

CITY OF SALEM STORMWATER MANAGEMENT PLAN 2010¹

Overview

An evaluation of the City of Salem’s original (1996) Stormwater Management Plan (SWMP) was conducted in November, 2005 as part of the preparation of the Interim Evaluation Report (IER), in order to identify areas where modifications to the original SWMP were considered appropriate. Specifically, existing BMPs were reviewed by those responsible for implementing the BMP in order to propose changes to the BMP and enhance its effectiveness. BMP revisions were reviewed internally to ensure that commitments and activities were accurate and achievable. The SWMP was evaluated again in May 2008. This evaluation was conducted using the EPA MS4 Program Evaluation Guidance (January 2008) and the BMPs were adjusted accordingly. In addition to enhancing BMPs based on City experience in implementing their stormwater management program, BMPs were streamlined to reflect work being done. Measurable goals were created for the BMPs in the City’s SWMP. Included in this appendix is the revised 2008 SWMP.

The table below summarizes the BMPs contained in the SWMP.

BMP ID	Page
RC1 - Planning	6
RC2 - Capital Improvements	8
RC3 - Update of Stormwater Management Standards	9
RC4 – Operations and Maintenance	11
RC5 – Public Education and Participation	15
RC6 – Stormwater Management Program Financing	17
RC7 - Maintain and Update GIS System	18
RC8 – City Stormwater Grant Program	19
RC9 – Legal/Ordinances	20
ILL1 – Spill Prevention and Response Program	21
ILL2 – Illicit Discharge Elimination Program	23
ILL3 – Illegal Dumping Control Program	25
IND1 – Industrial Stormwater Discharge Program	26
CON1 – Construction Site Control Program	28
MON1 - Monitoring	30

City of Salem SWMP (2008) Summary of Elements

The City of Salem’s current MS4 NPDES Permit contains four required basic SWMP elements. The elements are further broken down to describe the minimum information required in the SWMP in order to satisfy each element. These elements, along with Salem’s corresponding BMPs that satisfy these elements, are summarized below. The BMPs listed in this summary are only those that address the explicit requirements of the SWMP as described in Schedule D (2)(c) of the current MS4 Permit. There are additional BMPs within the City of Salem’s SWMP that do not specifically align

¹ Initial SWMP submitted to the Oregon Department of Environmental Quality (DEQ) with the City of Salem’s National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit renewal package on September 2, 2008. The SWMP was revised and re-submitted to the DEQ on August 13, 2010. Following renewal of the City’s NPDES MS4 permit on December 30, 2010 (Permit #101513, File #108919), the SWMP was revised to incorporate measurable goals identified in Schedule D (6) of the renewed permit and was re-submitted to the DEQ on **April 1, 2011.**

with these elements and are not included in this summary.

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

This component of the permit requires the following:

(1) A description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers.

BMP(s)

- RC3 – Update of Stormwater Management Design Standards, Task 1
- RC4 – Operations and Maintenance, Tasks 6, 8, 9, 10, 11, & 12

(2) A description of planning procedures including a comprehensive master plan to develop, implement and enforce controls to reduce the discharge of pollutants from municipal separate storm sewers that receive discharges from areas of new development and significant redevelopment. Such a plan must address controls to reduce pollutants in discharges from municipal separate storm sewers after construction is completed. Controls to reduce pollutants in discharges from municipal separate storm sewers containing construction site runoff are addressed in paragraph Schedule D(2)(c)(iv).

BMP(s)

- RC1 – Planning, Tasks 1-8
- RC2 – Capital Improvements, Tasks 1-3
- RC3 – Update of Stormwater Management Design Standards, Tasks 1-3
- RC9 – Legal/Ordinances, Tasks 1-3

(3) A description of practices for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems, including pollutants discharged as a result of deicing activities.

BMP(s)

- RC4 – Operations and Maintenance, Tasks 1, 2, 3, & 4

(4) A description of procedures to assure that flood management projects assess the impacts on the water quality of receiving water bodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible.

BMP(s)

- RC1 – Planning, Task 7

(5) A description of a program to monitor pollutants in runoff from operating or closed municipal landfills or other treatment, storage or disposal facilities for municipal waste. The description must identify priorities and procedures for inspections and establishing and implementing control measures for such discharges (this program can be coordinated with the program developed under Schedule D(2)(c)(iii)).

Non-applicable – There are no landfills or disposal facilities that discharge stormwater into the City of Salem’s MS4.

(6) A description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides and fertilizer that will include, as appropriate, controls such as educational activities, permits, certifications and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities.

BMP(s)

- RC4 – Operations and Maintenance, Task 5

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

This component of the permit requires the following:

(1) A description of a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal separate storm sewer system; this program description must address all types of illicit discharges, however the following category of non-storm water discharges or flows must be addressed where such discharges are identified by the municipality as sources of pollutants to waters of the United States: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from potable water sources, start up flushing of groundwater wells, aquifer storage and recovery (ASR) wells, potable groundwater monitoring wells, draining and flushing of municipal potable water storage reservoirs, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, street wash waters, discharges of treated water from investigation, removal and remedial actions selected or approved by the Department pursuant to Oregon Revised Statute (ORS) Chapter 465, the state’s environmental cleanup law; and discharges or flows from emergency fire fighting activities where discharges or flows from fire fighting are identified as not significant sources of pollutants to the waters of the state.

BMP(s)

- ILL2 - Illicit Discharge Elimination Program, Task 2
- ILL3 – Illegal Dumping Control Program, Task 2

(2) A description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens.

BMP(s)

- ILL2 – Illicit Discharge Elimination Program, Tasks 2 & 4

(3) A description of procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water [such procedures may include:

sampling procedures for constituents such as e. coli, surfactants (MBAS), residual chlorine, fluorides and potassium; testing with fluorometric dyes; or conducting in storm sewer inspections where safety and other considerations allow.] Such a description must include the location of storm sewers that have been identified for such evaluation.

BMP(s)

- ILL2 – Illicit Discharge Elimination Program, Tasks 3 & 4

(4) A description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer.

BMP(s)

- ILL1 – Spill Prevention and Response Program, Tasks 1-4
- ILL2 – Illicit Discharge Elimination Program, Task 1

(5) A description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers.

BMP(s)

- ILL3 – Illegal Dumping Control Program, Task 2

(6) A description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials.

BMP(s)

- ILL3 – Illegal Dumping Control Program, Tasks 1 & 4

(7) A description of controls to limit infiltration of seepage from municipal sanitary sewers to municipal separate storm sewer systems where necessary.

BMP(s)

- RC4 – Operations and Maintenance, Task 6
- ILL2 – Illicit Discharge Elimination Program, Task 3

Element #3

A Program to Monitor and Control Pollutants Industrial Facilities (IND)

This element of the permit requires an industrial monitoring program that does the following:

(1) Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges.

BMP(s)

- IND1 – Industrial Stormwater Discharge Program, Tasks 1 & 2

(2) Describe a monitoring program for storm water discharges associated with the industrial facilities identified in Schedule D(2)(c)(iii), to be implemented during the term of the permit, including the submission of quantitative data on the following constituents: any pollutants limited in

effluent guidelines subcategories, where applicable; any pollutant listed in an existing NPDES permit for a facility; oil and grease, COD, pH, BOD5, TSS, total phosphorus, total Kjeldahl nitrogen, nitrate plus nitrite nitrogen; and any information on discharges required under 40 CFR §122.21(g)(7)(vi) and (vii).

BMP(s)

- IND1 – Industrial Stormwater Discharge Program, Tasks 1 & 3
- ILL2 – Illicit Discharge Elimination Program, Task 3

Element #4

A Program to Reduce Pollutants in Stormwater Discharges from Construction Sites (CON)

This component of the permit requires the following:

(1) A description of procedures for site planning which incorporate consideration of potential water quality impacts.

BMP(s)

- CON1 – Construction Site Control Program, Tasks 1, 3, & 4

(2) A description of requirements for nonstructural and structural best management practices.

BMP(s)

- CON1 – Construction Site Control Program, Tasks 1, 3, 4, & 5

(3) A description of procedures for identifying priorities for inspecting sites and enforcing control measures that considers the nature of the construction activity, topography, and the characteristics of soils and receiving water quality.

BMP(s)

- CON1 – Construction Site Control Program, Task 3

(4) A description of appropriate educational and training measures for construction site operators.

BMP(s)

- CON1 – Construction Site Control Program, Task 2

The following tables are the City of Salem's revised 2008 Stormwater Management Plan.

RC1 - Planning	
Responsible Department:	o Public Works (Utilities Planning, Stormwater Services, Water Resources, Engineering, Facilities Engineering, Development Services)
Responsible Person:	o Chief Utilities Planning Engineer
BMP Objective:	o Conduct planning efforts in order to identify Capital Improvement Projects and Stormwater Management Program elements that will efficiently complete tasks toward the improvement of water quality.
Pollutants Addressed:	o Bacteria, sediments, organics, nutrients, oil and grease, and heavy metals.
BMP Description:	<p>Stormwater needs and improvements are principally identified through two planning tools: a Stormwater Master Plan and individual Watershed Management Plans. The Stormwater Master Plan identifies major improvements and facilities as well as general concepts and policies for BMPs that address water quality and natural resources. The City adopted a City-wide Stormwater Master Plan in 2000 that hydraulically modeled stormwater systems and identified capital improvements that focused on stormwater quantity and conveyance; water quality facilities; and stream and habitat enhancements. Additional recommendations were provided for implementation of stream inventory, monitoring and modeling tasks. This Master Plan prioritized projects for stormwater quantity and conveyance, and water quality facilities. Ongoing prioritization and implementation of projects is addressed through the City's annual budget and capital improvement program (CIP) processes as discussed in RC2. The Stormwater Master Plan is expected to be updated within this MS4 permit cycle, taking into consideration revised Stormwater Design Standards (RC3).</p> <p>Watershed Management Plans provide greater detail by focusing on the needs of each specific urban watershed. Watershed Management Plans identify major CIPs listed in the Stormwater Master Plan and integrate these facilities with development codes for on-site facilities, stream restoration projects, and other specific smaller scale improvements. Watershed Management Plans coordinate with other water quality programs, issues, and concerns. Opportunities for multi-use facilities are explored as well as the benefit of restoration projects and overall capital and maintenance costs.</p> <p>A pilot Watershed Management Plan was initially developed for the Pringle Creek Watershed. Stream and habitat improvements, stream inventory, and monitoring were evaluated along with stormwater CIP projects. This document provides goals for the City to implement a comprehensive stormwater program both throughout the City and within the basin, and to coordinate the many activities associated with this NPDES Stormwater Management Plan.</p> <p>The City of Salem has numerous programs, activities, and personnel associated with stormwater. Coordination currently occurs informally across departments, divisions, and sections as needed to share information and resources. With increasing stormwater program complexity and regulatory requirements to evaluate program effectiveness, there are advantages to augmenting current information sharing practices with more formal gatherings. Regularly scheduled meetings will be used to share program information, data collected and strategize for program adjustments.</p> <p>Tasks described below provide details of inter-departmental coordination as well as coordination with other agencies.</p>

RC1 ACTIVITIES FOR 2010 – 2015		
Tasks	Measurable Goals	Tracking Measures
Task 1: Provide City-wide Master Planning for stormwater to address both water quality and water quantity. As part of master planning efforts, continue to evaluate new detention and water quality opportunities within the Urban Growth Boundary (UGB), and consider sites in upstream areas that may affect Salem, and in downstream areas that may be affected by runoff from Salem.	<ul style="list-style-type: none"> o Maintain Master Plan and complete next update within the MS4 permit cycle. 	<ul style="list-style-type: none"> o Track schedule for updating the Master Plan o Report on master plan update actions.
Task 2: Develop and maintain watershed management plans by developing a prioritized schedule and implementing watershed management plans based on available funding. Develop the pilot Pringle Creek Watershed Management Plan as a model for the City's other prioritized urban watersheds. Identify capital improvement needs and potential "early action" activities and projects to ensure that the plan has a strong implementation component.	<ul style="list-style-type: none"> o Complete a hydromodification study and a retrofit plan by November 1, 2014. o Incorporate recommendations and early action items of watershed 	<ul style="list-style-type: none"> o Report on completion of hydromodification study. o Report on completion of retrofit plan. o Track implementation actions of Pringle Creek Watershed

RC1 ACTIVITIES FOR 2010 – 2015		
Tasks	Measurable Goals	Tracking Measures
	<ul style="list-style-type: none"> management plans with completion of hydromodification study and retrofit plan. o Develop strategy for completing future watershed management plans by November 1, 2014. 	<ul style="list-style-type: none"> Management Plan. o Report on strategy for completing future watershed management plans.
<p>Task 3: City staff will continue to update the official “waterways” map for use by City staff in applying various regulations and standards. As studies are performed that warrant the revision of the designated waterways, including groundtruthing, that information will be incorporated into the update process.</p>	<ul style="list-style-type: none"> o Compile database of maps and waterways references. o Complete field groundtruthing by end of FY 2011-12. o Update map by end of FY 2012 -13. 	<ul style="list-style-type: none"> o Track completion of groundtruthing and map updates.
<p>Task 4: City staff will meet a minimum of once per year to discuss coordination of efforts relating to stormwater. Topics may include the following, as they are applicable: grant funding, outreach, program review, annual report, monitoring, sharing of data, adaptive management, review/update of documents and programs, training needs, documentation of protocols, coordination of databases, involvement of inspections, maintenance, and operations in plan review and program development, checklists, effective Erosion Prevention and Sediment Control Program including enforcement, strategizing addressing hotspots, plan review, stormwater BMPs, and development of written enforcement strategy.</p> <p>Provide factsheets/manuals to new employees at the City to inform them about the City's efforts for pollution prevention.</p> <p>At least annual trainings will be provided to specified City of Salem employees involved in MS4-related activities regarding the permit, including its intentions and their responsibilities in relation to the MS4. Feedback for improving processes will be encouraged and brought to the coordination meeting(s). Training needs will be determined by the City staff meeting mentioned above.</p> <p>Consider adding stormwater pollution prevention training as an action item of the FY 2011-12 Environmental Action Plan that addresses pollution prevention on a Citywide level.</p>	<ul style="list-style-type: none"> o Conduct annual formal coordination meetings for stormwater, more often if necessary. o Conduct annual training of employees involved in MS4-related positions, more often if necessary. 	<ul style="list-style-type: none"> o Prepare an annual meeting summary. o Track changes made to the implementation of the stormwater program based on coordination discussions. o Track major items of coordination. o Track training attendance. o Share and document training suggestions for MS4 implementation changes.
<p>Task 5: Coordinate with other agencies such as NGOs, private environmental groups, and watershed councils.</p>	<ul style="list-style-type: none"> o Develop a list of contacts and identify issues of coordination. 	<ul style="list-style-type: none"> o Document any MOAs.
<p>Task 6: The City will work with Marion and Polk Counties and the City of Keizer to coordinate stormwater management programs and activities within the greater Salem-Keizer Urban Growth Boundary. Coordination may include the establishment of appropriate intergovernmental agreements (IGAs) regarding potential uniform stormwater design standards, operations and maintenance activities, and public education and involvement efforts within the UGB.</p>	<ul style="list-style-type: none"> o Review and update the October 2000 SKAPAC Stormwater Management Agreement by the end of the permit term to reflect each jurisdiction's respective MS4 Permit and SWMP. 	<ul style="list-style-type: none"> o Report on significant coordination activities or programs. o Report on completion of SKAPAC Agreement and other IGAs.
<p>Task 7: Evaluate existing detention facilities and potential new detention sites for potential</p>	<ul style="list-style-type: none"> o Complete a retrofit plan before the end 	<ul style="list-style-type: none"> o Report on completion of retrofit plan.

RC1 ACTIVITIES FOR 2010 – 2015		
Tasks	Measurable Goals	Tracking Measures
<p>conjunctive uses (as water quality facilities and for retrofitting opportunities). Continue to perform facility site searches to locate ponds, wetlands, vegetated swales and other water quality facilities as existing water quantity and quality facilities are evaluated and potential new sites are identified. Coordinate with RC1-1 and RC1-2.</p>	<p>of year four of the MS4 permit cycle.</p> <ul style="list-style-type: none"> ○ Develop a strategy to identify and prioritize potential retrofit projects by November 1, 2013. ○ Identify a minimum annual budget for stormwater retrofit projects as part of the retrofit strategy by November 1, 2014. ○ 	<ul style="list-style-type: none"> ○ Report on available budget and completion of retrofit project efforts.
<p>Task 8: The City will continue to be an active member of the Oregon Association of Clean Water Agencies (ORACWA). The City will use this medium to obtain copies of materials that have been produced by others. City staff will stay current on latest available educational and technical guidance materials.</p>	<ul style="list-style-type: none"> ○ Attend a minimum of one stormwater-related workshop or conference annually. Attend groundwater-related workshops and conferences as funds allow. ○ Make information obtained at these events available to other City staff. 	<ul style="list-style-type: none"> ○ Report on city participation with ORACWA events.

RC2 – Capital Improvements	
Responsible Department:	o Public Works (Engineering, Utilities Planning, Stormwater Services, Water Resources)
Responsible Person:	o City Engineer
BMP Objectives:	o Prioritize, and implement stormwater-related capital improvements identified in RC1, Planning, to protect life and property, minimize flood damage, and reflect a balanced perspective between water quantity and quality issues in the capital improvements program.
Pollutants Addressed:	o Depends on facility. Sediments, organics, nutrients, oil and grease, and heavy metals.
BMP Description:	The City implements and manages capital improvement projects (CIPs) established through the City's most recent Stormwater Master Plan (updated 2000) in a manner that will provide a maximum benefit to water quality and based on available funding. In order to gain the maximum benefit from the CIPs, the City prioritizes potential projects by assessing potential water quality benefits, consulting resource agency permitting needs for integration opportunities, and available funding. The City currently evaluates the prioritized CIP list annually to determine if adjustments need to be made based on new information, changes in regulatory requirements, the ability of the CIP to further the goals and policies of the City and available funding. Physical access easements will be acquired for existing water quality facilities for proper management and operations and maintenance, as funding allows.

RC2 - Activities for 2010 – 2015		
Tasks	Measurable Goals	Tracking Measures
Task 1: Implement stormwater projects (including stormwater conveyance, quantity, quality, and stream/habitat improvement) based on priorities established under the Capital Improvement Program (CIP) and the Stormwater Master Plan consistent with available funding.	<ul style="list-style-type: none"> o Include a funding line item for CIPs in proposed stormwater budget. o Review and prioritize CIPs and budget annually. o Implement CIPs based on prioritization and available funding. 	<ul style="list-style-type: none"> o Track number and description of projects completed. o Report updated CIP list annually.
Task 2: Continue to coordinate capital improvement projects with the Water Resources Program Section to integrate multiple resource agency permitting needs. The review is intended to identify integrated opportunities and permitting needs to meet water quality-related requirements.	<ul style="list-style-type: none"> o Review and integrate multiple resource agency permitting needs, including MS4 permit requirements, into 100% of CIP projects. 	<ul style="list-style-type: none"> o Track number of projects reviewed. o Track number of projects permitted.
Task 3: The City continues to acquire physical access-easements for public and private stormwater facilities. This is done by identifying existing facilities for which easements, rights-of-way, or permit-of-entry agreements are needed for stormwater facilities; and developing a plan for acquiring the same, given current funding limitations.	<ul style="list-style-type: none"> o Within one year of completion of the hydromodification study and retrofit plan, prioritize easement acquisitions for stormwater facilities. o Following prioritization, identify funding source(s) for inclusion in budget. 	<ul style="list-style-type: none"> o Report on easement acquisition and prioritization process.

RC3 – Update of Stormwater Management Design Standards	
Responsible Department:	o Public Works (Utilities Planning, Development Services, Stormwater Services, Engineering)
Responsible Person:	o Chief Engineer
BMP Description:	o Reduce pollutants associated with stormwater runoff from new development after construction is completed through the requirement of structural controls for water quality and quantity (post-construction controls).
Pollutants Addressed:	o Sediments, suspended solids, organics, nutrients, oil and grease, and heavy metals.
BMP Description:	<p>The City encourages the use of structural water quantity facilities for new and re-development including land uses. Requirements for structural water quality control facilities and associated design standards are currently being developed. These design standards will most likely require facilities such as bioswales (or equivalent “technology”) to be installed for new and redevelopment and will include the requirement for submittal of maintenance plans for those facilities. The stormwater design standards will be updated as needed. Low Impact Development (LID) techniques will be evaluated and incorporated where technically and environmentally appropriate.</p> <p>Public Works staff will coordinate with the Community Development Department to review Salem Revised Codes (SRC) to include water quality improvements such as integrating stormwater BMPs into new and re-developments and including LID design. The resulting updated code of regulations will result in a Unified Development Code (UDC), a document that provides a comprehensive set of directions for new development and redevelopment. This task will be coordinated with RC9 – Legal/Ordinances, Task 2.</p> <p>The City also implements Water Quality Development Standards for all development requiring a Willamette Greenway Permit.</p>

RC3 ACTIVITIES FOR 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measure
<p>Task 1: Continue to encourage the use of structural BMPs for stormwater quality improvement and flood peak reduction opportunities. Develop stormwater quality design and associated maintenance standards for new and redevelopment. Continue to evaluate opportunities to provide incentives for alternative stormwater management practices, including Low Impact Development (LID). Maintain and update the Stormwater Management Design Standards after they are developed.</p>	<ul style="list-style-type: none"> o Develop incentives for LID and other stormwater quantity and quality management practices. o Develop updated stormwater design standards to include structural stormwater quality BMPs. o Maintain Stormwater Management Design Standards and update as needed. 	<ul style="list-style-type: none"> o Document revisions made to Stormwater Management Design Standards. o Document the development of any incentives for implementation of LID techniques.
<p>Task 2: Continue to implement process to identify and remove barriers for implementing LID techniques. Update the Stormwater Management Design Standards and associated Salem Revised Code (SRC) provisions as appropriate.</p>	<ul style="list-style-type: none"> o Within three years of implementing the revised stormwater design standards, review and, as appropriate, modify design standards and SRC to minimize barriers to implementation of LID techniques. 	<ul style="list-style-type: none"> o Document the review of design standards and SRC to minimize barriers to implementation of LID techniques.

<p>Task 3: City staff is implementing the Water Quality Development Standards set forth by SRC Chapter 141 for all development requiring a Willamette Greenway Permit.</p>	<ul style="list-style-type: none"> ○ Implement Water Quality Development standards in Willamette Greenway. 	<ul style="list-style-type: none"> ○ Track number of Willamette Greenway Permits issued and description of water quality measures employed. ○ Track number of new facilities constructed.
<p>Task 4: Continue to review all residential, commercial, and industrial plans submitted for City-issued building permits for compliance with the City's Stormwater Management Design Standards. Conduct inspections of completed projects prior to the City's acceptance of those projects and project close-out to ensure work was done in accordance with approved plans. Maintain database of plans reviewed and final inspections conducted. See IND1- Task 2 for standards specific to industrial facilities.</p>	<ul style="list-style-type: none"> ○ Review all residential, commercial, and industrial plans submitted for City-issued permits for compliance with the City's Stormwater Management Design Standards and associated SRC provisions. ○ Conduct inspections once construction is completed to ensure work was done in accordance with approved plans. 	<ul style="list-style-type: none"> ○ Maintain database of plans reviewed and final inspections conducted.

RC4 – Operations and Maintenance	
Responsible Department:	o Public Works (Stormwater Services, Transportation Services, Parks Operations)
Responsible Person:	o Stormwater Services Manager
BMP Objective:	o Conduct operations and maintenance activities of stormwater structural controls and public streets in a manner that reduces the impact of pollutants to MS4 facilities and discharges to receiving waters.
Pollutants Addressed:	o Salt, chemical de-icers, nutrients, sediment, metals, grease, floatables, pesticides, and herbicides.
BMP Description:	<p>Recognizing the need for greater maintenance efforts following the submittal of the initial MS4 permit application, the City increased the maintenance budget and developed the "Drainage Evaluation Program" (DEP). A comprehensive review of the Operation and Maintenance (O&M) program was conducted to evaluate the level of service needed to address water quality concerns of the permit and needs identified in the 2000 Stormwater Master Plan. The DPEN requires tracking of all activities, evaluation of results (particularly how to optimize effectiveness of maintenance activities), and annual updating of the O&M program. The Hansen IMS database is used to track work performed and future maintenance needs of each component of City's stormwater facilities. GIS mapping is used to track location of the pipe and open channel stormwater system. Public and private detention systems and easements are identified in the Hansen database.</p> <p>Maintenance activities associated with the stormwater conveyance system and components include regular TV inspection, cleaning of storm drains and catch basins, and ditch maintenance. Maintenance is performed to minimize impacts to the environment. When pipes are cleaned using water pressure, debris is collected in a downstream manhole; the manhole sump is cleaned with a Vactor truck to remove and properly dispose of the sediment. Ditch maintenance is performed by only removing sediment and vegetation from the bottom of the ditch when necessary, leaving as much native vegetation on the sides as possible. Straw wattles are placed in the ditch following cleaning to minimize erosion and to encourage revegetation. All vegetation is removed mechanically without the use of chemicals.</p> <p>Street sweeping is performed based on traffic usage. City streets are divided into four (4) zones based on traffic usage and subsequent accumulation of debris. Street sweeping material is temporarily stockpiled at the City's Airport, an approved facility for collecting debris. Annual segregation of the material is conducted with trash being sent to Marion County's Brooks mass-burn facility. "Clean" material is periodically tested for contaminants and used off-site for fill material if suitable. City-owned parking lots are swept by contract as necessary. Private commercial, industrial, and other non-City governments/school parking lots are not swept by the City.</p> <p>Integrated pest management (IPM) procedures are used by the City Parks Operations Division to minimize the use of chemicals and resulting pollutants that may discharge to stormwater systems.</p> <p>All public and private stormwater detention facilities are inventoried when constructed, and subsequently inspected annually. City staff inspect the approximately 750 private detention facilities annually and maintain the outlet control structures. Vegetation and sediment in the facility are the responsibility of the private party responsible for the facility. Letters are sent to inform the private parties of necessary maintenance to the facility. By maintaining the structural outlet controls the City has removed a considerable amount of sediment and debris, therefore improving water quality and considerably lessening localized drainage complaints.</p> <p>Some water quality facilities have been constructed based on recommendations by the City prior to instituting a requirement for these facilities. Some of these facilities have been inventoried. City staff will continue locating and developing an inventory of these facilities in GIS, and also anticipates developing a long-term maintenance program during this MS4 permit cycle.</p> <p>Both sanding and de-icer chemicals are used to treat roadways for ice and snow. Sand material is swept up and disposed of as soon as possible following the return to safe driving conditions and removed to a local asphalt mixing plant for screening and recycling. Storage of the sand pile is located inside a covered pole building as the primary location and a secondary location for storage is outside the pole building.</p> <p>The City carefully monitors and manages the usage and storage of materials such as de-icing and landscape chemicals to minimize their potential impact on surface waters.</p> <p>Utilizing a database to track maintenance activities, the City collects data to annually review and revise their maintenance procedures to increase effectiveness of the maintenance program. These strategies are described in further detail in the associated tasks below.</p>

RC4 Activities for 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measures
<p>Task 1: Continue with the existing street sweeping schedule for all areas, maintaining the record of observations, quantity, and quality of material collected in the daily log books. Collect and compile this information for making recommendations for modified methods, schedules, and for NPDES MS4 permit annual reporting and overall program evaluation.</p>	<ul style="list-style-type: none"> ○ Review street sweeping program annually for effectiveness and any necessary revisions to sweeping schedule. ○ Continue sweeping City streets on four zone schedule, sweeping the heaviest zone 8 times per year and lightest zone 2-3 times per year. ○ Continue sweeping City-owned parking lots as needed. 	<ul style="list-style-type: none"> ○ Record quantity of material collected during sweeping operations. ○ Record number of curb-miles of streets swept. ○ Track and report changes made to sweeping schedule, if any.
<p>Task 2: The City will continue to perform de-icing operations in a way that minimizes stormwater pollution such as conducting annual inspections and training to ensure proper operation of the de-icing chemical storage facility, utilization of the expanded covered storage areas for de-icing materials, maintaining proper function of sediment traps and catch basins in the storage yard, and coordinating de-icing activities with Airport Operations and their 1200-Z permit. The City is also looking for ways to improve current operations by investigating and evaluating potential cost-effective recycling opportunities for used de-icing sand material.</p>	<ul style="list-style-type: none"> ○ Continue current de-icing operations to prevent stormwater pollution. ○ Investigate potential cost-effective recycling opportunities for de-icing sand material. 	<ul style="list-style-type: none"> ○ Document review of recycling opportunities. ○ Document dates of activities for annual inspections and training. ○ Document de-icing quantities applied annually.
<p>Task 3: Continue to review and update the O&M practices and activity schedules defined in the Drainage Program Evaluation Notebook (DPEN) (including updating GIS database). Utilize Hansen IMS data to develop and refine work programs. This review will serve as a basis for budgeting and allocating resources; scheduling work; and reporting on and evaluating the performance and costs for the overall O&M program and specific activities.</p>	<ul style="list-style-type: none"> ○ Update DPEN and IMS database activities and schedules. ○ Create line items in budget for specific O&M activities. ○ Review and update O&M practices and activity schedules every 3 years. 	<ul style="list-style-type: none"> ○ Track revisions made to O&M practices and activity schedules.
<p>Task 4: Continue to improve the O&M training program and activities especially with regards to safety and protection of water quality.</p>	<ul style="list-style-type: none"> ○ Conduct O&M safety meetings twice per month. ○ Attend ACWA committee meetings and workshops as scheduled. ○ Conduct weekly tailgate meetings with Operations crews. 	<ul style="list-style-type: none"> ○ Document reviews and modifications to the O&M training program. ○ Record O&M training activities completed. ○ Document ACWA meetings and workshops attended.
<p>Task 5: Integrated Pest Management (IPM) Program: Salem Parks Operations Division will continue their program for careful monitoring and management of pesticides, herbicides and fertilizers, and will provide public information. Review and refine the IPM Program during the permit cycle, ensuring proper handling and storage of pesticides, herbicides, and fertilizers.</p>	<ul style="list-style-type: none"> ○ Review and refine IPM Program during the MS4 permit cycle. ○ Routine inspections of storage facilities for proper storage of materials and chemicals. 	<ul style="list-style-type: none"> ○ Document revisions made to IPM Program. ○ Document inspections of storage facilities.

<p>Task 6: Continue the storm sewer cleaning and TV inspection program, concentrating on known areas of localized flooding complaints (this alerts the City to locations of debris build-up and minimizes erosion potential) and persistent operation and maintenance problems, and looking for potential illicit discharges and seepage from sanitary sewers, see ILL2. Also focus on significant industrial/commercial areas where potential illicit discharges may be of concern.</p>	<ul style="list-style-type: none"> ○ Concentrate storm sewer cleaning and TV inspection on areas with historical problems and high potential for illicit discharges. ○ Inspect 120,000 LF of conveyance system annually. 	<ul style="list-style-type: none"> ○ Track number of inspections; identify areas with persistent O&M problems. ○ Track number of cross-connections found. ○ Track length of conveyance system cleaned and inspected.
<p>Task 7: Continue supporting annual Stream Cleaning Program. More than one half of the stream miles in the City of Salem are inspected annually by walking each stream segment. Using summer interns the City inspects the riparian areas and streams, picks up litter and garbage, inspects for illicit discharges (see ILL2), addresses potential conveyance concerns, and evaluates areas for stream restoration.</p>	<ul style="list-style-type: none"> ○ Walk 50% of the waterways within the City each year for stream cleanup and enhancement. ○ Complete one stream restoration project each year. 	<ul style="list-style-type: none"> ○ Track length of waterways walked each year. ○ Document stream restoration projects completed each year. ○ Document the amount of litter and garbage removed each year.
<p>Task 8: Continue to regularly inspect and maintain public structural stormwater control facilities. Coordinate with RC 4 Task 9.</p>	<ul style="list-style-type: none"> ○ Regularly inspect all public detention and water quality facilities. 	<ul style="list-style-type: none"> ○ Track number of public facilities inspected and maintained. ○ Track amount of sediment and debris removed from all facilities.
<p>Task 9: Develop and implement a long-term maintenance strategy for public and private stormwater control facilities. This strategy will identify procedures and/or priorities for inventorying, mapping, inspecting, and maintaining facilities.</p>	<ul style="list-style-type: none"> ○ Document and implement a long-term maintenance strategy for public and private stormwater control facilities during the MS4 permit cycle. 	<ul style="list-style-type: none"> ○ Track number of private facilities located, mapped, and inspected. ○ Track progress toward developing a facility long-term maintenance strategy.
<p>Task 10: Ditch maintenance is performed to assure adequate conveyance, and consists of two components:</p> <ol style="list-style-type: none"> (1) Ditch Cleaning - Cleaning consists of removal of sediment in the bottom of road-side ditches only as needed for proper conveyance, with limited vegetation disturbance and the use of straw wattles to reduce sedimentation and erosion within the ditch. (2) Ditch Mowing – Mowing is typically conducted by inmate crews using hand-held equipment. Vegetation cutting facilitates conveyance and reduces the risk of potential fires in summer months. 	<ul style="list-style-type: none"> ○ Regularly inspect and maintain 100% of City ditches using appropriate water quality BMPs. 	<ul style="list-style-type: none"> ○ Track length of ditch maintenance performed (cleaning and mowing). ○ Track amount of sediment and debris removed.
<p>Task 11: Public catch basins are cleaned on a regular basis with a Vactor truck. During catch basin cleaning activities, inspections are done and repairs are scheduled if needed.</p>	<ul style="list-style-type: none"> ○ Clean and inspect 75% of catch basins annually. ○ Periodically analyze the material removed from the catch basins. 	<ul style="list-style-type: none"> ○ Track the number and percent of catch basins cleaned annually. ○ Report on any analysis of removed material.
<p>Task 12: Continue to refine the maintenance program for public and private stormwater detention and water quality facilities. The City maintains an informational packet outlining ownership and maintenance responsibilities and compliance assurance procedures to encourage owners of private detention and water quality systems to perform maintenance. Coordinate with RC 4Task 9.</p>	<ul style="list-style-type: none"> ○ Maintain informational package for ownership maintenance responsibilities for detention and water quality facilities. ○ Implement maintenance activities and requirements identified in long-term maintenance strategy (RC4 Task 9). 	<ul style="list-style-type: none"> ○ Track number of information packets distributed regarding private stormwater control facilities. ○ Track maintenance requirements of long-term maintenance strategy.

RC5 – Public Education and Participation	
Responsible Department:	o Public Works (Water Resources, Stormwater Services)
Responsible Person:	o Water Resources Outreach Coordinator/Stormwater Quality Supervisor
BMP Objective:	o Sustain and enhance community stewardship through stormwater/watershed education and outreach activities.
Pollutants Addressed:	o E-coli, sediments (turbidity), temperature, household waste, garbage, organic matter (dissolved oxygen), toxins, pesticides, mercury, nutrients
BMP Description:	<p>The City has developed a public outreach and education strategy with goals, objectives, identified target audiences, partners, identified target contaminants, messaging and evaluation of outreach effectiveness procedures (see Table A.1 – Public Outreach Program Matrix, June 2008). This approach to public education heightens the community's knowledge and awareness of stormwater quantity and quality issues and their causes, focusing on the community amenity values of our urban watersheds and streams, and encouraging citizens to assume an active ownership in the quality of our urban surface water environment. In addition to water quality and quantity, other environmental information disseminated the public includes water conservation, benefits of stream enhancement, fish recovery through the Endangered Species Act, and riparian protection through the use of native plants. Examples of public education activities include:</p> <p>Pet Waste Program: The City's newly created pet waste program is utilizing several outreach tools, including radio advertisements, mutt mitt locations, television commercials, event participation and school programs.</p> <p>Free Tree Program: The successful Free Streamside Tree Program provides free shrubs and trees to residents living along a Salem's streams.</p> <p>Storm Drain Markers: Markers are used on storm drains and catch basins to alert the public not dump any substance into the storm drainage system. The message is "Dump No Waste – Drains to Stream". Door hangars with the "Dump No Waste" message are distributed in conjunction with the marking event.</p> <p>Dumping: Educational materials are developed and distributed through radio, print advertising, and community organizations to discuss the negative environmental effects of dumping chemicals and other materials into the storm drain system. Information is provided on how to properly dispose of or recycle these materials.</p> <p>School Presentations and Educational Outreach: Salem has a very successful school education program that augments existing science and environmental classes taught in the Salem Keizer School District. Presentations are provided to students ranging from kindergarten through high school and address a variety of water resource topics including protecting water quality and water conservation. Tours are provided of the City's Willow Lake Water Pollution Control Facility, the Geren Island Water Treatment Facility and specially arranged watershed tours. Teachers are trained on developing stream and riparian assessments through the City's Adopt-A-Stream program, See ILL3.</p> <p>The Public Outreach Program Matrix (Table A.1) contains a complete list of prioritized outreach activities, tools, partners, key audiences and measurable goals by target contaminant.</p>

RC5 Activities for 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measures
Task 1: Develop and implement a public outreach and education strategy with goals, objectives, identified target audiences, partners, identified target contaminants, and messaging. Conduct a public education program effectiveness evaluation of outreach procedures/ efforts. Adjust the program based on the results in year five. (See Table A.1 - Public Outreach Program Matrix, June 2008).	<ul style="list-style-type: none"> o Create two (2) public education campaigns* from the Public Outreach Program Matrix. o Support outreach and educational activities for other divisions**. o Conduct an effectiveness evaluation of the outreach program before the end of year four of the MS4 permit cycle. 	<ul style="list-style-type: none"> o Document public outreach and involvement activities for two (2) education campaigns. o Document outreach activities for other divisions. o Document the results of the effectiveness evaluation and subsequent changes to the outreach procedures/efforts.
Task 2: Coordinate activities of various groups within the Public Works Department and other City departments assigned responsibility for public outreach and citizen contacts on stormwater matters.	<ul style="list-style-type: none"> o Quarterly meetings of various groups assigned responsibility for public outreach and citizen contacts on stormwater matters. 	<ul style="list-style-type: none"> o Document quarterly meetings and outcomes.
Task 3: Increase the use of community partnerships to carry out outreach goals.	<ul style="list-style-type: none"> o Develop one new partnership per year to carry out outreach goals. 	<ul style="list-style-type: none"> o Document partnerships and outcomes of partnership activities.
Task 4: Investigate the use of a stormwater utility to provide an adequate funding base to support expanded public outreach (see RC6).	<ul style="list-style-type: none"> o Develop a yearly public education budget. o Document public education and outreach needs in the Stormwater Utility Implementation Plan. 	<ul style="list-style-type: none"> o Document public education budget and expenditures. o Document utility implementation plan showing public education and outreach needs.

* A public education campaign focuses outreach efforts on a target contaminant. The Public Outreach Program Matrix (Table A.1) contains the outline for educational campaigns by target contaminant. The matrix is a complete list of prioritized outreach activities, tools, partners, key audiences, and measurable goals for Salem's stormwater management program. The City will develop robust educational campaigns for the top priority contaminants – focusing limited resources on the most critical contaminants first. Top priority contaminants were selected based on the review of monitoring data.

** Many of the City's BMPs, in addition to RC5, contain outreach tasks. To ensure that all required outreach is being completed, outreach tasks from BMPs other than RC5 are included in the Public Outreach Program Matrix. RC4 -Inventory Private Stormwater Facilities is an example of a BMP that has an outreach task: Annual letters will be mailed to detention basin/water quality facility owners. That task is shown on the matrix and will be completed and documented each year.

RC6 – Stormwater Management Program Financing	
Responsible Department:	o Public Works (Utilities Planning/Stormwater Services)
Responsible Person:	o Chief Utilities Planning Engineer/Stormwater Services Manager
BMP Objective:	o Implement a feasible financing strategy for the timely construction of improvements and satisfactory management of the entire stormwater management program, including adequate operations and maintenance of the stormwater infrastructure system.
Pollutants Addressed:	o Not applicable. Funding is necessary to implement the stormwater program.
BMP Description:	In order to implement the activities presented in this Stormwater Management Plan (SWMP) the City must ensure that there is adequate funding. The City plans to do this by reviewing and updating existing funding mechanisms including the current Stormwater System Development Charge (SDC) methodology, revenue bonds, pursuing grant opportunities, and by implementing a new stormwater utility. In use by a number of municipalities across the state, the stormwater utility provides an equitable and sustainable form of charging for stormwater programs that would give the City dedicated funds for operation and maintenance, planning, public education, capital improvements, and other stormwater programs. These strategies are described in further detail in the associated tasks below.

RC6 Activities for 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measures
Task 1: In conjunction with the updated Stormwater Master Plan (RC1-1), review and update the Stormwater System Development Charge (SDC) methodology to address both stormwater quantity and quality.	o Adopt updated Stormwater SDC methodology by the end of the MS4 permit cycle.	o Report on update to Stormwater SDC methodology.
Task 2: Implement a new stormwater utility capable of generating stormwater fees historically paid for by water and/or sewer utility customers. The new utility will include incentives to encourage users to implement alternative stormwater management practices such as LID.	o Adopt new stormwater utility by the end of the MS4 permit cycle.	o Report on adoption of new stormwater utility.
Task 3: Identify and pursue grant opportunities for stormwater quality projects, including potential retrofit and LID project opportunities.	o Pursue grant opportunities as staff resources allow.	o Track number of grants applied for each year. o Track number of grants received each year.

RC7 – Maintain and Update GIS System	
Responsible Department:	o Public Works (Geographic Information System Section, Public Works Operations)
Responsible Person:	o GIS Supervisor/Operations Database Program Administer
BMP Objective:	o Maintain an up-to-date inventory and mapping of the stormwater drainage system and maintenance activities in an accessible database form to provide a valuable tool for planning, monitoring level of service for maintenance, track effectiveness of the Stormwater Management Program, and to support an adequate budget for the stormwater program.
Pollutants Addressed:	o Not applicable. Assists with operations and maintenance activities and overall program management.
BMP Description:	<p>The City continually updates its Geographic Information System (GIS) database so that the City's MS4 system, including open channels and piped systems are accurate, up to date, and can be relied upon for stormwater planning, preliminary project design, and program management. The GIS database contains information on the stormwater conveyance system, including piped systems, ditches, structural controls, capital improvement projects, as well as operation and maintenance activities.</p> <p>In addition to the GIS system, operations staff use the Hansen IMS database for tracking asset-related data and work. Efforts are in progress to integrate the two systems to increase efficiency in updating each system and to provide greater access to available data by more City staff.</p> <p>More detail is provided in the task descriptions below.</p>

RC7 Activities for 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measures
Task 1: Continue maintenance of the GIS database and Hansen IMS database. These on-going updates will also reflect completion of any Stormwater Master Plan capital improvement projects, new facilities added to the system, potential “hot-spots” for illicit discharges, refinement of data for the existing system, updated information on wetlands, perennial streams, waterways, and floodplain/floodway designations, and information updated on a periodic basis for the City's Urban Growth Boundary. The GIS database will be accessible by City departments for review purposes.	<ul style="list-style-type: none"> o Continue performing database updates annually. o Create record of GIS maintenance activities. 	<ul style="list-style-type: none"> o Record maintenance/updates made to database.
Task 2: Integrate the information in the GIS and IMS. The City plans to integrate the data from both the GIS and Hansen IMS databases so that information in the Hansen IMS database can be visualized using the GIS system.	<ul style="list-style-type: none"> o Create an action plan for how the GIS and IMS system will be integrated and updated. o Implement action plan to integrate GIS and IMS. 	<ul style="list-style-type: none"> o Track completion of action plan items. o Track implementation status of database integration.

RC8 – City Stormwater Grant Program	
Responsible Department:	o Public Works (Directors Office)
Responsible Person:	o Public Works Directors Office
BMP Objective:	o Maintain a grant program to assist property owners, businesses and industries in their specific efforts undertaken to improve stormwater quality.
Pollutants Addressed:	o Not applicable. Assists with funding projects to address pollutants.
BMP Description:	<p>The City implements a program that provides small matching grants for restoration and enhancement of properties to enhance water quality benefits. Projects may reduce stormwater runoff, restore natural areas, and protect water quality through education.</p> <p>Grants have been offered to volunteer groups and riparian zone land owners for several years to promote restoration projects. To date, over \$271,063 has been awarded for 39 waterway projects. Using results of the prioritization of watersheds in RC1 and monitoring results in MON1, the City will identify which watersheds to focus efforts for future grant projects.</p> <p>Currently focused on volunteer organizations and educational facilities, the City intends to expand the program to industry, businesses, and individuals, pending available funding.</p> <p>The City will evaluate its criteria for selecting projects to optimize the benefits and the costs for each project and to assure meeting overall water quality goals of the Stormwater Management Program in reducing pollutants to the MEP.</p>

RC8 Activities for 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measures
<p>Task 1: Expand matching grant program for watershed protection and preservation to allow for funding of stormwater-related activities, such as promoting water-wise landscaping, reduction of stormwater discharges, restoring riparian areas, stormwater quantity reduction, stormwater quality/treatment, etc.</p>	<ul style="list-style-type: none"> o Continue to fund \$50,000 grant program. o Expand matching grant program for watershed protection. o Promote the grant program in conjunction with RC5 outreach activities. 	<ul style="list-style-type: none"> o Maintain a list of grant awards tracking funding and projects.

RC9 – Legal/Ordinances	
Responsible Department:	<ul style="list-style-type: none"> Community Development and Legal Departments
Responsible Person:	<ul style="list-style-type: none"> Community Development Director
BMP Objective:	<ul style="list-style-type: none"> Provide legal authority for the City to implement the SWMP.
Pollutants Addressed:	<ul style="list-style-type: none"> Not applicable. Legal authority is required to implement the SWMP.
BMP Description:	<p>In order for the City to enforce its strategies for improving water quality through the management of stormwater runoff, it must have proper legal authority. This includes the BMPs outlined in this Stormwater Management Plan. The Salem Revised Code (SRC) contains numerous chapters providing the City with this legal authority, including:</p> <ul style="list-style-type: none"> SRC Chapters 47, 73, and 74 which include provisions related to stormwater management and the prevention and detection of illicit discharges, including inspections. SRC Chapter 68 which pertains to the preservation of riparian trees and vegetation. SRC Chapter 140 which pertains to flood plain and overlay zones. SRC Chapter 141 which pertains to development/redevelopment within the Willamette Greenway overlay zone. SRC Chapter 75 which pertains to erosion prevention and sediment control for construction sites. <p>The City will continue to review and revise City codes and ordinances to address new regulatory requirements and coordinate this with the stormwater program.</p>

RC9 Activities for 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measures
Task 1: In process of revising the Stormwater Management Design Standards (RC 3 Task 1) and developing a stormwater-dedicated chapter to the SRC (RC 9 Task 3), coordinate with Community Development's effort to adopt a Unified Development Code (UDC). It is envisioned that the stormwater dedicated SRC would be integrated into the UDC framework.	<ul style="list-style-type: none"> Adopt the UDC and integrate stormwater-related revisions to the SRC by the end of the MS4 permit cycle. 	<ul style="list-style-type: none"> Report on progress for adoption of UDC and integration of stormwater-related SRC.
Task 2: Continue to enforce the SRC and review and revise it as necessary to reflect the updated Stormwater Management Design Standards that principally focus on requirements associated with on-site water quality facilities for new development or redevelopment (RC3).	<ul style="list-style-type: none"> Revise SRC (as needed). 	<ul style="list-style-type: none"> Track any MS4 stormwater-pertinent revisions made to the SRC.
Task 3: Develop a new SRC chapter dedicated solely to stormwater management. It is currently envisioned that this will be done after the City's renewed MS4 Permit is issued, and in conjunction with implementation of the new stormwater utility and updated Stormwater SDC Methodology (RC6) and the updated Stormwater Master Plan (RC1).	<ul style="list-style-type: none"> Adopt the new SRC chapter for stormwater by the end of the MS4 permit cycle. 	<ul style="list-style-type: none"> Report on adoption of the new SRC chapter for stormwater, and processes/milestones enroute to formal adoption of the SRC revisions.

ILLI - Spill Prevention and Response Program	
Responsible Department:	<ul style="list-style-type: none"> o Fire Department (Lead) o General Services (Fleet Services, Facilities Maintenance), Public Works (Environmental Services) – Key Roles
Responsible Person:	<ul style="list-style-type: none"> o Deputy Fire Chief Fire and Life Safety
BMP Objective:	<ul style="list-style-type: none"> o Continue the Spill Prevention and Response programs to reduce the frequency and volume of spills to the stormwater system.
Pollutants Addressed:	<ul style="list-style-type: none"> o Oil and grease, sediments, nutrients, metals, organics, and toxics
BMP Description:	<p>The City of Salem has programs to address both emergency and non-emergency spills that have the potential to impact the City's MS4 system and surface waters. The Salem Fire Department Regional Hazardous Materials Team provides emergency response services on a regional basis through an IGA with the State of Oregon. Public Works provides technical support and may assist with clean up details, as appropriate, and as requested by the incident commander during the emergency.</p> <p>The Regional Hazardous Materials Team provides regular training to Salem staff and other agencies in the region. This training assures proper responses to emergencies and assures water quality issues are addressed along with safety concerns.</p> <p>Environmental Services (ES) works with new development and existing development to identify potential chemical storage, handling and use on site, and the on-site safeguards against spills (see IND1 for additional information). An Accidental Spill Prevention Plan (ASPP) is required to be developed and submitted to ES for all facilities with the potential of chemical spills particularly if they might impact the storm drainage system. ES works diligently with the public and businesses to identify options for proper disposal or recycling of chemicals.</p> <p>In addition to regional efforts, the City performs a number of activities to prevent spills from occurring. This includes regular inspection and maintenance of City vehicles and updating the City's Operations Pollution Prevention Plan, that addresses BMPs to prevent pollutants from entering the MS4 system during regular maintenance and Operations complex activities.</p>

ILL1 Activities for 2010– 2015		
Task Descriptions	Measurable Goals	Tracking Measures
<p>Task 1: Continue to review and refine the existing spill prevention and emergency response program to protect ground and surface water quality. New activities will be proposed and implemented as appropriate, and coordination and cooperation among other relevant agencies and ODOT will be maintained and improved. This review will be coordinated with the de-icing activities of the Airport Operations and their 1200-Z permit, and possibly the Oregon Air National Guard.</p>	<ul style="list-style-type: none"> o Continue to implement the spill prevention and emergency response program and review and revise as needed. 	<ul style="list-style-type: none"> o Document refinements to cleanup procedures for vehicular accidents and structural fires.
<p>Task 2: Continue to coordinate timely responses to, and clean-up of emergency response sites and structural fires among Fire, Building and Safety, Development Services, and Environmental Services staff. The Fire Department has the lead role for response at emergency response and structural fire sites and all major vehicular accidents. Environmental Services (ES) staff will provide assistance when requested by the on-scene incident commander. One of the ES responsibilities is to make sure that the cleanup activities are conducted in an environmentally sensitive manner.</p>	<ul style="list-style-type: none"> o Develop a review schedule with a checklist for the spill response plan. 	<ul style="list-style-type: none"> o Track the number and category of spill events responded to, including an estimate of the amount of spilled materials collected and any associated enforcement actions.
<p>Task 3: Continue to conduct daily City vehicle and equipment inspections for leaks and repairs as needed. Staff will review current procedures on an ongoing basis and implement improvements as necessary.</p>	<ul style="list-style-type: none"> o Continue to implement the daily equipment inspection program. 	<ul style="list-style-type: none"> o Report revisions to the daily inspection program.

<p>Task 4: Develop an updated Operations Pollution Prevention Plan; incorporating new/expanded/relocated Operations-oriented facilities.</p>	<ul style="list-style-type: none"> ○ Update the Operations Pollution Prevention Plan by the end of the MS4 permit cycle. ○ Implement the updated Operations Prevention Plan upon completion. 	<ul style="list-style-type: none"> ○ Track progress toward updating the Operations Pollution Prevention Plan. ○ Track implementation of the Operations Pollution Prevention Plan.
---	--	---

ILL2 – Illicit Discharge Elimination Program	
Responsible Department:	o Public Works (Stormwater Services, Environmental Services)
Responsible Person:	o Stormwater Services Manager
BMP Goal:	o Develop and implement an Illicit Discharge Elimination Program (IDEP) to prevent, detect, and control illicit discharges to the stormwater system, including infiltration from the sanitary sewer system.
Pollutants Addressed:	o Oil and grease, hydrocarbons, bacteria, metals, sediments, organics, toxics, paint, and other wastes.
BMP Description:	<p>The illicit discharge elimination program consists of a number of actions, including: water quality monitoring, TV inspection of piped conveyance systems, responding to and investigating complaints, City crew observations, collaboration with Wastewater Collection Services to minimize and eliminate cross connections during construction, and using wastewater pretreatment inspections to address both stormwater and wastewater issues.</p> <p>Cleaning and TV inspection of both the sanitary and stormwater sewers provide information on potential seepage, cross-connections, or infiltration of sanitary waste into the City's MS4 system.</p> <p>Water quality monitoring alerts the City to high levels of pollutants that might be related to upstream spills or illicit discharges. Any unusual findings are investigated and tracked to identify the cause. This includes additional monitoring and identifying upstream activities that may be a potential cause of the pollutants identified. The City proceeds with efforts to eliminate the source after identification.</p> <p>Environmental Services (ES) provides immediate response to reports of spills, illicit discharges or any unusual substances noticed by the public or City crews. For small discharges, ES provides first response for containment and cleanup, as necessary. They further investigate the source and bill responsible parties for clean up costs if they can be identified.</p> <p>The City continually evaluates their processes for identifying and eliminating illicit discharges. ES will provide updates on known contaminated sites to the Information Technology (IT) workgroup to be included in the city's GIS system. Strategies will be developed to focus public education efforts (RC5), maintenance programs (RC4) and other relevant City programs on identifying areas of potential sources of pollutants.</p> <p>Descriptions of specific tasks associated with this BMP are below.</p>

ILL2 Activities for 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measures
Task 1: Continue to respond to reports of unusual discharges or suspicious water quality conditions within the stormwater system and urban streams. Where able, identify sources/causes and implement appropriate corrective actions. Utilize database to document associated activities.	<ul style="list-style-type: none"> o Respond to reports of illicit discharges and suspicious water quality conditions. o Maintain database to document unusual/suspicious discharges, sources found, and corrective actions taken. 	<ul style="list-style-type: none"> o Track calls and mitigation actions taken in database.
Task 2: Environmental Services staff will continue inspections of the City's wastewater users, through the pretreatment program, verifying the proper handling and disposal of both wastewater and stormwater.	<ul style="list-style-type: none"> o Inspect City's wastewater users for proper management of wastewater and stormwater. 	<ul style="list-style-type: none"> o Track number of inspections and associated findings.
Task 3: Work with Wastewater Collection Services to identify and correct cross-connections between the sanitary sewer and stormwater systems.	<ul style="list-style-type: none"> o Review stormwater and ambient stream monitoring data to identify possible cross-connection discharges into the stormwater system. o Maintain communications with Wastewater Collections and other City staff to identify any system cross-connection problems. 	<ul style="list-style-type: none"> o Document number of cross-connection identified and corrective actions taken.

ILL2 Activities for 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measures
<p>Task 4: Develop and update a storm sewer outfall dry weather inspection and monitoring prioritization plan.</p>	<ul style="list-style-type: none"> ○ Prioritize outfalls for storm sewer outfall inspection and monitoring, and inspect annually. ○ Coordinate prioritization process with ILL 2 Task 5. 	<ul style="list-style-type: none"> ○ Document review of outfall monitoring plan. ○ Document priorities established for monitoring and inspection. ○ Track dry weather inspections conducted and results of inspection.
<p>Task 5: Identify and map contaminated sites in the GIS system. With input from other City departments, identify a list of areas where there either has been a substantial spill or there is the potential for a spill or illicit discharge. These areas are identified based on activities on site, history of problems, or specific industry, for example. These areas will be mapped in the GIS system for use across City departments.</p>	<ul style="list-style-type: none"> ○ Continue to identify and map contaminated sites in the GIS system. 	<ul style="list-style-type: none"> ○ Track number of contaminated sites added to GIS system.

ILL3 - Illegal Dumping Control Program	
Responsible Department:	o Public Works (Lead Role - Stormwater Services; supporting roles - Environmental Services, Transportation Services, Water Resources)
Responsible Person:	o Stormwater Services Manager
BMP Goal:	o Facilitate efforts to report illegal dumping, illicit connections and other such incidents and foster efforts to clean up illegally dumped materials.
Pollutants Addressed:	o Solid wastes, yard debris, pesticides, herbicides, paints, solvents, oil and grease, hydrocarbons, metals, sediments, organics, toxics, and other wastes. Illegal dumping can be a significant source of almost all types of pollutants in stormwater.
BMP Description:	<p>There are several programs the City uses to address illegal dumping:</p> <p>Public education and involvement with the Adopt-A-Street and Adopt-A-Stream programs. Volunteers pick up litter and debris along streets or streams with equipment provided by the City. The City picks up the bagged material following the clean up event.</p> <p>The City investigates all reports of dumping and spills and is able to receive complaints on a 24 hours basis. The Dispatch Communication Center operates on a 24 hour basis and notifies Environmental Services of major events that need immediate action. Some reports of illegal dumping or spills are reported by the DEQ's Salem office as appropriate.</p> <p>Recycled material and household hazardous materials are collected by Marion County. The City supports these efforts and provides education to the public on where to take these items.</p> <p>Salem sponsors an annual yard debris clean up day. A day is selected in the fall and advertised for collecting yard debris delivered to strategically located neighborhood collection sites, or placed in the street by Salem residents.</p>

ILL3 Activities for 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measures
Task 1: Continue to sponsor the Adopt-a-Street Program. The program is an effective way to get residents involved in keeping the community's streets clean and consequently preventing trash and debris from entering the storm drainage system.	o Continue to support the Adopt - a-Street Program.	o Record the miles of adopted streets, number of participating groups, and volume of litter collected through the Adopt-a-Street Program.
Task 2: Continue to provide the 24-hour Public Works Dispatch Reporting Center to receive and respond to calls regarding illegal dumping and other environmental complaints/problems and responses thereto. Continue to advertise hotline on City website, utility bill inserts, business cards, public brochures, and consumer confidence reports. . As circumstances warrant, publicly report illicit discharges through use of various media outlets.	o Continue to operate the 24-hour Public Works Dispatch Reporting Center. o Assign reports to appropriate City staff for action, including actions taken under ILL2-1.	o Record number and types of reported illegal dumping incidents. o Track media outreach when a discharge warrants.
Task 3: Continue to support the Adopt-a-Stream program, which involves teachers and students in gathering water quality data from streams, thereby providing water resource education to students through experience. The City supports the program by facilitating projects and providing technical assistance and resources.	o Continue to support the Adopt-a-Stream program.	o Maintain a descriptive list of adopt a stream program projects, objectives, outcomes upon completion, and number of participants.
Task 4: Continue to support Marion County in their efforts to provide convenient alternatives for legal disposal of household hazardous wastes and other recyclable materials.	o Continue to support Marion County in providing alternatives for household hazardous waste disposal.	o Document frequency and type of support activities.
Task 5: Continue to support the annual yard debris cleanup effort.	o Support the annual yard debris cleanup effort.	o Record amount of debris cleaned up and level of participation.

INDI - Industrial Stormwater Discharge Program	
Responsible Department:	o Public Works (Environmental Services, Development Services)
Responsible Person:	o Environmental Compliance Manager
BMP Objective:	o Control the discharge of pollutants to the storm drainage system from existing and developing commercial, industrial, and municipal solid waste facilities
Pollutants Addressed:	o Depends on industry. Heavy metals, organics, oil and grease are most probable.
BMP Description:	<p>The City manages the Wastewater Industrial Pretreatment Program, under SRC Chapter 74 that involves permitting of industries to meet local discharge limits set by the EPA, DEQ, and the City. Environmental Services implements this program and conducts inspections of industries that contribute significant loads to the wastewater treatment system. Stormwater system inspections are performed simultaneously during the field visit for pretreatment industries. The City requires containment structures as well as Accident Spill Prevention Plans for those industries that have the potential to negatively impact the sanitary system or storm sewers. Additional inspections are conducted on businesses, including commercial and industrial facilities that do not fit into the pretreatment requirements, on an as-needed basis.</p> <p>As part of the update of the Stormwater Management Design Standards, industrial facilities may be required to incorporate water quality facilities to target specific pollutants that may be present in stormwater runoff based on industrial activities at the site.</p> <p>Environmental Services checks on on-site activities including outdoor stockpiles, and on-site stormwater facilities to make sure BMPs are in place to prevent pollutants from entering stormwater runoff. Technical information is provided to businesses as appropriate to assist with on-site BMPs.</p> <p>The City coordinates with ACWA and other organizations to make sure staff remain informed of the latest BMPs and issues related to industrial stormwater issues and effective BMPs to minimize impacts from industrial stormwater discharges.</p> <p>Environmental Services maintains a business database, adding new facilities on an on-going basis. The database is maintained as part of the wastewater pretreatment and illicit discharge elimination program (ILL2), and includes the North American Industrial Classification System (NAICS) code. General classifications will be used to reduce the number of categories of industries to track. For instance, all restaurants will be a single class. As new customers call Operations Customer Services to set up a sanitary sewer account, they will be sent a survey requesting specific information including: type of industry, or business and activities on site. This information will be used to target public education campaigns, such as providing targeted public education campaigns to dentists or laundromats. Potential problem areas will be identified, in part, using this information.</p>

IND1 Activities for 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measures
<p>Task 1: Environmental Services will inspect stormwater systems while conducting inspections of City-permitted industrial wastewater users, and work with DEQ to coordinate the permitting and compliance processes for industrial users in the Salem area, including DEQ-issued 1200-Z permitted sources, underground storage tank (UST) removal, and site remediation permits issued by DEQ for sources/sites within the City. Coordination options include: receiving information on proposed 1200-Z permits, commenting on proposed permits, and meeting periodically with DEQ on coordination efforts.</p>	<ul style="list-style-type: none"> o Inspect stormwater systems while conducting inspections of City-permitted wastewater users. o Develop process to coordinate with DEQ on industrial permits within the City. 	<ul style="list-style-type: none"> o Track coordination efforts with DEQ. o Include stormwater observations as appropriate on inspection reports and follow-up actions.
<p>Task 2: During plan review, review industrial facilities for the potential of requiring pretreatment of stormwater prior to discharge based on the industrial activities of the specific facility. Conduct inspections of industrial facilities requiring stormwater pretreatment to ensure structural controls have been built according to approved plans.</p>	<ul style="list-style-type: none"> o Review industrial plans as necessary for additional stormwater treatment. o Conduct inspections once construction is completed to ensure work was done in accordance with approved plans. 	<ul style="list-style-type: none"> o Maintain database of plans reviewed and final inspections conducted.

IND1 Activities for 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measures
<p>Task 3: Surveys are sent to applicable business classes (restaurants, metal finishers/platers, radiator shops, dry cleaners, printing shops, photo processors, etc.) as part of the pretreatment business survey database, part of the industrial pretreatment program for wastewater. Customers will be surveyed on major on-site activities to identify potential locations for public education, future sampling, and tracking down illicit discharges. Illicit stormwater discharges from these business groups are addressed in ILL 2.</p>	<ul style="list-style-type: none"> ○ Send surveys to new customers as accounts are opened. ○ Enter survey results into database – on-going as surveys are returned. 	<ul style="list-style-type: none"> ○ Track number of surveys sent out; ○ Track number of surveys returned and entered into database. ○ Track targeted public education activities for specific industries.
<p>Task 4: Continue the semi-annual Technical Bulletin for the City's industrial users and produce other materials for these users. This activity is principally associated with the City's wastewater Pretreatment Program, but will be used as a vehicle to address stormwater-related issues as well.</p>	<ul style="list-style-type: none"> ○ Produce two technical bulletins for industrial users each year. 	<ul style="list-style-type: none"> ○ Track published technical materials prepared for industrial users each year.

CON1 – Construction Site Control Program	
Responsible Department:	<ul style="list-style-type: none"> Public Works (Lead Role - Water and Environmental Services; Supporting Role – Development Services, Environmental Services, Engineering), Community Development (Building and Safety).
Responsible Person:	<ul style="list-style-type: none"> Water and Environmental Resources Manager
BMP Objective:	<ul style="list-style-type: none"> Implement and refine the Erosion Prevention and Sediment Control program for construction and building sites that are not subject to DEQ's 1200-C permit program.
Pollutants Addressed:	<ul style="list-style-type: none"> Sediments, heavy metals, turbidity.
BMP Descriptions:	<p>SRC Chapter 75 provides the City with the legal authority to enforce erosion prevention and sediment control on construction sites. The City implements several programs, policies, and educational activities in order to enforce this portion of the City code. The City provides training and a Technical Guidance Handbook to assist both City staff and private contractors in implementing effective erosion control measures. Developers must submit erosion control plans that display both structural and non-structural erosion and sediment control BMPs for construction sites that meet or exceed the threshold indicated in SRC 75. These BMPs must be in place prior to commencement of work. The City erosion control inspector visits each construction site daily for erosion control compliance. Violators are first given written notices; if the issue is not resolved after the notice is given, a ticket is issued. The City plans to continue its erosion control program and periodically review and revise it as appropriate. More detailed descriptions of specific tasks associated with this BMP are described below.</p> <p>Environmental Services and Operations staff coordinate to minimize pumping trench water at work sites on public projects. City construction inspectors work with private contractors to properly dispose of waste materials and maintain clean construction sites.</p>

CON1 Activities for 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measures
Task 1: Continue implementation of the Erosion Prevention and Sediment Control program for developments that meet or exceed the threshold indicated in SRC Chapter 75, which includes the submission of erosion prevention and sediment control plans with structural and non-structural BMPs. Review program experiences annually and implement improvements as appropriate, including Code amendments if needed.	<ul style="list-style-type: none"> Implement SRC 75 Conduct annual program reviews Implement appropriate improvements and/or Code amendments. Perform plan reviews for erosion control requirements. 	<ul style="list-style-type: none"> Track number of erosion control plans reviewed for compliance with SRC 75.
Task 2: Continue to train and educate City staff and private contractors about stormwater pollution at construction sites, with an emphasis on prevention and control BMPs. Provide notice to construction site operators concerning where education and training to meet erosion and sediment control requirements can be obtained.	<ul style="list-style-type: none"> Provide annual erosion control training to City staff and private contractors. 	<ul style="list-style-type: none"> Track education and training programs conducted and number of staff/public trained
Task 3: Document and streamline site plan review, inspection, and enforcement procedures for the construction site runoff control program.	<ul style="list-style-type: none"> Complete documentation of site plan review, inspection, and enforcement procedures before the end of year four of the MS4 permit cycle. 	<ul style="list-style-type: none"> Track completion of documented procedures.
Task 4: Continue to review and update the Erosion Prevention and Sediment Control Technical Guidance Handbook.	<ul style="list-style-type: none"> Update Technical Guidance Handbook before the end of year four of the MS4 permit cycle. 	<ul style="list-style-type: none"> Track updates made to the Technical Guidance Handbook.

<p>Task 5: Continue to coordinate with the City's 1200-CA Permit for City construction projects subject to its program.</p>	<ul style="list-style-type: none"> ○ Requirements for 1200-CA compliance incorporated into City construction plans, specifications, and contract documents ○ Make erosion prevention and sediment control a key agenda item at all pre-construction conferences. ○ Include inspection of all site erosion prevention and sediment control measures as part of City projects. 	<ul style="list-style-type: none"> ○ Track renewal of 1200CA permit.
--	---	---

MON1 – Monitoring	
Responsible Department:	<ul style="list-style-type: none"> ○ Public Works (Stormwater Services)
Responsible Person:	<ul style="list-style-type: none"> ○ Stormwater Services Manager
BMP Objective:	<ul style="list-style-type: none"> ○ Generate data on existing conditions and water quality trends of surface waters and stormwater runoff for effective implementation of water quality BMPs and activities described in this Stormwater Management Plan.
Pollutants Addressed:	<ul style="list-style-type: none"> ○ All
BMP Description:	<p>The City conducts flow, water quality, and biology monitoring activities on City waterways. These monitoring efforts are reviewed and evaluated to determine overall watershed health as well as hot spots for illicit discharges. Once data is reviewed and evaluated the City uses it to prioritize investigations, maintenance, and capital improvement projects.</p> <p>To augment the water quality sampling program, the City has conducted bioassessment studies in several of its streams to assess how well the streams are functioning and to serve as a baseline in helping to determine if future stormwater water quality facilities and stream/habitat rehabilitation and enhancement efforts are effective. The City plans to continue to perform bioassessments to assist in evaluating the health of the stream and to evaluate the effectiveness of the overall stormwater program.</p> <p>More detailed information is included in the task descriptions below.</p>

MON1 Activities for 2010 – 2015		
Task Descriptions	Measurable Goals	Tracking Measures
<p>Task 1: Continue to install and maintain flow and water quality monitoring stations in City waterways to support selection of capital improvement projects, update the hydrologic-hydraulic computer model, and help direct policies to protect the health of these water bodies. The actual rate of installation and the total number of stations will be based on the maintenance requirements of the stations, available funding, and coordination with urban watershed assessments/plans.</p>	<ul style="list-style-type: none"> ○ Install additional monitoring stations. ○ Monitor the station alarms in conjunction with the illicit discharge control program (ILL2 Task 1). ○ Follow-up on potential hotspots or problem areas as may be identified through data analyses. 	<ul style="list-style-type: none"> ○ Track number of additional monitoring stations implemented.
<p>Task 2: Continue the urban stream and Willamette River water quality sampling program, with emphasis on reviewing and evaluating sampling data to prioritize investigations and improvement/maintenance projects. This sampling augments the monitoring plan included in the City's 2008 NPDES MS4 Permit Renewal application.</p>	<ul style="list-style-type: none"> ○ Update database for collected data. ○ Review collected data for purposes of trending and benchmarking by the end of the permit term. ○ Follow-up on potential hotspots or problem areas as may be identified by the data review. 	<ul style="list-style-type: none"> ○ Document findings regarding trends.

<p>Task 3: Continue to implement all components (MS4 outfall, instream, pesticide, and macro-invertebrate) of the city's "Surface Water and Stormwater Monitoring Plan."</p>	<ul style="list-style-type: none"> ○ Implement the city's stormwater monitoring plan, including MS4 outfall, instream, pesticide, and macro-invertebrate monitoring components. 	<ul style="list-style-type: none"> ○ Provide summary statistics for sampling results from each wet-weather season. ○ Track any modifications to the monitoring plan.
---	--	--