

EXECUTIVE SUMMARY

This document is the 2nd Annual Report for the City of Salem's Stormwater Management Plan (SWMP). The 2nd Annual Report provides a status and formal evaluation of the City's SWMP. The document is divided in two parts: (i) Part I includes the status report for the period July 1, 2004 – June 30, 2005; and (ii) Part II includes the evaluation of the SWMP and monitoring program. This Executive Summary provides a summary of the modified SWMP to be implemented during the remainder of the permit period (now until February 28, 2009)

In 1990, the United States Environmental Protection Agency (EPA) published its Phase I regulations governing stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) program of the Clean Water Act. In Oregon, EPA delegated the permitting of municipal separate storm sewer system (MS4) discharges to the Oregon Department of Environmental Quality (DEQ). The City prepared its original SWMP in 1996 as part of the requirements for issuance of the initial MS4 Permit in December 1997. In April 2002, the City submitted an application for renewal of its MS4 Permit, along with a revised SWMP. The DEQ issued the renewed permit in March 2004.

The primary objective of the SWMP is to provide an outline for City activities that will satisfy the NPDES MS4 regulations (40 CFR 122.26(d)(2)(iv)). In developing the original and current SWMP, the City interpreted the regulations in a way that was deemed most practicable and logical for the Salem permit area, using existing resources and those projected to be available during the five-year compliance period for the NPDES Permit. The management plan represents those best management practices (BMPs) the City believes will reduce pollutants discharged from the municipal separate storm sewer system (MS4) to the “*maximum extent practicable*” as required by the regulations.

Permit Requirements

The MS4 permit has three main sections relevant to the contents of SWMP:

- Schedule A lists the controls and limitations of the MS4 as follows:
 1. The permittee must implement all applicable provisions in the currently accepted SWMP.
 2. The permittee must reduce the discharge of the pollutants from the MS4 to the maximum extent practicable (MEP).
 3. The permittee must effectively prohibit non-stormwater discharges into the MS4 unless such discharges are otherwise permitted by an existing NPDES permit.
- Schedule B of the MS4 permit (March 2004) specifies minimum monitoring requirements. Schedule B also specifies minimum reporting requirements, including submittal of an annual report to the DEQ each year. A more extensive 2nd Annual Report and Permit Renewal Annual Report are also specified.
- Schedule D of the MS4 permit includes a description of the required elements of the SWMP. The required SWMP elements are as follows:
 1. Structural and source controls for residential and commercial areas;
 2. A program for the control of illicit discharges and improper disposal into the storm drainage system;

3. A program to monitor and control pollutants from industrial facilities; hazardous waste treatment, storage and disposal (TSD) facilities; and municipal landfills; and
4. A program to implement and maintain structural and non-structural BMPs to reduce pollutants from construction sites.

SWMP Evaluation Process

The current SWMP (April 2002) has 26 BMPs that have been categorized in four major areas that correspond to the four SWMP elements listed above. These BMPs along with the monitoring program were reviewed by the City per the evaluation requirements in the MS4 permit. Specific evaluation methods included the following:

- Staff interviews – Self-evaluation of BMP effectiveness by City staff directly involved in BMP implementation.
- Peer community workshop – An open forum workshop with staff from four other Phase I MS4 jurisdictions to assess the City of Salem’s program against their own and industry-wide practices.
- City staff workshop – Evaluation of BMP effectiveness, with a focus on implementation issues.
- Public outreach review – Specific review of public-outreach and public involvement BMPs and approach for satisfying public input during the SWMP evaluation and modification process.
- Review overall schedule as part of evaluating implementation.

As part of the review process, the City also completed a qualitative evaluation of the following:

- Comparison of the SWMP components against the required elements in the federal rules (40 CFR Sec. 122.26[d][iv][A] through [D]);
- Effectiveness of BMPs to address the 303(d) pollutants; and
- Evaluation of non-stormwater discharges.

BMP Modifications

Based on the evaluation process, the City identified improvements and modifications to the current SWMP (April 2002). The modifications/improvements made to the BMPs are not considered “significant” in terms of overall direction, types of activities, or level-of-effort. The changes are considered to fall within the context of “adaptive management.” Modifications to BMP tasks fall into the following types of changes:

- Retained tasks. Tasks that satisfy a specific required element were retained.
- Ongoing tasks. Task descriptions were noted as “continuing.”
- Removed tasks. Tasks that have been completed were removed, unless the task or BMP was intended to be an ongoing activity or required review or updates to be effective. BMPs or tasks where studies or information no longer support implementation were removed.
- Modified tasks. Many BMPs were updated, with non-substantive edits to task descriptions. Task descriptions were stream-lined to include less detail on specific activities.
 - Performance indicators were reviewed and updated to be more quantifiable. Each task was given at least one performance indicator to better track progress and status of the BMP.
 - Several tasks require coordination or integration with the pending Willamette Total Maximum Daily Load (TMDL) Implementation Plan and urban watershed plans being developed by the City over the next few years.

- Several tasks related to regional detention facilities have been modified or removed based on the findings from the City’s Regional Detention Facilities Study (2002).
- Several tasks related to coordination with DEQ on 1200-C and 1200-Z permits have been modified or removed since the City is not currently pursuing agent responsibility for implementation.

Modified SWMP

The proposed BMPs (modified as described above) are summarized in the following series of tables. The modified SWMP now has 25 BMPs (two BMPs, RC16 and CON3, were combined). A separate summary table is provided below for each BMP and presents the BMP objective and general description of the strategy. The strategy is generally a summary of the specific tasks that make up the BMP. The detailed descriptions and performance indicators are presented in Part II – Section 17 of the 2nd Annual Report and SWMP Evaluation.

RC1 - Capital Improvements	
BMP Objective:	Identify, prioritize, and implement stormwater-related capital improvements to protect life and property, minimize flood damages, and reflect a balanced perspective between water quantity and quality issues.
Strategy:	With the initial stormwater system improvement projects from the Stormwater Master Plan (2000) identified (focusing on stormwater quantity and conveyance; water quality facilities; stream and habitat enhancements; and stream inventory, monitoring and modeling activities), the City intends to review and update the prioritization of the projects based on information from monitoring, new standards, and additional studies. The prioritization will also occur in conjunction with development of the TMDL (Total Maximum Daily Load) Implementation Plan and watershed assessments planned by the City. The prioritized projects will be implemented based on availability of funding and the urgency of the need, and reviewed annually as part of the CIP process.

RC2 - Stormwater Detention Program	
BMP Objectives:	Ensure that stormwater detention facilities are managed for optimum effectiveness in order to continue to reduce flooding and provide water quality benefits where technically, environmentally and financially feasible and practical.
Strategy:	<p>The Stormwater Master Plan (2000) identified regional detention as a high priority. The City of Salem requires new developments to provide on-site (local) stormwater detention facilities to reduce flooding impacts. Currently, all public and private stormwater detention facilities have been inventoried and are inspected annually. Deficiencies in facilities are corrected, while owners of privately-owned facilities are also provided information outlining responsibilities for proper maintenance.</p> <p>Based on the findings of the regional detention study (2002), the City will not prioritize construction of regional detention facilities, but will continue to explore their feasibility on a case-by-case basis as opportunities arise. With limited opportunities for regional facilities, the City will maximize the water quantity and quality benefits of local detention facilities. The City will also ensure that all local detention facilities (City- and privately-maintained) continue to operate properly.</p>

RC3 - Water Quality Facilities

BMP Objective:	Commensurate with funding levels, develop and implement a surface water quality facility program to meet the requirements of the NPDES Municipal Stormwater Permit, while integrating the needs of DEQ's TMDL Program, Endangered Species Act, and the water quality needs of the community's urban streams.
Strategy:	Except for high risk or problematic developments, the City does not currently require stormwater water quality facilities to treat stormwater from developed sites and has not adopted standards for water quality facilities. However, the City fully expects to require water quality facilities in the future under a water quality program that integrates the requirements of NPDES MS4, TMDL, and ESA regulatory programs. To manage the transition and financial implications of these new requirements, the City will focus on first prioritizing the urban watersheds where water quality facilities will be required. The City will also seek opportunities to construct new or retrofit existing facilities where available.

RC4 - Street Sweeping Program

BMP Description:	Maintain and monitor the current street sweeping program with the goal of cost-effectively improving water quality.
Strategy:	The City has successfully implemented and improved upon its street sweeping program during the course of the permit period. The City will continue the program while conducting regular reviews of its effectiveness and opportunities for improvement.

RC5 – De-icing Activities

BMP Objective:	Minimize impacts of de-icing activities on stream water quality from stormwater runoff.
Strategy:	A City Master Plan for reconstruction and reorganization of Operational Facilities has been adopted (March 2005), and will be used to ensure proper operation and maintenance activities related to the de-icing program. The City plans to continue the efficient use of sand and Anti-Icer for road and street de-icing activities with respect to application, collection and storage of sanding material, and will continue to seek opportunities to improve its operation through recycling and other storage and application practices. The City will also continue monitoring its facilities for discharges to the drainage system at its storage facilities.

RC6 – Waterways Protection Program

BMP Objective:	Develop a uniform and integrated program that works with existing regulations and the results of current and prior scientific studies to increase the level of protection on Salem's natural waterways.
Strategy:	The City will develop a waterway protection program, which will include continuing and expanding incentives to private land-owners (residents and businesses) to maintain, enhance, or restore riparian areas. The City has been offering grants to volunteer groups and riparian zone land owners for several years to promote restoration projects. The City will rely on urban waterway assessment projects to prioritize future waterway areas to be included in the program.

RC7 - Operations and Maintenance (O&M) Program

BMP Objective:	Sustain an adequate level of system operation and maintenance (O&M) to provide effective stormwater management service to City customers and protection of water quality in a cost-effective manner.
Strategy:	The City conducts numerous O&M functions and activities. The City will continue tracking its stormwater-related O&M activities by recording them and updating their databases. With the databases established and regularly being updated, the City will regularly review their activities to identify opportunities to assess and optimize effectiveness. The City will also work with the owners of privately-maintained stormwater facilities to ensure their proper function and maintenance. O&M practices will also be improved through a review and update of design standards.

RC8 - Alternative Gardening Products

BMP Objective:	Promote the use of non-polluting alternative gardening products by low volume users of pesticides, herbicides and fertilizers (e.g., household use) through educational programs.
Strategy:	The City's use of brochures focusing on pesticide/herbicide reduction through alternative products and other materials for distribution has been successfully implemented. The City will continue using distribution materials and working with other nonprofit and nongovernmental organizations to educate the public about alternative gardening products. The City will also continue using the Straub Environmental Learning Center (SELC) as a primary education "hub" to disseminate the information.

RC9 - Modify Land Use Development and Landscape Requirements

BMP Objective:	Decrease the amount of nutrients, pesticides and herbicides that enter streams, rivers and lakes through land use and landscape requirements.
Strategy:	The City has successfully implemented some land use and land development requirements to reduce nutrient, pesticide and herbicide loadings. The focus of the efforts has been on riparian areas, trees, and vegetation. The City plans to review additional land development approaches that address impervious areas, excavation and fill provisions, and other construction practices that may reduce nutrient, pesticide, and herbicide loadings. Furthermore, the City will evaluate how to most successfully implement the program: as standards, through incentives, or as rule (Salem Revised Code, SRC).

RC10 - Public Education and Participation Program

BMP Objective:	Sustain and enhance community stewardship through stormwater/watershed educational and outreach activities.
Strategy:	The principal objective of the Public Education and Participation Program continues to be to heighten the community's knowledge and awareness of stormwater quantity and quality issues, 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.

RC11 - Stormwater Management Program Financing

BMP Objective:	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.
Strategy:	The City's recent stormwater System Development Charge (SDC) methodology will continue to be reviewed and updated as needed to ensure that adequate funding is available to manage stormwater from new developments. The City is planning to evaluate the formation of a stormwater utility to allow for a sustainable funding source for capital projects, stormwater operations and maintenance, and program management.

RC13 - Update GIS System	
BMP Objective:	Maintain an up-to-date inventory and mapping of the stormwater drainage system and maintenance activities in an accessible database form to monitor level of service, effectiveness, and to support budgetary requests.
Strategy:	The City will continue updating the GIS and Hansen IMS database and use this information to monitor level of service, effectiveness, and to support budgetary requests.

RC16 - Resource Agency Coordination	
BMP Objective:	Improve coordination and communication of City departments and resource agencies regarding stormwater management activities and activities related to other regulatory programs and requirements including FEMA, COE/DSL, NEPA, TMDL and ESA.
Strategy:	<p>This BMP originally focused only on coordinating water quality improvement measures in areas subject to FEMA and/or COE/DSL Section 404 permits. The City has updated this BMP and has integrated the former BMP <i>CON3 –NEPA Coordination</i>. The City continues to experience increased responsibilities with respect to the Clean Water Act (CWA), Endangered Species Act (ESA), and National Environmental Policy Act (NEPA). This BMP now addresses coordination issues associated with these programs including TMDL, NPDES, ESA, and other water quality-related regulatory requirements with the City's MS4 permit requirements.</p> <p>The City has developed programs to address the various environmentally-related requirements under the Clean Water Act and Endangered Species Act. The City will continue to coordinate with resource agencies to review and identify potential water quality oriented measures. Using this information, the City will continue to use the Water Resources Program Manager position to coordinate the integration of the water quality-related requirements for the City's projects.</p>

RC17 - Stormwater Grant Program	
BMP Objective:	Maintain a grant program to assist property owners, businesses and industries in their specific efforts undertaken to clean up stormwater.
Strategy:	The City will continue to maintain the grant program, which was initially intended to create small matching grants for volunteer and educational organizations to create innovative watershed preservation (restoration and/or enhancement) projects, with the intention of expanding the program in relation to available funding. The City will continue to review and update its criteria for selecting projects to optimize the benefits of the program to overall water quality of its MS4 and receiving streams.

RC18 - Program Revisions for Easements	
BMP Objective:	Review and revise as appropriate existing policies, procedures, and easement/right-of way acquisition documents to facilitate the City's physical access to the storm drainage system.
Strategy:	The City will continue to identify facilities for which easements are needed to gain access for maintenance. The City will also review and update a plan, including a priority schedule, for the acquisition of easements.

RC21 - Inventory Private Stormwater Facilities	
BMP Objective:	Inventory private stormwater control facilities (primarily on-site detention facilities, but also water quality facilities) and evaluate their effectiveness to control water quantity and quality.
Strategy:	The City will continue to inventory the private detention facilities and water quality facilities, and update the GIS database. The City will continue conducting inspections of these facilities and provide owners with information on proper maintenance and their responsibilities.

RC23 - School Presentations and Education Outreach	
BMP Objective:	Utilize a variety of educational methods and materials to promote knowledge and understanding of Salem's water supply, stormwater system, water pollution concerns, wastewater system, and water conservation efforts through the elementary and secondary school system.
Strategy:	The City has successfully implemented and coordinated with schools to provide educational opportunities, support, and materials directly to students and for teachers to relate information on to their students. The City will continue to utilize existing educational resources and future opportunities as they develop.

ILLI - Spill Prevention and Response Program	
BMP Objective:	Continue the Spill Prevention and Response Program to reduce the frequency and volume of spills to the stormwater system.
Strategy:	The City's spill response program has been established and is considered effective in minimizing impacts to surface waters resulting from spills and clean-up activities. The City will continue this program and continue to review and improve the program. The City will also continue its City vehicle inspection and maintenance program to minimize leaks from these sources.

ILL2 – Illicit Discharge Elimination Program	
BMP Goal:	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.
Strategy:	The City will continue its existing illicit discharge elimination program, which involves monitoring, public and permitted facility inspections, and relying on observations/ complaints from staff and the public to identify illicit discharges. The City will continue its response by tracking reports of discharges and the action/response taken by the City. The City will continue to review and update its monitoring information to refine and prioritize locations for its monitoring and inspection program. Finally, the City will continue working with the Watershed Enhancement Team (WET) to provide assistance in reducing illicit discharges from businesses.

ILL4 - Illegal Dumping Control Program	
BMP Goal:	Facilitate efforts to report illegal dumping, illicit connections, and other such incidents, and foster efforts to clean up illegally dumped materials.
Strategy:	The City's illegal dumping program is focused on educational programs and public participation in the Adopt-a-Street and Adopt-a-Stream programs. The City will continue supporting cleanup efforts and providing a hotline for reporting illegal dumping.

ILL5 - 'No Dump' Educational Program	
BMP Objective:	<ul style="list-style-type: none"> ▪ Educate the public about the harmful effects of dumping waste and other potentially harmful chemicals into the storm sewers or drainage ditches /channels. ▪ Support programs that provide convenient means for people to properly dispose of or recycle garbage and other potentially harmful chemicals and waste materials.
Strategy:	The City's illegal dumping program has been effectively providing information and educational materials to the public on the harmful effects of dumping wastes into storm drains, and has also provided means to properly dispose of some wastes. The City will continue with these programs.

ILL6 - Storm Drain Stenciling and Marking Program	
BMP Objective:	Increase public awareness of the direct connection between storm drains and open water.
Strategy:	Continue the storm drain marking program until all storm drains are marked.

ILL7 - Review Enforcement Regulations	
BMP Objective:	Review the language and enforcement of existing regulations that give the City legal authority to prevent and eliminate the improper disposal and discharge of pollutants into storm sewers and drainage ditches/channels.
Strategy:	The City will continue to review and revise City codes and ordinances to address new regulatory requirements, specifically related to TMDL and ESA programs, and coordinate this with the stormwater program.

INDI - Industrial Stormwater Discharge Program	
BMP Objective:	Control the discharge of pollutants to the storm drainage system from existing and developing industries and municipal solid waste facilities
Strategy:	The City's industrial stormwater discharge program focuses on working with industries to ensure that permits are being followed by conducting inspections, providing input to businesses on how to comply and providing technical information to businesses. The City will also be active with organizations to stay current on recent educational and technical issues and approaches related to addressing industrial stormwater discharges.

CON1 – Construction Site Control Program	
BMP Objective:	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.
Strategy:	The City will continue to review and improve upon the stormwater construction site control requirements developed under SRC Chapter 75. The City will continue to train and educate its staff and private contractors, and will review and update its guidance handbook for construction site controls.

Monitoring Program

The City is required to conduct a review of their stormwater monitoring program (Schedule [B]). The City of Salem's stormwater-oriented water quality monitoring program consists of the following monitoring elements:

- Willamette River
- Urban streams
- BMP treatment efficiency monitoring
- Stormwater outfalls

The current SWMP (2002) proposed discontinuing the stormwater outfall component of the sampling program. However, the City did conduct outfall sampling during the fiscal year 2004 – 2005 reporting period. Besides these formal elements of the SWMP monitoring program, the City also conducts monitoring and sampling associated with the illicit discharge elimination program.

The City of Salem's NPDES MS4 Permit Schedule B monitoring requirements are summarized below (Schedule B[1][a]):

- Assess long-term progress of the SWMP towards achieving improvement in receiving water quality, including progress towards meeting pollutant load reduction benchmarks associated with TMDL parameters.
- Conduct MS4 discharge monitoring and in-stream monitoring (unless the City can show that alternative sources of data support the objectives).
- Evaluate the effectiveness of BMPs for specific source controls.
- Evaluate the sources of specific pollutants.
- Assess the chemical, biological, and physical effects of MS4 runoff on receiving waters.
- Characterize MS4 runoff discharges.
- Evaluate long-term trends in receiving water quality associated with stormwater discharges.

The City does not have to address the TMDL-related monitoring requirements, because the Willamette TMDL has not yet been adopted by the DEQ and approved by the EPA. However, based on the evaluation of the monitoring program and to better address the 303(d) listed pollutants, the following modifications are proposed:

- The monitoring program will focus on the 303(d) listed streams. Monitoring will be conducted at select outfall and urban stream locations upstream and downstream of the outfall to account for the contributions of select stormwater discharges to receiving stream water quality. Sampling from the outfalls and the urban stream locations will be coordinated.
- Parameters monitored at the priority outfalls and urban streams will focus on identified 303(d) listed parameters and other associated parameters. Flow will be monitored or estimated for select 303(d) listed urban streams during the sampling collection periods.
- Options for source monitoring for bacteria (possibly including bacteria source tracking) will be evaluated by the City. A final monitoring plan for bacteria will be based on the adopted TMDLs and the City's subsequent TMDL Implementation Plan.
- BMP effectiveness monitoring will include monitoring other representative stormwater proprietary devices (e.g., vortex-type units and the Stormceptor unit). Opportunities to retrofit these facilities will be explored to facilitate influent and effluent monitoring. The Kroger Park bioswale project will continue to be monitored.

- As a result of the increased monitoring associated with the 303(d) listed streams and specific structural (proprietary) BMPs, the City may reduce the number of monitoring stations on the Willamette River. Generally, minimal differences exist in water quality among the mainstem Willamette River stations. The priority stations that will remain are those directly downstream of 303(d) listed streams and those just upstream and downstream of the City's jurisdictional boundaries to understand the effects of the City's activities on surface water quality. The City will not include the Willow Lake WPCF monitoring locations under its MS4 permit monitoring program.
- The City will conduct a detailed review of the water quality data collected under this modified program and include the results of that review in future annual reports. Existing data will be further reviewed as part of the watershed planning program, starting with the Pringle Creek watershed pilot project.

Other monitoring activities associated with the illicit discharge elimination program (ILL2), operations and maintenance program (RC7), and construction site monitoring and inspections (CON1) will continue to be implemented.