measurable Goals	Reporting Elements
CON 1 & 2 Construction Site Planning & Controls			
Purpose: To control stormwater pollutant sources from development and redevelopment activities.			
Erosion Prevention & Sediment Control Manual	**BMP Owner:** Watershed Division, Public Works Inspection, Building Department **Implementation Activities:** The City currently has a permitting process for development that requires developers to follow the erosion control requirements set forth in the City's Erosion Prevention and Sediment Control (EPSC) Manual, including the creation of an erosion control plan for all sites which are inspected and approved by City staff based on the EPSC plan and identification of an erosion control project site manager for sites larger than one acre. (The plan required to obtain a 1200-C permit qualifies.) This Manual provides the inspection threshold, a summary of EPSC requirements, enforcement language, and a menu of BMPs and their appropriate uses, details and/or specifications for installation and maintenance, and guidance for appropriate site planning to protect water quality and is available on the City's website. City staff will continue to maintain and update the EPSC Manual when necessary to reflect current available and accepted technologies and City code.	**Program Commitment:** Implement the EPSC Manual in order to limit stormwater pollutant sources from construction and development & redevelopment activities. Review and evaluate the manual biennially to assess changes needed, if any. At a minimum, update the Manual once during the permit cycle to ensure appropriate best management practices and/or updated City code are included. **Permit Year of Commitment:** ongoing	- Track updates to the Manual.

Table 4.3.5 (continued)

CON 3 Construction Site Inspection & Enforcement			
Construction Site Inspection & Enforcement	**BMP Owner:** Watershed Division, Public Works Inspection, Development Engineering, Building Department **Implementation Activities:** The City conducts inspections of construction sites using the permitting system database to record the location and status of site development to ensure compliance with the City's Erosion Prevention and Sediment Control (EPSC) Manual and proper implementation of post-construction site plans. The City of Gresham inspects construction sites holding a 1200-C permit utilizing the most practical application of City resources available. A construction site larger than one acre is always a priority due to the potential for soil loss and stormwater impact. If these sites involve improvements to public infrastructure they are assigned a Public Works Inspector (PWI). The PWI's are trained biannually in EPSC best management practices. They work collaboratively with the City's lead EPSC inspector to adaptively manage these sites. The City is not an agent of DEQ and does not review the 1200-C stormwater pollution prevention plan (SWPPP) prior to implementation; however, the City uses the Permittee's SWPPP as a guidance document to adaptively manage the site. Sites with a greater potential for EPSC failure based on type of construction, topography, soil erodibility and receiving water quality are targeted for more frequent inspection. The City's protocol for inspecting all permitted sites: 1) *Pre-Construction Meeting* where a representative from the Water Resources group (lead EPSC inspector) discusses stormwater best management practices. The permittee is asked to call in to the City's Interactive Voice Response (IVR) system for an initial erosion inspection. 2) Lead EPSC inspector makes *random inspections* of site throughout duration of project, often utilizing Public Works Inspectors to ensure requests and/or modifications to BMPs are made.	**Program Commitment:** 1) Implement the EPSC inspection program to enforce the Erosion Control Manual in order to limit stormwater pollutant sources from development and redevelopment activities. 2) Ensure proper training for staff. 3) Examine tracking parameters such as the types of violations, number of active sites and total associated acreage. **Permit Year of Commitment:** ongoing **Program Goals:** *Create a penalty structure and protocols to add to the existing enforcement tools. *This effort is subject to legal and City Council approval.	- Track the number of sites inspected annually. - Track training sessions conducted for staff. - Report parameters assessed and program adaptive management that result, if applicable.

Table 4.3.5 (continued)

	3) Workload permitting, Public Works Inspectors *visit sites daily during active construction for routine inspections including EPSC compliance* and report erosion concerns to the lead EPSC inspector. 4) *Final inspection* is called into the IVR system, and requested by Public Works Inspector. The lead EPSC inspector performs inspection and creates a detailed punch list of deficient items. This punch list must be implemented prior to project acceptance to ensure that post-construction standards are met. 5) Should enforcement response become necessary, the City's procedures are described within the EPSC Manual and City code. Additionally, the City of Gresham inspects all non-permitted sites (< 1 acre) regardless of their participation as a larger common plan of development or sale. These sites have required EPSC plans that are reviewed by City staff for compliance with the City's EPSC standards. Sites are prioritized and targeted for more frequent inspections based on topography, soil erodibility, and proximity to sensitive areas including but not limited to receiving waters.		

Stormwater Education Program **(See Table 4.3.6)**	A description of the City's education BMP for construction site operators is included under Component #5, in Table 4.3.6.		See Table 4.3.6

Component #5 (EDU 1)
Stormwater Education Program

EDU 1 Stormwater Education Program

- Ensure Staff/Stakeholder Training

EDU 1 Stormwater Education Program

- Ensure Staff/Stakeholder Training

EDU 1 Stormwater Education Program

- Educate Residents
- Educate Businesses

See Table 4.3.6 for the City BMPs.

TABLE 4.3.6 – Public Education

BMP Descriptions	BMP Implementation	Measurable Goals	Reporting Elements
EDU 1 Stormwater Education Program			
Purpose: To plan, deliver and measure public education programs that will help eliminate or reduce stormwater pollutant sources.			
Introductory Note With Respect to Addressing this Requirement: This section lists a few specific programs that are linked to the required elements listed above. The overall approach to public education is to implement programs based on priority of the pollutant types addressed. The highest priority education programs will target TMDL/303(d) pollutants, such as bacteria, as well as pollutants with high toxicity to fish or to people. Additionally, programs that are measurable in terms of implementation & impact on behavior change will be prioritized higher than programs that have unknown outcomes.			
A. Ensure Staff/Stakeholder Training	**BMP Owner**: Watershed Division, Community Relations, Development Engineering, Public Works, & Facilities Maintenance **Implementation Activities:** Conduct training for new employees and whenever there is a significant update to any of the following documents that regulate stormwater pollution control activities including but not limited to: Integrated Pest Management Plan—staff and workers (subcontractors-commercial applicators) on behalf of the City of Gresham Water Quality Manual—staff and affected stakeholders Stormwater Operations Manual—staff EPSC Manual—staff and affected stakeholders Spill Response Protocol—staff	**Program Commitment:** The City will continue to conduct training for new personnel who utilize the documents described in this section and will conduct trainings for affected stakeholders, when appropriate. **Permit Year of Commitment:** ongoing	-Track the number of personnel & contractors who receive training by topic.
B. Educate Residents	**BMP Owner**: Watershed Division, Community Relations, Solid Waste & Recycling Division, Water Division **Implementation Activities:** The City's program philosophy is to focus primarily on delivery of services that result in behavior change, as opposed to just raising awareness. However, some mix of approaches is necessary in order to move people from awareness to action. Public education approaches that actually track and measure behavior change are not only difficult, but generally, very costly to implement. As such the	**Program Commitment:** The City will continue to educate the public regarding their personal contributions to stormwater pollutant sources and impacts on water bodies and the steps or actions the public can take to reduce pollutants in stormwater runoff.	-Track programs/messages delivered, type of communication piece and, where appropriate/known, the number of people affected and measured behavior changes.

	City often partners with other groups or agencies to deliver programs and services in an effort to leverage the City's budget in a cost effective manner. The City will endeavor to utilize program design and report estimated contacts and, where possible, measurable outcomes but notes that this is simply not possible in all cases. Create & deliver programs and/or messages to educate the public regarding non-point sources of pollutants of concern. There is no known scientific data that definitely demonstrates that the following types of non-stormwater discharges are significant sources of pollution to waters of the State within the Gresham permit boundary, nevertheless, the City's Education and Outreach Program attempts to address the following sources including but not limited to: lawn watering & landscape irrigation and maintenance practices, swimming pool/hot tub decant; and residential and charity car washing. Some of the primary target audiences include: • Single family home residents who use chemicals for home maintenance and who irrigate their lawn, who own pools and hot tubs • Pet owners • Do it yourself car maintenance residents • Neighborhoods that have joint ownership of private water quality facilities	**Permit Year of Commitment:** ongoing **Program Commitment:** Conduct or participate in an effectiveness evaluation that focuses on assessing changes in targeted behaviors in order to measure the success of public education activities and use results to adaptively manage the education and outreach program during the term of this permit. **Permit Year of Commitment:** By November 1, 2014.	-Annually report the Public Education program priorities and plans for the following year.

C. Educate Businesses	**BMP Owner**: Watershed Division, Community Relations, Solid Waste & Recycling Division, Water Division **Implementation Activities:** The City's program philosophy is to focus primarily on delivery of services that result in behavior change, as opposed to just raising awareness. However, some mix of approaches is necessary in order to move people from awareness to action. Public education approaches that actually track and measure behavior change are not only difficult, but generally, very costly to implement. As such the City often partners with other groups or agencies to deliver programs and services in an effort to leverage the City's budget in a cost effective manner. The City will endeavor to utilize program design and report estimated contacts and, where possible, measurable outcomes but notes that this is simply not possible in all cases. Create & deliver programs and/or messages to educate businesses regarding non-point source pollutants of concern, including but not limited to: lawn watering & landscape irrigation, private system maintenance, discharges from potable water sources, street washing, garbage/chemical/fluid/process management, control & disposal, and spill kits. Some of the primary target audiences include: • Landscape firms • Businesses that have pools and hot tubs • Businesses with privately-owned water quality facilities • Businesses as prioritized by the Business Inspection Program	**Program Commitment:** The City will continue to educate the businesses regarding their personal contributions to stormwater pollutant sources and impacts on water bodies and the steps or actions the public can take to reduce pollutants in stormwater runoff, including but not limited to those with privately owned stormwater quality management facilities. **Permit Year of Commitment:** ongoing	-Track programs/messages delivered, type of communication piece and, where appropriate/known, the number of people affected and measured behavior changes. -Annually report the Public Education program priorities and plans for the year following

APPENDIX C

Contact Information for Persons with Primary Responsibility for Compliance with the UIC WPCF Permit December 20, 2016

Position Name	Person in Position	Phone Number	E-mail Address	Role in UIC WPCF Compliance
Water Resources Regulatory & Operations Manager	Andrew Degner	503-618-	Andrew.Degner@GreshamOregon.gov	Responsible for policy and financial decisions affecting the Regulatory and Operations groups
Water Resources Engineering Manager	Mike Whiteley	503-618-2314	Mike.Whiteley@GreshamOregon.gov	Responsible for policy and financial decisions affecting the Capital Improvement Program, including CIP retrofits
Environmental Program Manager	Torrey Lindbo	503-618-2405	Torrey.Lindbo@GreshamOregon.gov	Responsible for developing and implementing monitoring plan and assists with other WPCF permit compliance
Environmental Specialist IV	Keri Handaly	503-618-2657	Keri.Handaly@GreshamOregon.gov	Responsible for ensuring compliance with the NPDES permit terms
Environmental Specialist III	Katie Holzer	503-618-2377	Katie.Holzer@GreshamOregon.gov	Responsible for developing and implementing monitoring plan and assists with other WPCF permit compliance
Senior Stormwater Engineer	Jeremy Provenzola	503-618-2629	Jeremy.Provenzola@GreshamOregon.gov	Responsible for Capital Improvement Program, including CIP retrofits
Operations Superintendent	David Lashbaugh	503-618-2911	David.Lashbaugh@GreshamOregon.gov	Responsible for managing operation and maintenance of stormwater system