City of Portland, Oregon

National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Discharge Permit

Permit Number: 101314

ANNUAL COMPLIANCE REPORT NO. NINE

Fiscal Year 2003-2004
(July 1, 2003 – June 30, 2004)

Prepared for:

Oregon Department of Environmental Quality

October 29, 2004

Submitted by:

City of Portland
Multnomah County
Port of Portland
October 29, 2004

Rob Burkhart
Portland MS4 Permit Manager
Oregon Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue, Suite 400
Portland, OR 97201-4987

Dear Mr. Burkhart:

On behalf of the City of Portland and its co-permittees, I am pleased to submit the enclosed NPDES Annual Compliance Report No. Nine. This report fulfills reporting requirements for the Portland NPDES Municipal Separate Storm Sewer System (MS4) Discharge Permit. Accomplishments for the ninth fiscal year of the permit program (July 1, 2003 through June 30, 2004) are included in the report.

The report demonstrates the co-permittees' progress toward meeting the permit requirements and stormwater program goals for the past year. Each co-permittee's section of the report details the activities implemented, program status, and any initiated or proposed program changes. An overview of each co-permittee's section is provided in the Executive Summary.

A Monitoring Compliance Report, which summarizes monitoring activities conducted by Portland in the past year, is included at the end of Section II of the report. The raw monitoring data are available upon request on CD-ROM.

Please call me at 503 823-5275 if you have any questions concerning this report.

Sincerely,

Patrice Mango
Portland Stormwater Program Manager

cc: Dorothy Sperry, Port of Portland
    Kim Peoples, Multnomah County
    Dave Kliewer, Environmental Services

Enclosure
City of Portland
National Pollutant Discharge Elimination System
Municipal Separate Storm Sewer System Discharge Permit
Permit Number: 101314

ANNUAL COMPLIANCE REPORT
Fiscal Year 2003-04
(July 1, 2003 - June 30, 2004)

We, the undersigned, hereby submit this annual compliance report for the Municipal Separate Storm Water System Discharge Permit No. 101314, in accordance with Schedule B, Section 7 (System-Wide Report) of that permit. We certify, as required by 40 CFR Section 122.22, under penalty of law, that this document was prepared under our direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Dean Marriott
Director, Bureau of Environmental Services
City of Portland

Cecilia Johnson
Director, Department of Business and Community Services
Multnomah County

Bill Wyatt
Executive Director
Port of Portland
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II. CITY OF PORTLAND

III. MULTNOMAH COUNTY

IV. PORT OF PORTLAND

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   City of Portland NPDES Stormwater Permit
Co-Permittee: City of Portland
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Co-Permittee: Multnomah County
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Co-Permittee: Port of Portland
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EXECUTIVE SUMMARY
EXECUTIVE SUMMARY

INTRODUCTION
This ninth Annual Compliance Report is submitted to the Oregon Department of Environmental Quality (DEQ) to fulfill reporting requirements for the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System Discharge Permit (hereinafter referred to as the stormwater permit or permit) issued to the City of Portland, Multnomah County, and Port of Portland (the co-permittees). It covers the work accomplished during the ninth fiscal year (July 1, 2003 through June 30, 2004) of the permit program.

In managing and implementing the permit program, the co-permittees work in a cooperative effort with DEQ, Metro, the Oregon Association of Clean Water Agencies (ACWA), other agencies, and the public.

PERMIT RENEWAL
DEQ issued the five-year stormwater permit on September 7, 1995. In February 2000, the co-permittees submitted a permit renewal package to DEQ for a second five-year permit term. The best management practices (BMPs) were improved, adapted, or reorganized as needed to achieve a program that collectively reduces pollutants discharged from the MS4 system in Portland to the maximum extent practicable. Pending DEQ’s formal approval of the renewal, the co-permittees began implementing the revised BMPs described in the permit renewal during permit year six, and continued during permit years seven, eight, and nine.

DEQ issued the second-term permit to the co-permittees on March 8, 2004. The five-year permit expires on February 28, 2009. In permit year nine, the co-permittees worked closely with each other, DEQ, ACWA, and other statewide Phase I permittees during development of the second-term permit. After the permit was issued, they also began working on tasks that will enable them to fulfill the new permit conditions and requirements.

BMP CATEGORIES
As described in the permit renewal, the co-permittees’ BMPs are organized under the eight general categories shown below. These common categories serve as an overall framework and promote consistency and coordination among the co-permittees. Each co-permittee then identifies its own specific BMPs under each of the common categories.

- PI: Public Involvement/Education
- OM: Operations and Maintenance
- IND: Industrial/Commercial Controls
- ILL: Illicit Discharges Controls
- ND: New Development Standards
- STR: Structural Controls
- PS: Planning/System Preservation and Development
- OA: Other Activities
The Annual Compliance Report includes individual reports prepared by each co-permittee. Each report describes the activities implemented and any initiated or proposed program changes. An overview of each co-permittee’s report is provided below.

CITY OF PORTLAND
During permit year nine, the City of Portland continued to implement the BMP activities identified in the permit renewal package. To ensure consistency with City policies and programs that promote resource conservation and environmental protection, the City continues to coordinate Stormwater Program activities with other City actions and programs, such as the Sustainable Portland Commission and Office of Sustainable Development, CSO Program, Willamette River Pre-design Project, watershed programs, and Endangered Species Act Program. Key activities and accomplishments for permit year nine are summarized below.

- Continued public involvement/education activities as a significant element of the Stormwater Program. Key activities included the Naturescaping for Clean Rivers program; stormwater education activities; stewardship grant projects; ongoing participation in the Regional Coalition for Clean Rivers and Streams; and educational publications and materials.

- NOAA Fisheries approved PDOT’s application for a Limit 10 under the Endangered Species Act (ESA) section 4(d) rule for its routine roadside maintenance activities. PDOT has committed to follow, with modifications, the best management practices outlined in ODOT’s Routine Road Maintenance Water Quality and Habitat Guide Best Management Practices, as guidance for PDOT’s transportation-related maintenance activities.

- Revised the Stormwater Management Manual for October 2004 implementation, including a six-month public comment period.

- Worked with the Stormwater Advisory Committee to develop stormwater management policy recommendations for transportation-related development. The SAC submitted its recommendations to City Council in June 2004.

- Continued to implement the SAC’s June 2002 report recommendations for new development, redevelopment, and existing development.

- The Parks Bureau received Salmon Safe certification for O&M practices.

- The City of Portland adopted the Columbia South Shore Well Field Wellhead Protection Program, including: 1) an expanded program boundary, 2) new groundwater protection and stormwater management BMPs, and 3) a new facility inspection program for commercial and industrial facilities within the expanded boundary.
• Continued sampling the 19 non-stormwater discharges identified in the NPDES permit to determine their impact on the MS4. In permit year nine, completed monitoring work on four of the 19 activities listed in the permit; as of permit year nine, 17 of the 19 sampling categories have been completed.

• Drafted a list of revisions to Title 10 (erosion control), focusing on regulations for larger sites with steep slopes and on sensitive areas and reducing plan review and inspection requirements for small, flat sites. Drafted a proposal for quickly correcting minor erosion control violations in environmental zones.

• Implemented a stormwater management facility (SMF) inspection program for private stormwater management facilities.

• Continued to provide in-kind services in coordination with the Multnomah County Drainage District (MCDD) and the U.S. Army Corps of Engineers to implement Section 1135 Program projects in the Columbia Slough.

• Began design and implementation of 29 projects funded by a $1.6 million EPA grant for innovative stormwater projects.

• Continued design or review of several pilot projects using Water Quality Friendly Streets design standards.

• Continued to provide technical assistance and grant funding for projects that incorporate green building principles, including stormwater pollution prevention and management.

• Updated the City’s natural resource inventories and existing environmental zoning code to help protect the important functions provided by the City’s streams and riparian areas, wetlands, and other specified water bodies. This work is intended to contribute toward the City’s compliance with the Endangered Species Act and Clean Water Act, as well as with Oregon land use planning goals 5, 6, 7, and Title 3 of Metro’s Urban Growth Management Functional Plan.

• Developed the River Renaissance Strategy, which establishes guiding principles and policy direction to achieve the City’s River Renaissance Vision adopted in March 2001. One key element is direction on how to achieve Portland’s goals for a clean and healthy Willamette River and healthy tributary watersheds.

• Made progress in updating the City’s environmental code. Working with community stakeholders, the City developed code amendment proposals aimed at improving enforcement of environmental violations and making it easier to obtain permits to undertake resource enhancement projects. The Environmental Code Improvement Project is also addressing trails, stormwater outfalls, and landslide repair.
• Drafted new guidance and regulatory documents for tree and landscaping requirements associated with screening and aesthetic landscaping needs.

• Continued to develop administrative rules for stormwater enforcement for discharges going into the storm drainage system.

• Purchased 3.03 acres of property within the Johnson Creek floodplain. Created conservation easements with property owners to preserve approximately 3.23 acres in environmental zones along Johnson Creek. Purchased 53.62 acres in Marquam Hill. This property is located in one of highest-value natural areas in the southwest portion of the Willamette Watershed.

• Under watershed programs, revegetated streamside and upland areas with approximately 87,000 plants.

MULTNOMAH COUNTY
Multnomah County continued implementation of its comprehensive stormwater management program countywide in permit year nine. Although County activities within the permit area are limited, the stormwater program is implemented throughout the County, including areas outside the permit area, consistent with County environmental and resource conservation policies.

Section III of the annual report contains descriptions of the County’s stormwater management efforts, focusing primarily on activities within the permit area. Brief summaries below highlight key accomplishments.

• **Public Education and Outreach:** The County continued several programs intended to inform and involve urban and rural citizens in environmental stewardship efforts. The Transportation Road Maintenance Section continued with the Adopt-a-Road program, which involves local families and businesses in litter pick-up along roadways and associated ditches. Also, catch basin markers were designed and purchased and are soon to be applied.

• **Capital Maintenance Projects:** The Transportation Bridge Section continued implementing its policy to retrofit bridge structures with water quality treatment facilities, where appropriate, during major bridge renovation projects.

• **Employee Training:** The County continued to provide training and regulatory updates to employees on topics related to water quality. During permit year nine, staff received training on erosion control, spill response, and vegetation, as well as stormwater best management practices.

• **Compliance Program:** The County land use code enforcement program, which applies to unincorporated Multnomah County outside the permit area, was revised to provide for more efficient process and add new staff. The grading and erosion...
control standards were also revised for rural portions of the County, providing a more streamlined and objective tiered approach for review of ground-disturbing activities.

**PORT OF PORTLAND**
The Port of Portland (Port) continued its comprehensive stormwater management program during permit year nine. The stormwater program continues to evolve and improve over time through an adaptive management process. The Port’s stormwater efforts are guided by the Municipal Stormwater Management Plan (MSWMP), operating area stormwater plans, and Port environmental policies.

Section IV of this annual report contains detailed descriptions of the Port’s stormwater management efforts during permit year nine. Brief summaries are presented below to highlight key accomplishments.

**Compliance with multiple stormwater permits:** The Port continues to operate and manage its stormwater program and facilities effectively in accordance with multiple permits. These permits include the Municipal Permit, the 1200-COLS and the 1200-Z general permits, the 1200-CA permit for construction activities, a construction dewatering permit, a 1700-B WPCF wastewater permit, and an anti-icing/deicing permit for the Portland International Airport (PDX).

**Public education and outreach:** The Port continued to implement and support a variety of public outreach programs and events focused on increasing public awareness of water quality issues, coordinating many of its efforts with other organizations, including the Columbia Slough Watershed Council (CSWC), the Audubon Society, the City of Portland’s Bureau of Environmental Services (BES), and Portland State University (PSU).

The Port continued to host quarterly environmental forums to provide representatives of regulatory agencies, tribes, environmental organizations, and elected officials’ staff with an opportunity to learn about environmental aspects of the Port’s business and provide feedback. The Port’s *Environmental Annual Report* documented progress made by the Port on its Environmental Objectives and Targets for the 2003-2004 fiscal year, and outlined goals for 2004-2005. The publication of the *Port Currents* and *Portside* newsletters further provided the public with information on Port activities and environmental aspects of Port operations.

The Port continued its public outreach campaign to prevent stormwater pollution at storm drains through the use of curb/pavement markers and informational posters. The Port also provided presentations on the new de-icing system at PDX to several outside groups, and conducted educational tours of its mitigation sites and riverbank areas.

**Employee/Tenant Training and Education:** The Port continued to be committed to keeping its employees and tenants well-informed of stormwater pollution control efforts. The Port regularly updates staff and tenants on a broad array of environmental topics through staff meetings, email distributions, training sessions, and presentations. Topics
covered during the 2003-2004 permit year included stormwater-related best management practices (BMPs), required environmental practices for construction, Hazardous Waste Operations and Emergency Response (HAZWOPER) refresher training, and Environmental Management System (EMS) general awareness training. The Port increased employee environmental awareness during the 2003-2004 permit year by creating a mobile information booth to provide employees with information on the Port’s environmental programs and practices. The Port also continued to maintain and make available to employees and tenants copies of stormwater-related documents such as management plans, program descriptions, policies, and procedures.

Port staff also attended a number of professional conferences and seminars during the 2003-2004 permit year, including the Oregon Association of Clean Water Agencies (ORACWA) Annual Conference and Stormwater Summit, the Environmental Law Education Center (ELEC) Clean Water Conference, the American Association of Airport Executives (AAAE) Deicing and Stormwater Conference, the Northwest Environmental Conference and Tradeshow, and City of Portland Stormwater Management Manual training.

**Stormwater Infrastructure Improvements:** The Port initiated operation of a new deicing system at PDX in fall 2003. The system is designed to reduce glycol discharges and associated water quality impacts to the Columbia Slough. The Port monitored and evaluated the effectiveness of the system throughout the deicing season, and developed operating protocols and quality assurance/quality control measures to supplement the system’s operations and maintenance manual.

The Port completed stormwater system improvements associated with the Toyota Redevelopment Project at Marine Terminal 4. The two-stage stormwater management system installed for this project mechanically removes oils and solids from the stormwater, and bioswales naturally filter the stormwater before it is released into the Willamette River. Also beneficial to stormwater quality, the project involved the restoration of 1,700 linear feet of riverbank to native conditions, including the planting of more than 11,000 native shrubs and trees.

The Port completed its pilot project to install 100 percent biodegradable, wool stormwater catch basin inserts at its industrial properties. Port staff monitored the performance of these inserts and worked with the manufacturer to improve upon their design.

**Landscaping:** Port landscape maintenance staff continued to employ a program of integrated pest management (IPM), which provides the framework for all pesticide and fertilizer applications. The IPM program establishes a threshold of acceptable appearance, damage, infection, etc. for landscaped areas. Once that threshold has been crossed, corrective measures are taken using the least toxic, most effective methods/materials available.
The Port continued to implement various plans and BMPs to minimize the use of pesticides, fertilizers, and irrigation water in the course of its maintenance activities. The Port also continued to coordinate with state and local agencies on current vegetation management techniques, regulations, and environmental concerns.

The Port developed a Technical Guidance Document for Pesticides, which provides reference information to Port staff who use or manage the use of pesticides on Port property. This document includes information about pesticide active ingredients, chemical composition, and behavior in the environment, and provides references to where additional information about pesticides may be found.

**Resource Allocation:** The Port designated considerable resources to stormwater management during the 2003-2004 fiscal year. Estimated Port stormwater expenditures for 2003-2004 exceeded $1.8 million and included staff salary, contractor and consultant fees, stormwater infrastructure, training, and outreach materials. The Port’s Environmental Affairs Department created a new Environmental Specialist position to assist the Water Resources Program Manager in implementing the municipal stormwater program and other water-related programs.
Section I

GENERAL INTRODUCTION
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GENERAL INTRODUCTION

This ninth Annual Compliance Report is submitted to the Oregon Department of Environmental Quality (DEQ) to fulfill reporting requirements for the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System Discharge Permit (hereinafter referred to as the stormwater permit or permit) issued to the City of Portland, Multnomah County, and Port of Portland (the co-permitees). It covers the work accomplished during the ninth fiscal year (July 1, 2003 through June 30, 2004) of the permit program.

The map on page 3 shows the NPDES stormwater permit areas for the three co-permitees, as described below:

- Approximately 55,000 acres within the City of Portland’s urban services boundary do not drain to a combined sewer system. Of this area, approximately 42,000 acres drain to a separate storm sewer system. The remaining 13,000 acres drain to stormwater sumps, and are not included under this permit.

- The Port owns approximately 6,500 acres within the City of Portland’s urban services boundary. This acreage includes three operating areas: 1) Portland International Airport, 2) four marine terminals, and 3) several industrial parks occupied by commercial tenants.

- Since the issuance of the Portland area NPDES Permit (No101314) in 1995, Multnomah County’s jurisdiction and level of activity have been greatly reduced. Most significantly, the County no longer has land use planning authority within the few remaining unincorporated urban pockets within the permit area. Additionally, the City of Portland now has operation and maintenance responsibilities of all 18.76 miles of County dedicated roads and drainages within the permit area through an intergovernmental agreement.

Multnomah County’s primary activity within the permit area continues to be the operation and maintenance of five Willamette River bridges. The County Transportation Division also continues to retain authority to review stormwater management plans, granting a handful of permits every year to access County road ditches for limited stormwater discharge within the unincorporated pockets. Staff reviews plans that detail the stormwater runoff effects of development and redevelopment. Discharge from the undeveloped parcel is calculated, and only that volume is permitted for access to County road drainages, which are now operated and maintained by the City of Portland.
PERMIT BACKGROUND
The stormwater permit application process started in 1990. In compliance with the NPDES timeline for stormwater permitting, the co-applicants submitted Parts 1 and 2 of the application to DEQ in November 1991 and May 1993, respectively. In accordance with Section 402(p) of the Clean Water Act, DEQ issued the five-year permit on September 7, 1995.

The Oregon Department of Transportation (ODOT) was originally a co-permittee. In permit year four, ODOT began the process of obtaining a statewide NPDES stormwater permit. In 2000, a statewide NPDES permit was issued, and ODOT was removed as a Portland co-permittee.

Multnomah County Drainage District No. 1, Peninsula Drainage District No. 1, and Peninsula Drainage District No. 2 also were originally co-permittees. In permit year five, the drainage districts examined their role under the permit and determined they could fulfill this role effectively through memoranda of agreements (MOAs) among all the parties (City of Portland, DEQ, and Port of Portland). They proposed to DEQ that they take that approach, rather than continue as a co-permittee. DEQ has formally accepted the MOA concept, and as of July 2003 the districts are no longer co-permittees.

PERMIT RENEWAL
In February 2000, the City of Portland, Multnomah County, and Port of Portland submitted to DEQ a permit renewal package for a second five-year permit term. In accordance with EPA policy guidance, the co-permittees used a streamlined “adaptive management” approach. The best management practices (BMPs) were improved, adapted, or reorganized as needed to achieve a program that collectively reduces pollutants discharged from the MS4 system in Portland to the maximum extent practicable. While many of the first-term BMPs focused on planning and development, the second-term program placed a greater emphasis on implementation activities. Because the stormwater monitoring program was modified during the first permit term, no further modifications were included for the second permit term.

The co-permittees began to implement the revised BMPs, as described in the permit renewal package, in permit year six. Implementation of these BMPs continued in permit years seven, eight, and nine.

DEQ issued the second-term permit to the co-permittees (City of Portland, Multnomah County, and Port of Portland) on March 8, 2004. The five-year permit expires on February 28, 2009. In permit year nine, the co-permittees worked closely with each other, DEQ, the Oregon Association of Clean Water Agencies (ACWA), and other statewide Phase I permittees during development of the second-term permit. After the permit was issued, they also began working on tasks that will enable them to fulfill the new permit conditions and requirements.
BMP CATEGORIES
In the permit renewal package submitted in February 2000, the City of Portland, Multnomah County, and Port of Portland organized their BMPs under eight general categories, as shown below. These common categories serve as an overall framework and promote consistency and coordination among the co-permittees. Each co-permittee then identifies its own specific BMPs under each of the common categories.
- PI: Public Involvement/Education
- OM: Operations and Maintenance
- IND: Industrial/Commercial Controls
- ILL: Illicit Discharges Controls
- ND: New Development Standards
- STR: Structural Controls
- PS: Planning/System Preservation and Development
- OA: Other Activities

COMPARISON OF BMPS WITH NPDES REGULATORY REQUIREMENTS
The following table shows how the co-permittees’ BMPs address the various NPDES regulatory requirements.

<table>
<thead>
<tr>
<th>NPDES REGULATION [40 CFR 122.26 (d)(2)]</th>
<th>City BMPs</th>
<th>Port BMPs</th>
<th>County BMPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>(iv) Proposed Management Program.</td>
<td>All City BMPs</td>
<td>All Port BMPs</td>
<td>All applicable County BMPs</td>
</tr>
<tr>
<td>...It shall include a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and systems, design and engineering methods, and such other provisions which are appropriate...</td>
<td>OM3 OM4 STR1 STR2 PS3</td>
<td>OM1 OM2 OM3 ND1 STR1</td>
<td>OM1 OM2* OM4* OM6* STR1 STR2 STR4* ILL4</td>
</tr>
<tr>
<td>...Such programs shall be based on:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(A) A description of structural and source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the municipal separate storm system (MS4s) that are to be implemented during the life of the permit,...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>...the description shall include:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(A)(1) A description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from MS4s;</td>
<td>OM1 OM2 PS1</td>
<td>OM1</td>
<td>OM1 OM2* OM3 OM4* OM5 OM6* OM7* OM8* OA3</td>
</tr>
</tbody>
</table>
(A)(2) A description of planning procedures including a comprehensive master plan to develop, implement and enforce controls to reduce the discharge of pollutants from MS4s which receive discharges from areas of new development and significant redevelopment. Such plans shall address controls to reduce pollutant discharges from MS4s after construction is complete...

(A)(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 MS4s, including pollutants discharged as a result of deicing activities;

(A)(4) A description of procedures to assure that flood management projects assess the impacts on 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 stormwater is feasible;

(A)(5) A description of a program to monitor pollutants in runoff from operating or closed landfills or other treatment, storage or disposal facilities for municipal waste, which shall identify priorities and procedures for inspections and establishing and implementing controls measures for such discharges;

(A)(6) A description of a program to reduce to the maximum extent practicable, pollutants in discharges from the MS4s associated with the application of pesticides, herbicides, and fertilizers which will include, as appropriate, controls such as educational activities, permits, certifications and other measures for commercial applicators and distributors, and controls for application in the public rights-of-way and municipal facilities.

(B) A description of a program, including a schedule, to detect and remove (or require the discharger to the MS4s to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm system.

(B)(1) A description of a program, including inspections, to implement and enforce an ordinance, order or similar means to prevent illicit discharges to the MS4s; this program description shall address all types of illicit discharges, including those flows shall be addressed where such discharges are identified by the municipality as sources of pollutants to the waters of the U.S.;;

(B)(2) A description of procedures to conduct ongoing field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens;
| (B)(3) | A description of procedures to be followed to investigate portions of the MS4s 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-stormwater (such procedures may include: sampling...such as fecal...Such description shall include the location of storm sewers that have been identified for such evaluation); | ILL2 | OA3 | ILL1 | ILL5 | ILL6 | OM1 | OM3 | OM6* | STR5* |
| (B)(4) | A description of procedures to prevent, contain, and respond to spills that may discharge into the MS4s; | ILL1 | PI2 | ILL1 | ILL2 | ILL1 | ILL6 |
| (B)(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 MS4s; | PI1 | PI1 | PI2 | ILL1 | ILL3 | ILL4 | PI1 | PI8 | ILL1 | ILL2* | ILL3 | ILL5 | ILL6 |
| (B)(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; | PI1 | PI1 | PI2 | ILL2 | PI1 | PI3 | PI5* | PI6* | PI8 |
| (B)(7) | A description of controls to limit infiltration of seepage from municipal sanitary sewers to MS4s where necessary; | OM1 | N/A | OM1* | ILL5* |
| (C) | A description of a program to monitor and control pollutants in stormwater discharges to MS4s from municipal landfills, hazardous waste treatment, disposal, and recovery facilities, industrial facilities that are subject to section 313 of Title III of the Superfund Amendments...and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the MS4s. The program shall: | IND1 | IND1 | N/A |
| (C)(1) | Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges; | IND1 | IND1 | N/A |
| (C)(2) | Describe a monitoring program for stormwater discharges associated with the industrial facilities identified in paragraph (C)...to be implemented during the term of the permit... | IND1 | OA1 | OA2 | OA3 | N/A |
| (D) | A description of a program to implement and maintain structural and nonstructural best management practices to reduce pollutants in stormwater runoff from construction sites to the MS4s, which shall include: | ND1 | PI2 | ND1 | STR1 | ND2** | ND3** | STR3 | ILL7 | ILL8 |
| (D)(1) | A description of procedures for site planning which incorporate consideration of potential water quality impacts; | ND1 | ND1 | ND2** | ND3** | ILL4 | STR1 | STR6* | PS3* |
(D)(2) A description of requirements for nonstructural and structural best management practices;  

| (ND1) | (ND1) STR1 | ILL4 ILL7 ILL8 ND2** ND3** STR3* STR4* |

(D)(3) A description of procedures for identifying priorities for inspecting sites and enforcing control measures which consider the nature of the construction activity, topography, and the characteristics of soils and receiving water quality;  

| (ND1) | (ND1) STR3* | ILL7 ILL8 |

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

| (ND1) | PI2 ND1 | ILL3 ILL7 ILL8 PI4 |

* It is anticipated that these BMPs will be revised in the updated Stormwater Management Plan to reflect diminished activity for the County, in accordance with the City of Portland/Multnomah County Westside Road Maintenance Agreement.

** It is anticipated that these BMPs will be revised in the updated Stormwater Management Plan to reflect diminished activity for the County, in compliance with Metro’s Urban Growth Management Functional Plan.

PROGRAM COORDINATION
The management and implementation of the permit program is a cooperative effort among the City of Portland’s Bureau of Environmental Services (BES), other City bureaus, the co-permittees, DEQ, Metro, ACWA, other agencies, and the public.

Co-Permittee Coordination
The City of Portland (as lead co-permittee) and the other co-permittees actively participated in the three-year planning process (1990-1993) to develop the NPDES permit application, which became the basis for the permit conditions and individual Stormwater Management Plans. After submitting Part II of the application to DEQ in May 1993, the co-permittees began meeting monthly (or more often as needed) to share information about program implementation and coordination, BMP effectiveness, monitoring, and other issues related to the permit. The co-permittees discussed and coordinated the permit renewal process at a number of their monthly meetings prior to submitting the permit renewal to DEQ in February 2000, and again during development of the final permit issued in March 2004.

These regular meetings have helped the co-permittees implement their stormwater management programs and coordinate projects and public outreach endeavors, such as the City’s Industrial Discharge and Illicit Elimination BMP efforts and the Regional Coalition for Clean Rivers and Streams.

Coordination with Others
The co-permittees coordinated closely with other local agencies to develop the NPDES permit application and individual Stormwater Management Plans, and continue to rely on regional cooperative efforts to successfully fulfill some of the permit requirements. The
co-permittees work closely with the regional government, Metro, to support programs that have a positive water quality benefit. Examples include the household hazardous waste disposal program, the GreenStreets program, and Title 3 of Metro’s Urban Growth Management Functional Plan.

Representatives from the City, Port of Portland, and Multnomah County actively participate in ACWA programs and committees to coordinate and address stormwater permit implementation issues with other jurisdictions in the state.

REPORT PREPARATION AND ORGANIZATION
BES stormwater management staff coordinated the preparation of this Annual Compliance Report on behalf of the City and its co-permittees. In addition to the co-permittees, all affected City bureaus participated in the report preparation, most notably BES, Water, Transportation, Maintenance, Parks, Office of Planning and Development Review, Planning, and Fire. Programmatic information provided by City bureaus is integrated into a single City of Portland report (Section II). Multnomah County’s report (Section III) and the Port of Portland’s report (Section IV) are compiled with the City’s report for a single package submittal to DEQ.

This ninth annual report covers the period from July 1, 2003 through June 30, 2004. It includes implementation actions and accomplishments that occurred during that period alone (i.e., it is not cumulative).

The report is organized as follows:

- **Executive Summary**--A summary of significant program activities and program status for all of the co-permittees.

- **Section I: General Introduction**--An overview of the overall permit background and regulatory information, BMP categories, program coordination, and report organization, relevant to all of the co-permittees.

- **Sections II, III, and IV**--The individual compliance reports of the co-permittees (City of Portland, Multnomah County, and Port of Portland, respectively), describing implementation actions taken, program status, and any initiated or proposed program changes.

- **Appendix: City of Portland NPDES Stormwater Permit**

The report’s goal is to convey clear, succinct program information that complies with the annual reporting requirements of the NPDES permit. The report will also provide other interested parties with a Stormwater Program status overview. Detailed supporting information, such as inspection reports, logs, and individual correspondence, are archived at each permitted agency and are available to DEQ upon request.
Section II

CITY OF PORTLAND
## Section II
### CITY OF PORTLAND

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KEY ACCOMPLISHMENTS

- Continued public involvement/education activities as a significant element of the Stormwater Program. Key activities included the Naturescaping for Clean Rivers program; stormwater education activities; stewardship grant projects; ongoing participation in the Regional Coalition for Clean Rivers and Streams; and educational publications and materials.

- NOAA Fisheries approved PDOT’s application for a Limit 10 under the Endangered Species Act (ESA) section 4(d) rule for its routine roadside maintenance activities. PDOT has committed to follow, with modifications, the best management practices outlined in ODOT’s Routine Road Maintenance Water Quality and Habitat Guide Best Management Practices, as guidance for PDOT’s transportation-related maintenance activities.

- Revised the Stormwater Management Manual for October 2004 implementation, including a six-month public comment period.

- Worked with the Stormwater Advisory Committee to develop stormwater management policy recommendations for transportation-related development. The SAC submitted its recommendations to City Council in June 2004.

- Continued to implement the SAC’s June 2002 report recommendations for new development, redevelopment, and existing development.

- The Parks Bureau received Salmon Safe certification for O&M practices.
• The City of Portland adopted the Columbia South Shore Well Field Wellhead Protection Program, including: 1) an expanded program boundary, 2) new groundwater protection and stormwater management BMPs, and 3) a new facility inspection program for commercial and industrial facilities within the expanded boundary.

• Continued sampling the 19 non-stormwater discharges identified in the NPDES permit to determine their impact on the MS4. In permit year nine, completed monitoring work on four of the 19 activities listed in the permit; as of permit year nine, 17 of the 19 sampling categories have been completed.

• Drafted a list of revisions to Title 10 (erosion control), focusing on regulations for larger sites with steep slopes and on sensitive areas and reducing plan review and inspection requirements for small, flat sites. Drafted a proposal for quickly correcting minor erosion control violations in environmental zones.

• Implemented a stormwater management facility (SMF) inspection program for private stormwater management facilities.

• Continued to provide in-kind services in coordination with the Multnomah County Drainage District (MCDD) and the U.S. Army Corps of Engineers to implement Section 1135 Program projects in the Columbia Slough.

• Began design and implementation of 29 projects funded by a $1.6 million EPA grant for innovative stormwater projects.

• Continued design or review of several pilot projects using Water Quality Friendly Streets design standards.

• Continued to provide technical assistance and grant funding for projects that incorporate green building principles, including stormwater pollution prevention and management.

• Updated the City’s natural resource inventories and existing environmental zoning code to help protect the important functions provided by the City’s streams and riparian areas, wetlands, and other specified water bodies. This work is intended to contribute toward the City’s compliance with the Endangered Species Act and Clean Water Act, as well as with Oregon land use planning goals 5, 6, 7, and Title 3 of Metro’s Urban Growth Management Functional Plan.

• Developed the River Renaissance Strategy, which establishes guiding principles and policy direction to achieve the City’s River Renaissance Vision adopted in March 2001. One key element is direction on how to achieve Portland’s goals for a clean and healthy Willamette River and healthy tributary watersheds.
• Made progress in updating the City’s environmental code. Working with community stakeholders, the City developed code amendment proposals aimed at improving enforcement of environmental violations and making it easier to obtain permits to undertake resource enhancement projects. The Environmental Code Improvement Project is also addressing trails, stormwater outfalls, and landslide repair.

• Drafted new guidance and regulatory documents for tree and landscaping requirements associated with screening and aesthetic landscaping needs.

• Continued to develop administrative rules for stormwater enforcement for discharges going into the storm drainage system.

• Purchased 3.03 acres of property within the Johnson Creek floodplain. Created conservation easements with property owners to preserve approximately 3.23 acres in environmental zones along Johnson Creek. Purchased 53.62 acres in Marquam Hill. This property is located in one of highest-value natural areas in the southwest portion of the Willamette Watershed.

• Under watershed programs, revegetated streamside and upland areas with approximately 87,000 plants.

PROPOSED CHANGES TO STORMWATER MANAGEMENT PLAN COMPONENTS
In permit year nine, the City of Portland began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). The Bureau of Environmental Services (BES) is working with multi-bureau focus groups to review the City’s existing BMPs and identify any needed changes through adaptive management. The revised SWMP will be submitted in the second annual report that follows permit issuance. Proposed SWMP changes anticipated to date are identified in the individual activity reports for each BMP, below.

PROGRAM ORGANIZATION AND COORDINATION

Program Authorization
The Portland City Council passed a resolution supporting the final National Pollutant Discharge Elimination System (NPDES) stormwater permit application in June 1995. In that resolution, the Council designated the Bureau of Environmental Services (BES) as the lead for the City's implementation of the Stormwater Program. In accordance with Section 402(p) of the Clean Water Act, the Oregon Department of Environmental Quality (DEQ) issued the first-term permit on September 7, 1995. In February 2000, the City and its co-permittees submitted the permit renewal application to DEQ for a second permit cycle. The City began implementing elements of the proposed renewal in permit year six and continued in permit years seven, eight, and nine. DEQ issued a renewed permit to the co-permittees on March 8, 2004.
Legal Authority
The City of Portland continues to maintain legal authority to implement the programs outlined in the Storm Water Management Plan (SWMP) as initially demonstrated in Part 1 of the original NPDES Municipal Storm Water Permit Application (No(s). 101315 & 101314).

Organization/Coordination within the City
BES's Stormwater Program Manager is responsible for overall project management, compliance reporting, policy development, and coordination within the City of Portland. All BES project planning is centralized within the Planning Group and organized by watershed to enhance project coordination.

Stormwater Program activities within the City are coordinated through BMP-specific teams that include representatives from appropriate bureaus. In addition, Stormwater Program activities are coordinated with the City’s Sustainable Portland Commission and Office of Sustainable Development. The Mayor appointed the commission to evaluate the City’s internal environmental management practices and ensure consistency with policies and programs that promote resource conservation and environmental protection.

URBAN GROWTH BOUNDARY EXPANSION AREAS
There was no expansion of the urban growth boundary within the City of Portland in permit year nine, and none is projected for permit year ten.

RELATIONSHIP TO OTHER WATER QUALITY PROGRAMS
Although not all of the following activities are specifically required as part of the NPDES permit, they are closely associated with the Stormwater Program and related to stormwater quality. BES works cooperatively with many other City bureaus on water quality issues. During permit year nine, the City continued to implement River Renaissance, a citywide, multi-objective initiative that integrates multiple programs and projects aimed at protecting and restoring the Willamette River and its tributaries.

Combined Sewer Overflow Reduction
The City is constructing the third of four major phases for controlling combined sewer overflows (CSOs) to the Willamette River and Columbia Slough. The activities include a combination of stormwater inflow reductions (roof drain disconnections, sump installation, local separation) and large structural solutions (including the West Side CSO tunnel system), as well as treatment plant and pump station upgrades. Part of the CSO abatement strategy includes separating combined flows in some areas and evaluating water quality treatment alternatives for the resultant separated stormwater flows. In addition, the City is integrating approaches to address combined sewer overflows with other programs. During permit year five, the City developed the Clean River Plan, which integrates the stormwater management and watershed/fish habitat enhancement efforts addressed under the Integrated Watershed Plan (IWP) with basement flooding relief and CSO abatement.
Since 1990, Portland has reduced CSOs from 6.0 billion gallons per year to less than 2.8 billion gallons per year on an average basis. CSO discharges to the Columbia Slough have been reduced by over 99 percent, while discharges to the Willamette River have been reduced by over 40 percent.

**Sewer Separation**

Figure 1 on page 7 shows City of Portland stormwater outfalls. In permit year nine, there were no separations of combined flows that resulted in the conversion of CSO outfalls to stormwater-only outfalls.

*Note:* Upon further refinement of analysis and modeling of CSO and stormwater outfall catchment areas, the areas that drain to outfalls #8, #8A, #29 and #32 were adjusted and are shown accurately on the map of NPDES Stormwater Permit Areas in Section I of this report.

**West Side Willamette Projects**

The current phase of construction focuses on controlling the 16 CSO outfalls on the west side of the Willamette River. The status of these projects is summarized below.

* Tanner Creek Stream Diversion
  Construction continued for the main separation conduit and final design of the remaining segments. This stream separation project is divided into 5 phases. Construction for Phases 1, 2, and 5 was completed in previous fiscal years. During FY03-04, design of Phase 3 (Sylvan/Canyon to Light Rail) progressed and is approximately at the 70 percent design stage. Construction of Phase 4 (north side of Washington Park along Burnside) continues and is expected to be complete by FY 05-06.

* California Pump Station Upgrade
  The sewer separation project in the collection system contributing to the pump station was substantially completed in April 2003, and a flow-monitoring network was established to evaluate the quantity of wet-weather flow to the California Pump Station. Flow monitoring to determine peak influent flows for design of the California Pump Station Upgrade was completed in May 2004. The results of the monitoring effort are that the pump station needs to be upgraded from 500 gallons per minute (gpm) to a firm pumping capacity of approximately 1,320 gpm. The current schedule shows design to be completed in FY05-06 and construction to be completed the following fiscal year.

* Carolina Stream Diversion Project
  BES expanded the detailed modeling and analysis for the Carolina Stream Diversion Project to determine the specific cost-effectiveness for CSO control. The information was used by the CSO Sizing and Flow Management Project to determine if it would be more cost-effective to separate Carolina than to separate other locations. Results showed that Carolina separation was not cost-effective, and staff therefore recommended dropping it from the list of CSO projects.
**SW Parallel Interceptor**

Discharges from outfalls #01 through #07 are divided into 3 distinct segments that generally parallel SW Macadam Boulevard. Segment 1 is aligned along SW Virginia from SW Taylors Ferry to SW Sweeney. Segment 2 stretches from Sweeney to Lowell, primarily along the railroad right-of-way. Segment 3 will be installed from Lowell to the SW Clay Street drop shaft, where it will connect into the Westside CSO Tunnel. The Segment 3 pipeline has a diameter ranging from 72 inches to 84 inches and is approximately 8,000 feet long.

During previous fiscal years, Segment 1 and Segment 2 were completed. Construction of Segment 3, beginning with utility relocation, was initiated in FY02-03 and is scheduled to be completed in FY04-05.

**West Side CSO Tunnel, Shafts, Pump Station and Pipelines**

Northbound and southbound excavation of the West Side CSO Tunnel was initiated. Construction continued on all drop shafts and pump station wet well for this integrated system, which includes 18,000 feet of 14-foot-diameter tunnel at depths from 70 to 120 feet below the ground surface. The project starts at SW Clay and terminates with the pump station force main connection to the existing Peninsular Tunnel near N Greeley Ave. The pump station will have a future capacity of 220 million gallons a day (mgd), but will initially require only 100-mgd capacity to pump the West Side CSO flows to the existing Peninsular Tunnel interceptor.

**East Side Willamette Projects**

**CSO Sizing and Flow Management Project**

This project is developing the sizing, configuration, and operation recommendations for designing the Willamette Eastside CSO Tunnel by determining the best balance of stormwater separation, interceptor relief, and flow equalization to meet the various objectives for CSO, stormwater quality, and systems operations. The two-year project must provide design recommendations for the interceptor/basin relief, stream diversion, and stormwater separation projects that impact CSO flows. In fiscal year 03-04, the project team submitted the recommended size of the Eastside CSO Tunnel diameter to the Predesign Project Team, along with recommended inflow reduction projects timed from 2006 through 2040. Examples of these projects include basin stream separation, stormwater separation, and inflow controls. In addition, the project completed the Characterization Report to provide the latest estimated flows throughout the combined sewer system and the information required to size and operate the Eastside CSO Tunnel system.

**East Side CSO Tunnel Predesign**

Initiated in FY02-03, the East Side Tunnel Predesign project will determine the final horizontal and vertical alignment of the tunnel, including location of mining, access, and drop shafts. It will also finalize the size of the East Side Tunnel, based on the

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recommendations from the CSO Sizing and Flow Management Project. Preliminary design of the East Side CSO Tunnel was initiated in February 2003. The purpose of this project is to control the overflows at the remaining 14 outfalls to the Willamette River by 2011. The tunnel will be approximately 5.7 miles long, 21 to 22 feet in diameter, and 85 to 165 feet deep. The predesign/preliminary design will be complete (with 30 percent preliminary design and construction documents) in fiscal year FY04-05.

**Columbia Boulevard Treatment Plant (CBWTP) Projects**

**Columbia Boulevard Influent Pump Station Capacity Improvements**
The design was revised for upgrading the CBWTP Influent Pump Station (IPS) from 105 mgd to 135 mgd capacity to manage the additional flows from the West Side CSO system. Revisions are required to manage low-flow debris that clogs pumps. A construction contract to upgrade the CBWTP IPS from 105 mgd to 135 mgd was awarded in fiscal year 03-04, and construction is underway.

**CBWTP Wet Weather Headworks**
The substantially complete design for retrofitting the existing screen house building into a 150-mgd-capacity wet-weather screening facility has been shelved, and will be revived and updated at the appropriate time to upgrade the CBWTP wet-weather screening capacity “just in time” to accommodate increased peak influent flows resulting from the implementation of the East Willamette CSO control system. Current CSO System Operations Plan development work will be used to confirm the decision to delay construction of the Wet Weather Screening Facility. The hydraulic improvement structures and pipelines were incorporated into the IPS Upgrade Project, and are under construction at this time.

**Columbia Slough CSO Program**
Since the completion of the Columbia Slough CSO facilities in the middle of permit year six (December 2000), the primary work performed on the facilities has consisted of operation, maintenance, and monitoring, as well as addressing any concerns in an adaptive management process. Facilities associated with outfalls #54, 55, and 56 in the North Portland area of the Columbia Slough were modified in summer 2002. Since that time, there have been no overflows from those outfalls. The large Columbia Slough Consolidation Conduit (CSCC) and the related pumping and conveyance system have performed above the required level in controlling storms equal to and exceeding the five-year winter storm. There has not been an overflow from the CSCC system since it began operation in October 2000.

**Willamette River Predesign (Inflow Control) Project**
The Willamette River Predesign Project was initiated during permit year two to identify stormwater inflow controls that could help reduce the size of the CSO collector pipe, reduce local basement flooding, and support water quality goals. The inflow control technologies included potential innovative "green" technologies such as infiltration ponds, rooftop stormwater detention, bio-infiltration swales, and vegetated buffer strips. The planning and
cost-effectiveness analyses for the inflow controls, as well as the development, calibration, and execution of hydraulic and pollutant models, were completed during permit year three. The planning and modeling exercise, conducted in permit year four, identified 48 projects for further evaluation as part of subsequent predesigns for sewer subbasins in the Willamette.

In permit year six, the City initiated the Holladay, Stark, and Sullivan Basins Predesign for Basement Flooding Relief, the first of the predesigns for Willamette subareas. Using a refined “explicit” hydraulic model, the predesign included a reevaluation of the inflow control projects previously identified in the Willamette River Predesign. The predesign also identified other potential projects and suggested that in the Holladay, Stark, and Sullivan sewer basins, a number of inflow control projects could provide cost-effective alternatives to pipe solutions, particularly for relief of local basement flooding problems.

The Holladay, Stark, and Sullivan Basins Predesign was completed in year seven. The predesign recommended construction of approximately 25 of the projects. The first of the projects, a landscape infiltration basin adjacent to Glencoe School at SE 52nd Avenue, was designed in permit year seven and constructed in permit year eight. The project addresses the local basement flooding problem, but also serves as an important example of how stormwater retrofits can be incorporated into urban landscapes as attractive public amenities. In addition, BES began the predesign of a similar project near Mt. Tabor Middle School.

In January 2004, assumptions for 2040 future impervious area were substantially revised and adopted by BES. These assumptions greatly affected the localized impact of inflow controls and required a re-analysis of all sewer basins. In order to incorporate these changes, the predesign recommendations for inflow control projects were delayed to permit year ten. Based on the recommendations, funding requests will subsequently be prepared.

**Commercial Retrofit Demonstration Projects**

In permit year six, the City initiated a series of stormwater demonstration projects (at that time, called the Willamette Stormwater Control Program). The program partnered with commercial property owners to retrofit existing properties with stormwater controls, reducing stormwater runoff that would otherwise reach the combined sewers. The goal was to contribute funding for up to 15 individual pilot projects, providing needed information about the technical feasibility, cost, performance, and acceptability of these types of stormwater retrofits.

Two of the demonstration projects were completed in permit year seven, and nine projects were completed in permit year eight, resulting in a total of 11 demonstration projects. BES provided $350,000 in grant funds to help support the projects; the total cost of the projects was more than $650,000. The projects remove or substantially reduce runoff from more than five acres of roofs and parking lots. Landscape infiltration systems and infiltration swales were the most common technologies employed. The projects also include soakage trenches, a green roof, and a pervious pavement system.
In permit year nine, staff completed the Draft Summary Report that evaluates the costs and performance of the 11 grant projects (commercial stormwater retrofits) completed in 2002. The final product will be a report summarizing the feasibility, cost, and performance of the projects. The report will provide important information for watershed planning, basement flooding relief, and CSO control efforts.

**Downspout Disconnection Program**

The Downspout Disconnection Program focuses on disconnecting downspouts at residential properties in areas of the City east of the Willamette River served by the combined sewer. Removing stormwater runoff from the combined sewer system and allowing it to infiltrate helps reduce CSOs and improves overall water quality. In permit year nine, 3,044 downspouts were disconnected at 1,926 homes. Since FY 95-96, 43,689 downspouts have been disconnected at 21,242 homes.

**Pretreatment Programs and Publicly Owned Treatment Works (POTWs)**

Many of the City's more traditional operations and infrastructure support water quality goals. Sanitary sewage is collected for treatment at the Columbia Boulevard and Tryon Creek publicly owned treatment works (POTWs). Existing pretreatment programs protect the sanitary system infrastructure, reduce pollutant releases to surface waters during combined sewer overflows, and prevent discharges that could cause treatment upsets or result in pollutant pass-through to surface waters.

The South Airport Basin Project in the Columbia Slough Watershed will provide sanitary sewer service to unsewered areas in the area of Columbia Boulevard from NE 42nd to NE Colwood. The project has five phases and includes 8,000 feet of pipe and six pump stations. Trunk lines and collector lines extend from Columbia Boulevard to the south and the Columbia Slough to the north, and from Colwood Way to the east to just west of 42nd Avenue. Design of Phase 2 was completed in June 2003 and includes two pump stations, 4,700 feet of force-main sewer pipe, and 1,800 feet of gravity sewer pipe. Preliminary design of the other phases is complete. Final design is pending acquisition of required easements for the pump stations and pipelines. Design of all phases will be completed in FY04-05, and construction will be completed in FY06-07. When completed, this project will sewer over 200 commercial and residential properties in the project area that are not currently connected to the sanitary system.

**Watershed Programs**

During permit year nine, the City continued implementing watershed programs in the Columbia Slough, Johnson Creek, Fanno Creek, Tryon Creek, and Willamette River Watersheds. The Willamette River Watershed programs focus on Balch Creek, streams draining to the Willamette that are not currently addressed under a separate program (e.g., Stephens Creek), and areas affected by the Willamette River Predesign Project. BES continued to use an integrated watershed planning approach to stress comprehensive, multi-objective watershed management along geographical boundaries, coordinating the various jurisdictional and public interests within those areas. This approach helps identify and prioritize projects and activities on a watershed basis to maximize water quality benefits and enhance watershed health. BES’s watershed approach also supports...
the City’s River Renaissance Strategy, which establishes guiding principles and policy
direction to achieve the City’s River Renaissance Vision adopted in March 2001. One
key element is direction on how to achieve Portland’s goals for a clean and healthy
Willamette River and healthy tributary watersheds.

Because of high public interest in the health of Portland's watersheds, public participation is
an important element of watershed planning and implementation. During permit year nine,
the City actively participated on watershed councils for the Columbia Slough, Johnson Creek,
and Tryon Creek. In addition, the City fosters citizen stewardship through its Community
Watershed Stewardship Program. In permit year nine, this program provided 11 grants
totaling $48,750 to citizen groups to conduct watershed stewardship projects in their
watersheds.

Endangered Species (ESA) Program
Water quality and quantity improvement and protection are critical objectives in establishing
watershed priorities and addressing the needs of at-risk species. These objectives have been
heightened by the National Oceanic and Atmospheric Association (NOAA) March 1998
listing of steelhead trout as a threatened species under the Endangered Species Act (ESA), the
listing of Chinook salmon as a threatened species in March 1999, the passage of Metro’s
Stream and Floodplain Protection Plan (Title 3), and the compliance requirements of Goal 5
of Metro’s Functional Plan.

Twelve identified populations of Chinook and steelhead in the Columbia and Willamette
Basins migrate through the City of Portland as they move to spawning areas or out to the
ocean. Within the NPDES permit area, the main problems include water quantity and quality,
habitat degradation and loss, and fish passage blockage by structures such as culverts.
Altered flows from stormwater runoff and impervious surfaces affect the rates and
magnitudes of flooding in creeks such as Johnson and Tryon, as well as base flows during the
summer low-flow period. Increased rates and magnitudes of flooding erode banks, incise
channel beds, and fill pools, affecting rearing and spawning habitat through a variety of direct
and indirect ways. Historic and current attempts to control flooding include hardening banks
and filling floodplains.

The cumulative loss of habitat complexity and riparian vegetation has resulted in degraded
conditions, including decreased water oxygen, increased temperatures, bacteria, nutrients, pH,
and toxic contaminants. These are all water quality parameters that negatively impact fish
and other aquatic life, as well as create human health concerns. In 1996, DEQ listed the
Willamette River, Johnson Creek, Columbia Slough, and Tryon Creek as “water quality
limited” for these parameters. Many of these parameters can be linked to increased
stormwater runoff and decreased base flows stemming from urbanization.

The Stormwater Program activities closely relate to ESA goals. Implementation of BMPs
will mitigate stormwater quantity impacts and improve water quality. In permit year nine, the
Stormwater Program continued coordination with City ESA staff on program activities related
to fish impacts.
The ESA Program prepared a review draft of a Framework for Integrated Management of Watershed and River Health, which describes the City’s scientific principles, goals, analytical tools, and planning and decision-making processes for watershed management to achieve healthy watershed conditions. The watershed management approach described in the Framework will help the City simultaneously address many of its obligations under the Endangered Species Act, Clean Water Act, and Superfund laws. The Stormwater Program will be a very important aspect of that process. City bureaus and programs, as well as an Independent Science Team (IST), reviewed the review draft Framework. The IST reported that the Framework was a “scientifically defensible document” and made a number of recommendations for strengthening it. The ESA Program modified the document, and issued the revised Framework for public review, including review by the City’s Watershed Science Advisory Group. The Framework was well received, and will be presented to City Council for approval in late 2004.

Environmental Planning/Zoning Program Update
The City has continued to make progress toward updating the existing environmental planning and zoning program. Over the past year, the City has nearly completed a remapping of almost all streams within the City of Portland. Nearly 288 miles of stream centerlines were modified, and over 100 miles of stream segments were mapped for the first time. In addition, the City is developing a new and improved vegetation data layer that includes classification of vegetation types and cross-checks with multi-spectral vegetation imagery from 2000. This information will be incorporated into the City’s natural resource inventory update, along with the development of GIS models and other tools to support the project. The updated inventory, anticipated in 2005, will be used to support activities such as updates to Portland’s environmental zones and Willamette Greenway Program, and to set priorities for land acquisition and restoration.

The City is also developing code amendment concepts that will improve current processes to enforce violations of environmental codes (e.g., removal of native trees without a permit) and make it simpler and easier to obtain permits for resource enhancement projects. These projects are intended to contribute toward the City’s compliance with the Endangered Species Act and Clean Water Act, as well as with Oregon land use planning goals 5, 6, and 7 and Title 3 of Metro’s Urban Growth Management Functional Plan.

Portland Harbor Superfund Site
The City is a member of the Lower Willamette Group, a coalition of businesses, the Port of Portland, and public agencies that have voluntarily stepped forward to participate in the investigation and cleanup of the Portland Harbor Superfund site. During permit year seven, the group submitted to EPA the round I Remedial Investigation/Feasibility Study (RI/FS) workplan that characterizes the extent of contamination in fish and sediments in the harbor. During permit year eight, the group began to implement the RI/FS. The group performed the first round of fish tissue and sediment sampling, and submitted plans for the second round of sampling scheduled to occur in FY 03-04. In FY 03-04 (permit year nine), a workplan and field sampling plans for the remedial investigation were approved by EPA and its partners in preparation for additional sediment sampling to
begin in July 2004. Bathymetric data that provide information on the physical river system continue to be collected. The cleanup process will also assess risks to humans, wildlife, and the environment from contaminated sediments; implement early restoration projects; implement the identified remedial actions; address source control to prevent future contamination; and coordinate with other initiatives, including salmon protection and other natural resource issues.

The City of Portland has signed an intergovernmental agreement with DEQ, under which both agencies will work cooperatively on the evaluation and control of potential upland sources of contamination to the City’s stormwater conveyance system. The City and DEQ will coordinate the implementation of source control activities. A pilot project was initiated with DEQ at one eastside outfall (M-1) and one westside outfall (18) in summer 2002. The pilot project helped both parties determine how to coordinate source investigation and control activities for the larger investigation. The City has submitted a Source Control Remedial Investigation for the City outfalls to DEQ, which documents the City’s approach to evaluating discharges from City stormwater outfalls.

The City has also entered into a Feasibility Cost Sharing Agreement with the U.S. Army Corps of Engineers under the Water Resources Development Act to conduct ecosystem restoration feasibility studies in the Lower Willamette River. Phase 1 of the work began in 2004, and will result in a list of potential restoration projects that will be forwarded for further evaluation in Phase 2. Phase 2 is expected to begin in 2005.

CITY BUDGET AND FUNDING
The City of Portland has invested more than $323 million in stormwater management services and facilities during permit years one through nine. The revenue requirements for permit year nine totaled more than $50.6 million, allocated as follows:

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<td>Enforcement and Development Review</td>
<td>$3,447,776</td>
<td>7</td>
</tr>
<tr>
<td>Watershed Program &amp; Habitat Restoration</td>
<td>4,450,199</td>
<td>9</td>
</tr>
<tr>
<td>Facilities Operations and Maintenance</td>
<td>8,826,686</td>
<td>17</td>
</tr>
<tr>
<td>Capital Improvements*</td>
<td>33,830,016</td>
<td>67</td>
</tr>
<tr>
<td><strong>Total Revenue Requirements</strong></td>
<td><strong>$50,554,677</strong></td>
<td></td>
</tr>
</tbody>
</table>

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

Nearly 89 percent of these revenue requirements are financed through direct monthly user fees. The remaining revenue sources include direct charges for new private development (system development charges, or SDCs), service charges, permit fees, and regulatory charges and penalties. More details on City revenues are provided below.
In year ten, the City plans to invest $55,636,076 in stormwater management services and facilities. As in prior years, direct monthly user fees will pay for nearly 90 percent of these investments.

**Stormwater Management Charges**

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

The following table reports the monthly single family stormwater management charge and the monthly stormwater rate per 1,000 square feet of impervious area for the last five permit years:

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Single-Family Residential Charge</td>
<td>$8.78</td>
<td>$10.01</td>
<td>$10.97</td>
<td>$11.42</td>
<td>$12.07</td>
</tr>
<tr>
<td>Residential rate per 1,000 square feet of impervious area</td>
<td>$3.66</td>
<td>$4.17</td>
<td>$4.57</td>
<td>$4.76</td>
<td>$5.03</td>
</tr>
<tr>
<td>Non-residential rate per 1,000 square feet of impervious area</td>
<td>$4.01</td>
<td>$4.63</td>
<td>$5.00</td>
<td>$5.17</td>
<td>$5.54</td>
</tr>
</tbody>
</table>

At the close of FY 2003-2004, City Council increased the monthly charge for single-family residences from $12.07 to $13.30. The residential rate increased from $5.03 to $5.54 per 1,000 square feet of impervious surface per month, and the commercial rate increased from $5.54 to $6.06 per 1,000 square feet of impervious area per month.

In December 2000, the Council authorized the development of a discount program for ratepayers who manage the quantity and quality of stormwater on their property. The program will provide a discount of up to 100 percent of the property component of the monthly stormwater management charge. BES is developing program criteria that will set the highest financial incentive for facilities that manage stormwater to the strictest water quality, volume, and flow control standards. This approach will promote facilities that use vegetated surface infiltration. The program will be implemented as soon as the City’s utility billing system is capable of providing data processing support. The anticipated start date is July 1, 2006.

**Stormwater System Development Charges**

Formerly based on impervious area, the methodology for assessing system development charges for new development and significant redevelopment was revised in permit year three to include two components. One component represents the charge for stormwater facilities that handle runoff from individual properties. For permit year nine (FY 2003-2004), this onsite portion was assessed based on $102.00 per 1,000 square feet of impervious area. Riparian properties that drain directly to the Columbia Slough, Columbia River, or Willamette River are exempt from this portion of the SDC. The other
portion represents the cost of stormwater facilities that handle runoff from public rights-of-way. This portion was assessed based on the use of the transportation system, using road frontage and vehicle trips to allocate the costs. For permit year nine, the rates were $3.07 per linear foot and $1.57 per vehicle trip. At the end of permit year nine, City Council increased the rates for stormwater system development charges as follows: $110.00 per 1,000 square feet of impervious area, $3.52 per linear foot of frontage and $1.80 per daily vehicle trip.

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

**ACTIVITY REPORTS**

The following pages summarize the status of the City of Portland BMPs. The following information is provided for each BMP:

- The BMP identifier (e.g., PI1) and description
- Key accomplishments for permit year nine (FY 03-04)
- Challenges and solutions
- Projected major accomplishments for permit year ten (FY 04-05)
- Proposed BMP Revisions
PI-1 Implement a comprehensive stormwater/watershed Public Participation Program that includes information, education, involvement, and stewardship; evaluate and update the program annually.

KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

Naturescaping for Clean Rivers
Continued the Naturescaping for Clean Rivers residential program, in partnership with the East Multnomah Soil and Water Conservation District (EMSWCD), Metro, DEQ, AmeriCorps/Northwest Service Academy, and SWNI (Southwest Neighborhoods, Inc.). Activities included:

- Conducted 13 four-hour “Naturescaping Basics” workshops, with 300 total participants, in the Portland metro area.
- Conducted five “Site Planning I” workshops, with 101 participants, and two “Site Planning Feedback” sessions, with 11 participants.
- Worked with numerous community partners, including the Columbia Slough Watershed Council, Portsmouth Middle School SUN Program, Oak Lodge Sanitary District, CTLH Neighborhood Association and Heron Pointe, Mt. Tabor Neighbors, Smile Station, Northwest Earth Institute, Hoyt Arboretum, Clark County, Johnson Creek Watershed Council, Friends of Community Gardens, East Columbia Neighborhood Association, Clackamas Community College, Far SW Neighborhood Association, Friends of Tryon Creek State Park, Argay Neighborhood Association, Rock Creek Watershed Partners, Tualatin River Watershed Council, City Repair Project, and the Woodstock Neighborhood Association.
- Conducted one “Naturescaped Yard Tour,” which offered a drop-in clinic for participants to see Naturescaping principles on the ground. The tour hosted 75 participants.
- Attended 19 events (e.g., Earth Day, Natural Style Home and Garden Show, Fix-It Fairs) to let 4,445 people know about the Naturescaping for Clean Rivers program.
- Created three-dimensional displays of homes that use conventional landscaping compared to homes that use Naturescaping techniques.
- Promoted the program and concepts through the media, including a one-hour live interview via Portland Cable Access and an Oregonian article on residential stormwater used in garden design.
Downspout Disconnection Program
Disseminated Naturescaping and stormwater information as part of the outreach and education efforts of the Downspout Disconnection Program, which included the following activities:

- Canvassed 11,000 homes, and achieved a participation rate of 31 percent.
- Launched outreach to landlord-owned properties (approximately 7,500 properties) within target areas through direct mail, phone banking, staffing information tables at public events, and landlord trainings. Over 250 properties were signed up during permit year nine.
- Provided information through community events, reaching approximately 5,000 people.
- Spoke at almost 40 community meetings.
- Conducted watershed curriculum, in which 150 students participated.
- Conducted an ongoing media campaign, including events and major and local community media.
- Mobilized 300 volunteers, who contributed about 1,500 volunteer hours.
- Partnered with 300 community organizations and hired five canvassers.
- Evaluated the original target area by surveying 20,000 properties. Less then four percent of the properties had reconnected; less then one percent complained of water problems; and more then 95 percent stated that they were satisfied with their participation.

Stormwater Education Activities
- Reached 7,430 students (grades K-12) with classroom programs that provide hands-on, interactive science education about stormwater and other environmental issues.
- Involved 4,730 participants in education field programs that offer watershed investigations and stewardship opportunities such as tree plantings and non-native plant removal.
- Participated in 25 community events, with a total of 3,400 event participants. These include Slough 101, Wetlands 101, Groundwater 101, cycling events, neighborhood association picnics, and other venues in which stormwater was a topic of instruction.
- Participated in training 10 “Eyes on the Slough” volunteer monitors. Monitors paddle each reach of the Columbia Slough monthly and report on water quality and landscape conditions.
• Provided canoe tours of the Columbia Slough to 219 students who had studied about the Columbia Slough Watershed and had completed a stewardship project.

• Provided jet boat tours of the Willamette River to 1,064 students who had studied combined sewer overflows and had completed a stewardship project. The focus of the tour was on Willamette River history, combined sewer overflows, stormwater pollution, and personal actions to prevent stormwater pollution.

• Checked out stormwater and watershed curriculum kits to 24 Portland elementary and middle school teachers, reaching 702 students.

• Provided teacher training workshops, involving 101 participants.

• Presented “Stormwater - Soak it Up,” a one-hour classroom program for grades 6-12, to 491 students. The students learned to identify pollutants, read aerial maps, distinguish between pervious and impervious surfaces, calculate runoff, and design greener cities.

• Presented “Tours of Stormwater Solutions,” a two- to three-hour program tailored as appropriate for grades 5-12, to 107 students. The students visited bioswales, stormwater planters, ecoroofs, porous pavement, and creative downspout disconnections. They learned how these solutions can filter pollution, slow down stormwater, and prevent erosion.

• Involved 2,389 students in a program that includes water quality education, site adoption and planting, and watershed restoration. The adopted sites included Alsop/Brownwood, Errol Heights Gabriel Park, Whitaker Ponds, Ramsey Lake, and various other sites along the Columbia Slough. These activities were in partnership with Portland Parks and Recreation and the Columbia Slough Watershed Council.

• Continued to offer the “River Heroes” school assembly program and presented it at 31 elementary schools within the City of Portland. The program focuses on stormwater pollution and solutions and reached 8,800 students. Updated the combined sewer overflow section of the program and produced a compact disc of all the stories, which was distributed to schools.

• Improved the combined sewer overflow classroom education program by including an interactive timeline activity and the new River Renewed documentary video about the Willamette River, narrated by Walter Cronkite. This lesson is often conducted in conjunction with the “Soak It Up” stormwater education program.

• For Portland public schools in the Columbia Slough that were retrofitted with stormwater management demonstration projects in FY02-03, enhanced the curriculum to focus classroom learning on the science of stormwater management. Lessons were taught at four of the six schools involved in the demonstration projects.
• Gave the “StreamWalk Game” to teachers who requested the assembly programs. This game is used in the classroom or the field to help students identify the characteristics of a healthy stream.

• Completed the first year of a permanent curb marker program that replaced the stormdrain-stenciling program. School and community groups placed 1,074 permanent markers. The program is a community and school stewardship activity to increase awareness of stormwater pollution and help prevent the public from disposing of household or lawn chemicals into the storm drain. The markers are round, four-inch-diameter plastic medallions that are adhered with an epoxy to the face of the curb next to a stormdrain. Volunteers also distribute doorknobs containing stormwater pollution prevention messages and clean river tips to nearby residences.

• Co-sponsored six “Canoe the Slough” events, in which 75 participants received information about urban stormwater.

• Co-sponsored the “Columbia Slough Regatta,” in which 410 participants paddled the waterway and received stormwater information.

• Conducted six "Soup on the Slough" events for 100 people, in which participants ranging from community activists to business owners and operators were introduced to stormwater and hydrology issues in the urban slough waterway.

• Co-sponsored Explorando el Columbia Slough, an event targeted to the Hispanic community that provided stormwater information and canoe rides to 500 participants.

• Participated in the development of the Columbia Slough Watershed Council Action Plan, which identifies numerous stormwater watershed restoration projects and activities for the Council and its partners.

• Participated in the development of the Johnson Creek Watershed Council’s Watershed Action Plan, which identifies goals and objectives for water quality and projects to improve natural floodplain functions.

• Helped Grant High School redesign the parking lot bioswales and write a grant to make improvements.

• Hosted the Second International Ecoroof Conference, attended by 600 people. Led 149 people on tours of Portland’s ecoroofs.

• Provided technical assistance and/or incentives for riparian restoration and stormwater projects on private and public property for Portland Rowing Club, Balch Creek neighbors, Oregon Food Bank, Friends of Woods Creek Park, Portland Community College Restoration Team, Trillium Creek neighbors, Tryon Creek
residents, Tryon Creek Watershed Council, Maplewood Elementary School, Portland State University Native American Center, Sabin Elementary School, Davis Elementary School, From These Hands Natural Building, Rigler Elementary School, Lynchwood Middle School, Grant High School, Sellwood Middle School, Glencoe Elementary School, Harvey Scott Elementary School, and Friends of Tryon Creek State Park. Partners included AmeriCorps, SOLV, City of Lake Oswego, Friends of Trees, Portland State University, watershed councils, and Ecoroofs Everywhere.

- Sponsored a Streamside Property Owners workshop at Leach Botanical Garden that encouraged watershed stewardship.
- Sponsored a Snap-Shot Monitoring Day event on Johnson Creek, giving creekside property owners the opportunity to conduct water quality sampling.
- Co-sponsored the sixth annual Johnson Creek Watershed-Wide Restoration Event, where over 400 volunteers helped plant trees, remove invasive species, and pick up trash from ten watershed locations.
- Provided stormwater education materials to the Association for Clean Water Agencies (ACWA) to include in the annual ACWA Stormwater Summit. The education program was included on the “Best of the Best” CD produced by ACWA.

**Stewardship Grant Projects**
Provided stewardship grants totaling $48,754 to the following organizations:

- Columbia Slough Watershed Council ($4,960) - Volunteer program for education, restoration, and monitoring.
- King Neighborhood Association ($1,645) - Mallory Meadow Naturescaping.
- Cedar Sinai Park/Hayhurst Neighborhood Watershed Project ($5,000) – Invasive removal, interpretation, trail, and erosion control.
- Portland Community College – Sylvania Campus Foundation ($4,499) – Restoration on Ball Creek.
- Bridlemile Creek Stewards ($5,000) - Albert Kelly Park restoration and community education.
- Lents Springwater Habitat Restoration Project ($5,000) – Community plantings, youth education.
- Cedarwood School ($4,650) – Asphalt removal, stormwater planter, and Naturescaping.
- Sabin Community Playground Improvement Project ($5,000) – Disconnection of downspouts to redirect water to vegetated infiltration area, and Naturescaping.
- Friends of Trees ($5,000) - Ecoroof demonstration project.
- Elk Rock Island ($3,000) – Restoration and community education.
- Friends of Trees – Butterfly Park ($5,000)- Naturescaping project.
Education Advisory Committee
Continued bimonthly Education Advisory Committee meetings to review and advise on public participation approaches and activities.

Regional Coalition for Clean Rivers and Streams
Continued participation in the Regional Coalition for Clean Rivers and Streams, with the following activities:

- With an annual budget of $60,000, conducted the ninth year of the annual public awareness campaign. Coalition membership/participation includes: City of Portland/Environmental Services, Clean Water Services of Washington County, Water Environment Services/Clackamas County, City of Gresham, Metro, City of Vancouver, and Washington and Clark Counties, Washington. The public awareness campaign message for 2003/04 was: “Is Your Lawn Chemical Free? Maybe It Should Be.” Coalition members used the message and creative art produced for the 2002/03 campaign.

- Used transit boards and newspaper ads as the outreach tools for the campaign, which ran from March 30, 2004 to May 30, 2004. The media buy resulted in two million impressions from the newsprint advertising. The newsprint ad included a coupon for money off a native plant or organic fertilizer from five garden centers. The transit buy included 110 units over eight weeks and included 90 interior bus cards.

- Received 10,000 hits on the Coalition website (www.cleanriversandstreams.org) during April, May, and June. The website included the newsprint ad with the coupon. A Spanish version of lawn care tips was added to the website.

- The City of Portland water/sewer bill insert for the March, April and May 2004 billing cycle reached 164,000 Portland sewer customers.

Eco-logical Business Program Promotional Campaign
- Developed new program materials for the Ecological Business Landscape Services program.

- Revised the automotive handbook and checklist to account for statewide and region-specific issues.

- Continued a promotional campaign to raise awareness and communicate the importance of supporting auto shops that operate environmentally responsible business practices. The campaign used newspapers, the Redirect Guide, the Chinook Book, and local news advertising to promote the Eco-logical Business message.

Neighborhood Bulky Waste Curbside Collection Project
- Held 11 bulky waste collection events serving 7 neighborhoods, with 4,248 participating households. Collected approximately 267 tons of materials, 58 percent of which was recycled or re-used.
Publications

- Printed and distributed 15,000 native plant posters with stormwater pollution messages.

- Updated and printed 700 ecoroof question-and-answer fact sheets for distribution.

- Developed a fact sheet about integrating stormwater management into the built environment and a placemat handout that identifies sustainable stormwater management demonstration projects.

- Produced a “Top Ten Invasive Weeds” poster for use in riparian and upland restoration projects.

- Reprinted 3,500 copies of the landscape swale poster.

- Reprinted 3,000 copies of the Naturescaping program brochure.

- Developed an ecoroof brochure for the Greenroof Conference, which includes design and construction data on Portland’s ecoroofs. Printed and distributed 500 booklets and posted it on the website.

- Reprinted and distributed 19,000 copies of the downspout disconnection materials for the canvassing project.

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

Coordination with Other City and BES Programs

- Coordinated with other City projects and programs (e.g., Endangered Species Act Program, Willamette Stormwater Control Program, watershed programs) to integrate stormwater activities and messages.

- Worked with Portland Parks and Recreation, Natural Resources to establish a Friends of Vermont Creek community stewardship group to address streambank erosion issues in Gabriel Park.

- With the Office of Sustainable Development (OSD), sponsored the Green Building Tour, attended by about 1,000 people (plus those reached through media coverage). The tour demonstrated green building techniques in new development, redevelopment, and remodeling projects.

- With OSD, conducted the ReThink training series on green building, reaching over 300 people.

- OSD continued to coordinate and offer Fix-It Fairs, a free neighborhood-oriented event that offers workshops and exhibits on home and garden topics, with a focus on
health and resource efficiency. Over 50 workshops and exhibits provide residents with self-help information and resources on everything from organic gardening, Naturescaping and composting to water conservation, lead poisoning prevention, and lowering energy bills. During permit year nine, 3,200 people attended six fairs.

- Portland Parks and Recreation offered educational programs and maps of native plants at the Beach Community Garden demonstration swale. These programs were developed to demonstrate how the public could contain and infiltrate water in their own gardens and yards, using swales and native plants.

**Other BMPs**

*Public education and involvement activities conducted as part of other BMPs are identified under those BMPs, including IND1, ILL1, ILL2, ND1, ND2, PS2, and PS3.*

**CHALLENGES AND SOLUTIONS**

A major challenge for stormwater public information and outreach is information overload. To be successful, almost every BMP requires some form of information, education, or outreach to impart what businesses and the general public can do to prevent stormwater pollution. Because of the wide variety of programs and audience cross-over, the entire outreach effort runs the risk of overloading the recipients with information.

Another major challenge is to inform the general public about the successes and improvements gained through stormwater management efforts. It is important to demonstrate to people that what they are being asked to do is working to reduce stormwater pollution and improve the quality of our rivers and streams.

In parts of the City where it is particularly challenging to engage the public (for example, Johnson Creek), watershed programs are employing practices of community-based social marketing. This outreach methodology focuses on finding ways to deliver messages in the context of issues that are most pertinent to the audience. For example, information about streamside restoration is focused on how it will lower maintenance time and costs. These issues are of more direct concern to the average citizen than stormwater management, but the outcome (improved riparian areas) is the desired outcome in either case.

**PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)**

The PI1 activities that have proved successful will continue in FY 04-05, including the Naturescaping for Clean Rivers program; Downspout Disconnection Program outreach and education; stormwater education activities; community stewardship grants; participation in the Regional Coalition for Clean Rivers and Streams and Eco-logical Business Program; and coordination with other BES and City programs. Specific projected activities include:
Naturescaping for Clean Rivers
- Develop a new yard tour that highlights stormwater use in gardening. Design new workbook with information on design for downspout disconnections, swales, and ponds.

Publications
- Continue to produce publications to support program areas (e.g., Downspout Disconnection materials, Naturescaping materials, landscape swales poster, native plants poster).
- Continue to develop signage for sustainable stormwater demonstration projects.
- Develop a water/sewer bill insert that focuses on the importance of streets trees for stormwater management and how to select and place appropriate trees.

Activities
- Develop a Stormwater 101/Watershed Health workshop/speakers bureau in support of the watershed improvements targeted to the Willamette mainstem.
- Develop a sustainable stormwater management display for community events.
- Develop homebuilder brochures for preventing erosion and pollution releases from construction sites.

Committees
- Continue bimonthly Education Advisory Committee meetings to review and advise on public participation approaches and activities.

Eco-Logical Business Program
- Develop public information materials and an awareness campaign for the Eco-Logical Business Landscaper Program.

Regional Coalition for Clean Rivers and Streams Awareness Campaign
- Conduct a public awareness campaign that focuses on yard and garden chemical use, as a continuation of this year’s campaign: “Is Your Lawn Chemical Free? Maybe It Should Be.”

Education
- Provide education outreach on the science of stormwater management to schools participating in the EPA “Innovative Wet Weather” stormwater demonstration projects.
- Improve the “Soak it Up” stormwater education lesson by adding an additional math component where students work with a budget to plan for stormwater management facilities in their model city.
Partnerships

- Incorporate the Annual Pollution Prevention Awards into the City’s BEST awards program. (The BEST program assists industries with "green practices" that save water and energy and deal with stormwater and solid waste.)

Coordination with Other City and BES Programs

- Continue to offer Fix-It Fairs and other environmental programs to the public through the Office of Sustainable Development.

PROPOSED BMP REVISIONS

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For PI-1, proposed changes anticipated to date include rewording the BMP description to better reflect current public involvement/education approaches.
OM-1 Develop and implement a Stormwater Maintenance Program that includes elements needed to successfully maintain and enhance performance of MS4 conveyance and treatment facilities within the City’s urban services boundary.

KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- Continued to work on the Stormwater Facilities Maintenance Plan, including identification of potential pollutant issues and potential improvements to existing practices.

- Repaired or constructed 328 inlets, 1,520 lineal feet of inlet lead, and 3,580 lineal feet of culvert.

- Cleaned approximately 715 sumps and sedimentation manholes, 11,400 catch basins, 132,300 lineal feet of ditch, and 24,800 lineal feet of culvert. Made 12,900 maintenance visits to various locations (multiple visits to some locations after major rain events).

- Inspected all 77 detention and water quality pond “pollution reduction facilities” to document the condition of each facility and identify needed cleaning and repairs.

- Conducted predesign for a project to improve an underutilized site at the Columbia Boulevard Wastewater Treatment Plan for use as a residuals processing facility for stormwater facilities (ditches and culverts). The predesign determined that the site was not suitable.

- Began a sedimentation accumulation study at four stormwater management facilities (one swale and three ponds) across the city.

- Monitored retrofit permeable shoulder swales at the City’s Water Pollution Control Laboratory. (See BMP OA-1: Monitoring Compliance Report.)

CHALLENGES AND SOLUTIONS

As budgets shrink and new facilities are added, the challenge is to provide increased and improved maintenance to support water quality goals in an environment where competition for funding is very intense. New funding mechanisms and/or reprioritizing existing funding sources will be needed to adequately maintain all existing and new water quality and quantity control facilities and other parts of the sewer collection system. By rating facilities and setting maintenance priorities, the Stormwater Facilities Maintenance Plan will be an important tool for focusing limited funding on the highest-priority needs.
PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)

- Continue materials and product research and monitor at least two products, facilities, or activities, as budget allows.

- Finalize work on the Stormwater Facilities Maintenance Plan, including a schedule and work plan for evaluating potential improvements to existing practices. Begin identification of watershed-specific weighting criteria for facility operations and maintenance plans.

- Continue the sediment accumulation study at representative facilities.

- Continue monitoring of permeable shoulder swales at the Water Pollution Control Laboratory.

PROPOSED BMP REVISIONS

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For OM-1, proposed changes anticipated to date include rewording the BMP description to clarify the intent and scope of the BMP.
KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

Pollution Prevention

Pollution Prevention (P2) teams at the Bureau of Maintenance (BOM) continued to evaluate and track maintenance procedures, pilot test new products and techniques, evaluate work processes, and monitor developments in related fields, including:

- Improved communication to P2 members by posting additional signage throughout the building on the morning of each day the team meets. These signs, in addition to the digital reader board in the assembly area, are reminders to team members that a meeting will be held that afternoon, thus increasing meeting attendance. Additional notices were posted when a video or presentations of broader environmental interest to the workforce were scheduled.

- Organized a bureau-wide Earth Day recognition event. Information from Metro (composting, household hazardous waste disposal, recycling), Water Bureau (water conservation, water distribution map) and PDOT (bicycle maps, walking maps) was provided. PDOT’s Options Mobile was on display and water reduction devices, plant seeds, and native plants were given away.

Regulatory Activities

- NOAA Fisheries approved PDOT’s application for a Limit 10 under the Endangered Species Act (ESA) section 4(d) rule for its routine roadside maintenance activities. PDOT has committed to follow, with modifications, the best management practices outlined in ODOT’s Routine Road Maintenance Water Quality and Habitat Guide Best Management Practices, as guidance for PDOT’s transportation-related maintenance activities.

- BOM continues to use Portland Parks and Recreation’s Integrated Vegetation Management (IVM) plan as a guidance document. The IVM, approved by NOAA Fisheries under the ESA 4(d) rule to protect salmonids, requires certification of pesticide applicators. This approach is designed to minimize the need for fertilizers, pesticides, and irrigation while developing and maintaining viable landscapes.

- BOM continued to coordinate elements of the ESA, NPDES MS4, and other environmental initiatives into a broader environmental vision as part of the bureau’s core vision and mission of environmental stewardship.
Communication

- PDOT began work on an Environmental Strategic Plan, scheduled to be completed by July 2005, that will offer a complete vision of the environmental challenges facing PDOT and a plan to address them. A steering committee has been convened, and stakeholders will be interviewed. Feedback will be used to develop a mission, vision, and value statement for the program. Top issues will be incorporated into a workplan for the program.

- BOM continued to develop a closer working relationship with the city’s ESA team, BES’s Watershed Division and the Bureaus of Parks, Water, and Development Services on City projects. Improved communication and services have strengthened these relationships.

- A presentation on BOM’s Environmental Program was given to the Northwest Pavement Management Association in March 2004.

- BOM continued to expand its library of educational materials, including video library and reference manuals. These materials are available to all bureau employees. Topics include soil bioengineering, erosion and sediment control, and spill response.

- BOM’s weekly newsletter for all employees now includes a column on environmental issues. The Environmental Team regularly contributed articles to the newsletter on topics covering new BMPs, pollution prevention techniques, and general environmental awareness.

Business Processes

Pilot Projects

- The P2 Team worked with BES’s Sustainable Stormwater Management Program to select appropriate test sites in BOM’s yard for the installation of vortex devices to reduce stormwater inflow rates. Two devices were installed, and the P2 team will continue to work with BES to monitor and evaluate the effectiveness of these devices. A member of BOM’s Environment Systems Division also made a site visit to Chicago, where he spoke with engineering staff and spent a day with field crews responsible for maintaining these devices.

- To reduce weed seed sources next to the right-of-way, and the associated maintenance requirements, BOM designated a test area to compare two low-growing seed mixes. After chemical application to remove invasive plants, one of two different seeds was applied. The seed choices were fescue, Oregon red clover, or a combination of the two. The results of the pilot project were mixed because of a cold snap and an unseasonably harsh winter. This study will be initiated again.

- BOM conducted a pilot project testing the effectiveness of enzymes in the breakdown of hydrocarbons in street sweeping debris. Results were inconclusive. BOM will continue to evaluate disposal options for the street sweeping debris.
• BOM convened a group of City employees to discuss and better track erosion control devices, such as bio-bags and catch basin inserts that are abandoned in the right-of-way or not maintained. These devices can break open, allowing their contents to contribute to stormwater pollution. A protocol for City inspectors has been developed to identify and remove these devices. This process also had the added benefit of improving relationships among bureaus and expanding awareness of sediment control and pollution reduction.

• The bureau continues to use the trenchless liner repair system. This technique reduces environmental impacts by minimizing pavement cuts, excavation, material removal, and trench replacement material.

**Employee Involvement**

**Outside Training Attended**
• BOM employees attended the Pacific Northwest Pollution Control Association Water Environment School at Clackamas Community College. This year’s topics included erosion control programs, streambank restoration, stormwater reuse, the use of compost for erosion control, bio-swales and wetlands.

• BOM employees attended the annual American Public Works Association Conference, which included sessions on responding to landslides and erosion control.

• A member of BOM’s Environmental Team attended the StormCon Conference in San Diego, CA. This included a half-day of training on the California Stormwater Quality Association’s Stormwater BMP Handbook.

• BOM employees attended the Sustainable Streets Forum in Seattle. A total of fifty employees from the cities of Portland, Seattle, and Vancouver B.C. participated in the forum.

**In-House Training**
• During the reporting year, over 125 bureau employees received training from an erosion control and pollution prevention specialist. Training was tailored to the specific activities performed by each section. The trainer conducted site visits prior to training, talked to crewmembers to identify issues, and then addressed those issues during the class. To date, a total of 320 bureau employees have received this training.

• Environmental awareness training, including erosion control, has been incorporated into the orientation for new BOM employees. Each new employee now receives a one-hour overview of BOM’s Environmental Program.
• A member of BOM’s Environmental Team regularly attended bureau section meetings to review spill response measures, erosion control practices, and other environmental issues.

• A section on erosion control methodology has been added to several of the bureau’s crew leader manuals and testing procedures. Erosion control questions have been incorporated into job interview questions when applicable.

• The bureau continued its monthly environmental steward recognition program. This award acknowledges employees for making an outstanding contribution to environmental protection, pollution prevention, and/or erosion control.

• BOM personnel taught a two-hour erosion control training session to Water Bureau field personnel.

• The following is a list of guest speakers and vendors who have provided topics of interest to P2 team:

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
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<tbody>
<tr>
<td>8/27/03</td>
<td>Installation of Wind Turbine at Sunderland Yard</td>
</tr>
<tr>
<td>9/24/03</td>
<td>BES Spill Response / Citizen Complaint Section</td>
</tr>
<tr>
<td>10/8/03</td>
<td>BES “The Big Pipe” Project</td>
</tr>
<tr>
<td>11/12/03</td>
<td>Safety and Supply Company</td>
</tr>
<tr>
<td>1/28/04</td>
<td>BES – Reduce SSO, Vortex Devices</td>
</tr>
<tr>
<td>4/14/04</td>
<td>McNamme &amp; Associates Rubberizing Products</td>
</tr>
<tr>
<td>5/26/04</td>
<td>Port of Portland’s Deicing Program</td>
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Development and Implementation of Environmentally Sound BMPs

• Employees continued to use cleanup kits containing a variety of products to clean and control leaks and spills. Customized kits have been created for the City’s street sweepers and other vehicles. These vehicles have limited space and cannot always accommodate the standard six-gallon buckets. The accessibility of these materials allows crews to respond to leaks quickly. Kits are routinely replenished as supplies are used.

• BOM crews have expanded their use of bio-pillows for sediment control on impervious surfaces and hydrocarbon-absorbing booms to trap sediment, oil, and grease while cleaning the grinding machine. These BMPS are placed on the immediate downhill side of the cleaning process, containing any contamination on the job site and away from the catch basins. Catch basin protection at the job site is also provided when grinding and/or paving equipment is left onsite overnight.

• BOM continues to puncture and empty aerosol cans at an onsite designated aerosol can recycling facility. New BOM employees are trained in appropriate techniques to
empty their own cans. This helps reduce and contain the amount of hazardous waste disposed of by BOM.

- Bureau employees participate on several interbureau committees to develop policies, evaluate new technologies, review alternative designs, and assess the long-term maintenance and feasibility issues of sustainable stormwater techniques. Committees include sustainable stormwater for streets, green street designs, swales in the right-of-way, and pervious pavement.

- BOM is primarily using calcium magnesium acetate (CMA) as an anti-icing agent. Magnesium chloride (MagCl) will only be used when conditions are necessary. During 2003, a second 10,000-gallon holding tank was installed to hold additional anti-icing material. Both tanks have secondary containment with shutoff valves at the service hoses and an emergency shutoff valve at the hose fitting to the tank.

- BOM designed and started construction of an exterior truck wash facility to contain sediments and pollutants from equipment. The truck wash facility will have two concrete pads. Trucks and equipment will be cleaned on one pad. On the second pad, an asphalt release agent will be applied to the bed of trucks used to transport asphalt. The waste streams from both pads will be collected and plumbed through a sedimentation manhole and an oil/water separator prior to discharge to the sanitary sewer.

- Prior to BOM’s semi-annual yard cleanups, a member of the Environmental Team now meets with employees to review sediment control and inlet protection methods.

- BOM has expanded the use of compost for erosion control and slope stabilization.

- Where possible, crews continue to use the most environmentally friendly products for graffiti removal. A soy-based cleaner is available and its use is promoted.

- As part of BOM’s emergency response to the 2004 New Year’s snow/ice storm, snow was removed from the downtown and Lloyd Center business districts and stockpiled out of the core areas. BES was consulted in the siting of these snow stockpiles. Inlet protection (bio-bags) was installed and maintained until the snow melted.

- BOM has removed the last hydro attenuator from City streets. All attenuators containing anti-freeze have been removed from the system, and are all now dry systems, eliminating the risk of releasing hazardous chemicals into the environment.
CHALLENGES AND SOLUTIONS

The demands of the ESA program, coupled with funding issues, continue to impact sometimes-competing objectives within maintenance programs. BOM continues to work with ODOT, DEQ, BES, regulatory agencies, and other operating bureaus to balance environmental needs with community priorities within available funding levels. The relationships BOM has developed with these other agencies continue to benefit the City.

The increasing number of environmental initiatives and requirements has affected how BOM conducts its business. The amount of available resources to support these changes in maintenance practices has been limited. BOM has been addressing these environmental initiatives creatively and without additional resources. By supporting the work of the bureau’s Pollution Prevention teams and by encouraging every employee to take responsibility, BOM is meeting its regulatory requirements while setting an example for other maintenance agencies.

PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN
(FY 04-05)

- PDOT will continue to work on its Environmental Strategic Plan.

- The composition of street shoulder material, used to support the edge of streets, will be evaluated. The material with the least amount of fines, allowing for less sediment in the runoff, may not always stay in place and may therefore require more frequent replacement. The environmental impact and maintenance practices for this material will be evaluated.

- The bureau uses a vactor to maintain the storm sewer system. At times, the vactor’s efficiency may be reduced because the hose extension cannot extend to the full length required. BOM will evaluate the purchase of an extension hose for the vactor.

- Continue to evaluate new materials and processes, pilot test tools and techniques, and monitor developments in related fields.

- Continue ongoing crew-level skill training for ESA and PDOT’s routine maintenance practices and water quality guidelines. Educational opportunities will include outside speakers, in-house training, and attendance at various workshops and conferences.

- BOM will continue to work with BES to assess the efficiency of pervious concrete to infiltrate stormwater. BOM has offered the ingress and egress sections of its newly constructed truck wash facility at Albina yard as a test site. BES is coordinating with a private contractor for the placement of these sections. BOM will also complete the construction of the exterior truck wash facility to contain sediments and pollutants.
• Continue to promote a shift in BOM culture to support environmental awareness and skills in BOM’s day-to-day activities, furthering the bureau’s efforts towards environmental stewardship.

• Further expand the bureau’s environmental communication and outreach program. This includes more frequent internal communication, such as regular articles on related topics in the bureau’s weekly newsletter to employees, external messages through community outreach, speakers, and other presenters.

• Continue to evaluate alternate uses for leaf compost and street sweeping debris. Evaluate using compost-filled coffee bean sacks for erosion control and slope stabilization.

• Create a parking containment area within the yard for pieces of equipment that have the potential to cause significant leaks.

• Implement the bureau’s environmental consultations, in which members of the P2 field team visit BOM employees at job sites to help generate ideas to promote more environmentally protective work practices.

• Develop an ESA/water quality guidance document that will eventually replace the OM2 workplan.

• Continue to evaluate and improve housekeeping skills to keep work sites and maintenance yards clean.

• Begin development of a PDOT manual that includes best management practices for all PDOT maintenance activities, not just those addressed in ODOT’s roadside maintenance manual. This manual will include best management practices for such activities as traffic maintenance, environmental systems, pest control, traffic electrical work, recycling, and sidewalk maintenance performed by BOM.

• Develop training for supervisors that concentrates on BMPs that are specific to the type of work performed by that supervisor’s crews. The BMPs included in ODOT’s Blue Book will be used as the basis for the training.

• Participate in the County Cooperative Weed Management Area Committee, which includes the four regional counties: Clackamas, Clark, Multnomah, and Washington. By participating, BOM will stay informed of changes and recommendations in integrated pest management programs.

• Continue to support the environmental steward recognition program.

• Fit the pavement marking grinder, used to remove and capture plastic pavement markings from the street, with a vacuum system to remove the sediment from the street and collect it in an efficient manner for proper disposal.
• Expand the number of recycling stations throughout the Stanton and Albina Yards to reduce the amount of landfilled waste generated by BOM. Develop a map to designate the new locations and educate the crews to increase the bureau’s recycling rate.

PROPOSED BMP REVISIONS
In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For OM-2, proposed changes anticipated to date include rewording the BMP description to emphasize implementation rather than development of activities.
OM-3 Evaluate materials storage, handling, and transportation activities at City-operated facilities to determine whether there are any adverse impacts. Where practical, implement enhancements or alterations to limit identified adverse effects

KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

Bureau of Maintenance

- The bureau has developed containment plans for both the asphalt emulsion tanks located in the lower yard and for the asphalt emulsion recycling station located in Albina Yard. Each plan includes actions to be taken in the event of a spill.

- Pesticides used as part of BOM's Integrated Pest Management Plan are purchased in small quantities, on an as-needed basis.

- Watersorb, a product that absorbs water-based liquids and converts them into a jell that is easier to contain and clean up if spilled, is now part of the spill kit for the Pesticide Application Vehicle.

- A member of the Storeroom is on the Bureau’s Pollution Prevention Team. This increases the Storekeeper’s awareness of the potential environmental impacts of new products or equipment BOM orders and of storage concerns.

- Street sweepers are rinsed after every shift. The rinsate is treated before discharge the sanitary storm sewer. The treatment process consists of routine solids removal, scooping out the debris with a bobcat, and vactor cleaning of the collection system.

- A majority of the rock and backfill material stored at the Albina Yard is stored under cover to reduce pollutant load in stormwater runoff. A three-stage separator has been installed to treat the stormwater from the entire loose material storage area before it enters the stormwater sewer system.

Water Bureau

- Continued to inventory discharges from Water Bureau facilities.

Parks and Recreation Bureau

- Continued testing nutrient levels and the presence of pesticides in surface waters for City golf courses on a twice-annual basis. Based on analyses of collected data, continued an ongoing program to address nutrient and pesticide levels that exceed standards. This program continues for golf courses, on a twice-annual basis.
• Continued the use of special equipment for precise application amounts, timing, and distribution of fertilizer on golf course fairways and greens as part of an ongoing program.

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

• Continued evaluating a pilot program at Sellwood Riverfront Park to test the efficacy of organic-based fertilizers.

CHALLENGES AND SOLUTIONS

Developing evaluation criteria and ranking hundreds of City-owned sites is complex. Site-specific criteria related to age, size, location, and long-range plans for the various facilities must be considered, as well as stormwater-related criteria and other environmental regulations. Some City bureaus are effectively addressing facility management as part of a master planning process for their facilities, with dedicated staff and budgets to evaluate sites.

PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)

Bureau of Maintenance

• Create a parking containment area within the yard for pieces of equipment that have the potential to cause significant leaks.

• Expand the number of recycling stations throughout the Stanton and Albina Yards to reduce the amount of landfilled waste generated by BOM. Develop a map to designate the new locations and educate the crews to increase the bureau’s recycling rate.

• Purchase a facility at 2308 N. Clark and modify it for bulk storage of BOM’s de-icing product. The facility currently has a 90,000-gallon holding capacity, with secondary containment to prevent loss of product.

Water Bureau

• Continue to inventory discharges from Water Bureau facilities.

Parks and Recreation Bureau

• Continue the ongoing evaluation of the pilot program at Sellwood Riverfront Park to test the efficacy of organic-based fertilizers.
• Continue the ongoing program to test nutrient levels and the presence of pesticides in surface waters for City golf courses. Golf course site surface water testing is ongoing on a twice-yearly basis.

• Establish a public/private partnership to fund new cultural practices at key park sites to renovate athletic fields. This reduces fertilizer use and increases water infiltration.

• Reduce storage needs for pesticides at individual golf course sites through an agreement with a vendor to deliver on an as-needed basis. This also shifts any transportation risks to the vendor, who has more appropriate equipment and training.

• Continue to expand hazardous waste transportation training and planning for district employees.

• Work to achieve structural soil changes that improve plant health and optimize use of water and fertilizers, primarily in sports fields but also in other areas.

• Begin an Integrated Pest Management (IPM) enhancement program to formally assess and document alternative pest management techniques, materials, and methods in trials at various locations in city parks, community gardens, golf courses, and natural areas. The program will assess efficacy, economies, impacts, and suitability for park use. The long-term goal is to seek potential environmental, economic, and safety improvements within the IPM approach and provide usable data for BMP improvements. Funding is secured for the major component of the project.

**PROPOSED BMP REVISIONS**

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For OM-3, proposed changes anticipated to date include combining OM-3 and OM-4 into one BMP (OM-3) to clarify activities and remove duplication, while retaining all of the activities previously contained in the two BMPs.
OM-4 Evaluate various City discharges to the MS4, including NPDES permit
identified non-stormwater discharges not addressed by BMP OM1, OM2, or
OM3. Many of these discharges can be associated with operations and
maintenance activities of various City bureaus. Where practical, implement
enhancements or alterations to these activities to limit identified adverse
effects.

KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

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

- The Water Bureau continued to inventory discharges at various facilities, in
conjunction with sump registration and NPDES permit application work for direct
discharges.

- BES, the Fire Bureau, and General Services continued working together on the City's
fire station seismic upgrade to incorporate environmental issues. Specifically, all
upgrades include washing areas that discharge to the sanitary system, with
appropriate pretreatment. This eliminates discharges of wash water to City storm or
ground disposal systems. To date, 12 remodeled stations and three new stations have
been completed with indoor vehicle wash areas and oil/water separators. In FY 03-
04, Stations 8, 19 and 20 were remodeled to feature larger landscaping areas and
indoor wash areas that are now connected to oil/water separators. BES continues to
review new stations and remodeled stations’ plans as they proceed through the
building permit process. All stations are designed to incorporate many environmental
components to achieve and exceed stormwater quality goals.

- BOM continued to review onsite vehicle and equipment washing facilities in
preparation for developing a treatment facility.

- The Pollution Prevention Group’s Industrial Projects Section (IPJS) issued 44 batch
discharge authorizations, potentially diverting 2.2 million gallons of process water
from the storm system to the sanitary system. Batch discharges are authorized for
various practices such as storm line cleaning, contaminated groundwater from
construction projects, and super chlorinated potable water from water line installation.
• The Parks Bureau received Salmon Safe certification for O&M practices. Maintenance activities were examined for their effect on water quality and aquatic system health.

• Portland Parks and Recreation began implementation of an approach to use water drained from the Westmoreland Park casting pond (which has a high algal rate) for irrigation, rather than releasing it to Crystal Springs.

• Portland Parks and Recreation began installation of the Rose City Golf Course irrigation system to reduce water usage; reduce runoff; offer more precise targeting; increase turf health and improve resistance to diseases and insects, reducing reliance on pesticides; and allow for recycling of irrigation water. The equalizing reservoir, pump station, and mainline have been installed.

• Portland Parks and Recreation, in conjunction with Multnomah County Drainage District, did a bank cutback and terracing project at the Portland International Raceway (PIR) to prevent the sloughing off/collapse of the bank into waterways at PIR that lead into the Columbia Slough. These terraces and newly sloped banks were seeded with native grasses and planted with native trees and shrubs.

• Portland Parks and Recreation, in conjunction with PDOT, provided planting and bioengineering to prevent erosion on slide sites on NW Germantown Road and SW Arnold Drive, using native plants and grasses.

• Portland Parks and Recreation continued to maintain the new drip irrigation system in Mt. Tabor Nursery, as well as turf strips to prevent erosion from watering and harvesting equipment.

• Portland Parks and Recreation continued to empty the sump at Mt. Tabor Yards that captures the grass and dirt of Parks mowers when they clean off at the end of shift, so that material is not getting into the storm drain system.

• Portland Parks and Recreation continued to replant and maintain the Riverplace Esplanade plantings located on the bank between the riprap of the Willamette River and the hard surface of the Esplanade walkway. Native and ornamental plants and a mulch were used to prevent erosion on the bank.

**CHALLENGES AND SOLUTIONS**

It has been very challenging to develop evaluation criteria and rank a large group of City activities. It has sometimes been difficult to identify what types of discharges enter the MS4, especially for non-routine, incremental, and emergency activity discharges. In addition to stormwater-related evaluation criteria, other environmental regulation issues must be considered in the ranking criteria. In addition, specific criteria related to other regulations apply to the type and location of discharge. Economics is also a major factor...
driving current activities. These combined factors complicate the evaluation of various City activities for impacts to the MS4.

**PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)**

- Continue to refine the process of requesting and approving discharges to the storm sewer system for other Water Bureau discharges as they are identified.

- Develop a plan for evaluating each bureau's facilities for stormwater impacts. The plan will prioritize which activities to evaluate first.

- Continue discharges inventory work at various City facilities.

- Continue review of onsite vehicle and equipment washing at BOM and other City facilities.

- Evaluate the hazardous material spill response policy and training process. Develop a plan for a new training schedule.

- Use suitable plantings for stream edge enhancement to reduce erosion and runoff at Crystal Springs Rhododendron Garden.

- At the Parks Bureau nursery, continue trials of erosion control soil cover crop techniques and plant species to evaluate efficacy and suitability.

- Pursue funding to install a surface water bioswale at Irving Park to capture large-scale hard surface runoff. A good location for a maintainable facility of adequate size has not been determined. Changes in path grades have been made to reduce erosion and contamination flowing into existing catch basins.

- Implement provisions outlined in the Salmon Safe certification directives.

- Complete the lateral and head installations of the Rose City Golf Course irrigation system.

- Complete well drilling to use water drained from the Westmoreland Park casting pond for irrigation, rather than releasing it to Crystal Springs.

- Evaluate relocating Police Bureau car washing activities in the Northeast Precinct parking lot to an area with a sanitary connection.

- Create a new water catchment basin, using bioengineering and plants, to capture some of the water coming off a new plant holding area in Mt Tabor Yard.
PROPOSED BMP REVISIONS

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For OM-4, proposed changes anticipated to date include combining OM-3 and OM-4 into one BMP (OM-3) to clarify activities and remove duplication, while retaining all of the activities previously contained in the two BMPs.
The Industrial Source Control Division (ISCD) in BES is conducting most of the activities related to this BMP.

**KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)**

- Inspected, sampled, and administered the permits for 136 industries (and associated tenants) with stormwater discharge to the MS4. Continued to perform annual compliance inspections and additional inspections, if warranted, to provide technical assistance or assess BMP implementation.

- Continued to perform inspections and evaluate the need for stormwater permits for non-permitted industries in the MS4 and outside the MS4. Performed 167 inspections during permit year nine. Identified BMPs at these industries to minimize or remove exposure of industrial activities to stormwater. Required eight facilities within the MS4 and five outside the MS4 to apply for a stormwater permit.

- Collected and analyzed 29 samples from 26 permitted industries. In addition, conducted a monitoring and sampling program at a selected outfall basin to evaluate the long-term impact of the Industrial Stormwater Program. Monitored three storm events in this effort.

- Reviewed 216 industrial files and evaluated impacts on the storm sewer system. Based on the file review, 121 facilities had no identified impact on the storm sewer system, 25 were out of business, 13 were issued stormwater permits, and 39 were issued “no exposure certifications.” Information in the database was updated, and inspections performed as needed. Eighteen of these facilities remain under review.

- Continued to use GPS to map private outfalls to receiving streams from all inspected industries located in the riparian area and to identify the sources that drain to these outfalls.

- Continued to implement a project to identify and map all outfalls in the Columbia Slough Watershed within the City and identify the source that drains to these outfalls, using GIS.

- Continued to re-inspect industries that were previously identified as having no exposure and were not required to apply for a permit. The inspections are conducted on a five-year cycle. Industries are now being issued a no exposure certification (NEC) in lieu of a permit. The program will allow the City to effectively track these facilities. It also requires facilities to notify the City and/or DEQ if site conditions...
change, resulting in exposure of industrial activities to rainfall and stormwater runoff. The facilities would then be required to apply for a permit. Of the ten industries that had a NEC expiring in FY 03-04, four were no longer in business. The City inspected the other six and reissued the NEC.

- The City’s industrial survey referred 103 sites to the Industrial Stormwater Program for further evaluation.

- Developed an internal draft of stormwater enforcement rules that will implement City Code provisions for industrial stormwater inspections and pollution complaints.

- Continued to implement activities in the following categories of industrial controls: wastewater discharge permits, accidental spill prevention plans, Pollution Complaint Program, Buildings Plan Review Section, and Fire Bureau’s SARA Title III facility review.

- Continued to implement the Columbia South Shore Wellfield Wellhead Protection Program and Reference Manual for the City of Portland (and also in effect in Gresham and Fairview). Portland’s program is administered by the Portland Water Bureau. Program requirements include structural and operational BMPs to reduce the occurrence of spills and minimize spill impacts. Over 1,000 businesses were surveyed to identify businesses that use regulated chemicals and have to comply with program. Phased-in requirements go into effect starting June 30, 2005. Outreach included public events, workshops, and partnerships.

- Administered 115 additional permits for facilities not located in the MS4. Most are permits for direct dischargers, although some discharge to the Port of Portland’s system or the Multnomah County Drainage District.

- Under the Eco-logical Business Program:
  - Continued to work with the Pollution Prevention Team and Automotive Advisory Group for the Portland metro region to certify automotive repair and service shops. By the end of permit year nine, a total of 28 shops were certified in the City of Portland.
  - upgraded the project website (www.ecobiz.org) to include helpful information and company links for sustainable products. Also created and completed a database used to assess and quantify pollution reduction efforts.
  - Implemented the Eco-logical Business Program for the landscape services sector. Developed a BMP guide and draft certification checklist. Conducted preliminary outreach to landscape designers and maintenance and installation contractors.
CHALLENGES AND SOLUTIONS

Resources continue to be stretched as the City has committed staff to assist in the source investigation efforts in support of the Portland Harbor Superfund Program. Staff continue to carry the pollution prevention and source control messages with the regulated commercial and industrial businesses. Staffing and funding limitations limit the capacity of some technical assistance and recognition programs.

PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)

- Continue to inspect all permitted industries in the City once per year, and conduct sampling as needed.
- Continue to inspect non-permitted industries discharging to the MS4 to evaluate the need for permits (approximately 150 per year).
- Continue certifications in the Eco-Logical Business Program with the Pollution Prevention Team and Automotive and Landscape Advisory Groups. The goal for permit year ten is to have 60 auto shops certified and to start the landscaping program with at least ten firms certified.
- Complete the stormwater enforcement rules, and modify code for industrial stormwater inspections and pollution complaints.
- Continue to map private outfalls in the Columbia Slough and Willamette River watersheds and identify the sources to these outfalls.
- Continue implementation of groundwater protection and stormwater BMPs and facility inspections for commercial and industrial facilities within the Columbia South Shore Well Field Wellhead Protection Area overlay zone, including education and outreach efforts to affected residents and businesses and one-on-one technical assistance to businesses to help them comply with program requirements.

PROPOSED BMP REVISIONS

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For IND-1, proposed changes anticipated to date include separating the existing BMP into two BMPs: IND-1 to address the Industrial Stormwater Management Program, and IND-2 to address education, outreach, and technical assistance. The wording will be changed to clarify that new industrial/commercial development is addressed under ND-2. In addition, non-stormwater discharges will be removed from IND-1 and addressed under ILL-1.
ILL-1 Continue spill prevention and response programs and activities to reduce the frequency and impact of spills to the MS4.

KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- Continued overseeing site investigation and remediation at contaminated industrial sites within the Columbia South Shore Wellfield Wellhead Protection Area. Installed ten additional monitoring wells in the central and eastern wellfield for groundwater level and quality characterization and monitoring.

- The Regional Spill Committee continued its coordination meetings, holding three during permit year nine.


- Evaluated and revised industrial and spill control BMPs as part of the 2004 Stormwater Management Manual update. The BMPs provide stormwater quality and quantity management requirements for new development and redevelopment.

- Conducted training for City staff on the BES spill response reporting hotline and staff response duties.

CHALLENGES AND SOLUTIONS

The balance of priorities between groundwater, stormwater, and drainage continues to be a significant citywide concern. Protection of groundwater is universally supported, however, and development of the UIC Management Plan will assist in this effort.

PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)

- Continue duty officer training sessions.

- Continue to provide absorbent boom to Portland fire boats for response actions.

- Continue to conduct internal training to City staff on the BES spill response reporting hotline and staff response duties.

- Continue to make external presentations about the BES spill response reporting hotline and staff response duties.

- Continue Regional Spill Committee quarterly meetings.
• Continue technical assistance to regulated businesses and general outreach to the public under the Columbia South Shore Wellfield Wellhead Protection Program.

• Continue Columbia South Shore Plan District reviews for appropriate control of hazardous materials.

• Continue sample collection for BMPs included in the UIC BMP manual.

PROPOSED BMP REVISIONS

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For ILL-1, proposed changes anticipated to date include combining ILL-1 and ILL-2 into one BMP (ILL-1) that encompasses illicit discharges, illegal dumping, spills, and non-stormwater discharges. This will eliminate confusion and duplication, while retaining all of the activities previously contained in the two BMPs.
ILL-2 Implement all elements of the Illicit Discharge Elimination Program to prevent, search for, detect, and control illicit discharges to the MS4; continue to evaluate existing properties and non-stormwater discharges.

The Illicit Discharges Elimination Program (IDEP) is conducted by the Spill Protection and Citizen Response Section within BES's Environmental Compliance Division (ECD) and the Industrial Source Control Division (ISCD).

KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY03-04)

- Conducted 389 outfall inspections.
- Added ten new outfalls (57, 58, 59, 60, 61, 61A, 62, 62A, 63, 64) following completion of the Columbia Slough Big Pipe. These outfalls were separated from the combined sewer basin to be storm-only discharges.
- Identified one illicit connection; correction has not yet been made.
- Continued revising the priority outfall list; currently tracking 115 outfalls.
- Continued dry-weather monitoring at all major outfalls during the summer sampling period; inspected/sampled all priority outfalls at least twice.
- Continued sampling the 19 non-stormwater discharges identified in the NPDES permit to determine their impact on the MS4. In permit year nine, completed monitoring work on four of the 19 activities listed in the permit; as of permit year nine, 17 of the 19 sampling categories have been completed. Sampling from permit year nine included:
  - Street wash water
  - Uncontaminated groundwater infiltration
  - Springs
  - Flows from riparian habitats
  (Also see BMP OA-1.)
- Continued to implement measures to limit impacts from non-stormwater discharges related to City operations (see BMO OM-4).
- Identified and corrected eight illicit discharges.
- Completed approximately 456 commercial and industrial building permit applications, and continue to improve the internal permit tracking systems to provide more accurate tracking in the future.
- Continued activities related to administering wastewater discharge permits; accidental spill prevention plans; the Pollution Complaint Program; the Buildings Plan Review Section; the Fire Bureau's SARA Title III facility review; SOLV events; Metro's
Recycling Information Center line; BES’s Solid Waste and Recycling Programs; and development controls, including plans review. Related actions included:

- The BES hotline number (823-7180) receives about 1,600 calls per year regarding pollution complaints, industry information, spills, seepage discharges, and agency referrals. This hotline is staffed 24 hours a day. During the past year, 311 after-hours complaint calls were registered. The duty officer responded on-scene to 57 complaint sites during after-hours actions.

- The City continues to comply with the intent of the State Toxic Materials Reduction Act by evaluating all new chemicals used in various City facilities.

- E-mailed “green tips” to all City employees monthly on topics such as hazardous waste disposal events, Salmon Safe celebrations, and the Green Show of Homes.

- The Pollution Prevention Group’s Industrial Projects Section (IPJS) processed ten new discharge authorization permits to mobile washers. These washers collect their wash water and discharge it to the sanitary sewer under BES’s authority. IPJS is also working to conduct additional outreach to mobile washers that operate in the Portland metropolitan area. This effort further reduces the potential to impact the storm sewer system.

CHALLENGES AND SOLUTIONS

Consistent citywide program coverage to control illicit discharges continues to be a challenge, but the effort will be moving forward with the comprehensive watershed planning effort.

PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)

- Complete code and administrative rule changes to the stormwater enforcement code.

- Begin scope and research on outfall ownership in Portland Harbor.

- Continue to implement the IDEP and develop a workplan and schedule; integrate results into the BES mapping system.

- Continue to evaluate pipe infiltration and inflow issues and groundwater-related non-stormwater discharges. Continue to identify sampling locations and methodologies. Continue non-stormwater sampling for remaining categories.

- Complete the non-stormwater discharge evaluation report, including evaluation and potential monitoring of new categories added in the renewed permit, including:
  - Clean-up wells
  - Aquifer storage and recovery (ASR) wells
- Well start-up discharges

• Continue to remove illicit discharges to the storm sewer system as they are identified during spill response, pretreatment, or stormwater permit inspections.

PROPOSED BMP REVISIONS

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For ILL-2, proposed changes anticipated to date include combining ILL-1 and ILL-2 into one BMP (ILL-1) that encompasses illicit discharges, illegal dumping, spills, and non-stormwater discharges. This will eliminate confusion and duplication, while retaining all of the activities previously contained in the two BMPs.
ND-1 Implement City Code Title 10: Erosion Control, which provides for a comprehensive, citywide erosion and construction site pollutant control program; provide training and other support as needed.

KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- Began erosion control monitoring of a new site that is actively under development in the Deerhaven subdivision.

- Drafted a proposal for quickly correcting minor erosion control violations in environmental zones.

- The Bureau of Parks and Recreation and the Bureau of Maintenance continued their commitment to erosion control education by training new employees on correct plants and techniques for erosion control. Parks staff continue to train new employees on erosion control methods used for construction and protection methods for existing infrastructure.

- For selected new single-family permit applications, implemented a pre-permit-issuance site meeting program, where the applicant’s team meets onsite to discuss erosion control and other sensitive site issues.

- Continued the regional awards program to reward outstanding erosion control efforts by builders and contractors. Participation includes local jurisdictions and sponsors such as the Association of General Contractors (AGC). Contractors were nominated by local inspection professionals. The third regional awards were presented in June 2004 to the top residential and “other category” builder or contractor.

- The Bureau of Development Services (BDS) conducted a total of 7,542 erosion control-related inspections in the following categories:
  - 2,539 pre-construction inspections
  - 658 interim compliance inspections (during construction)
  - 2,249 permanent erosion control measures inspections (at building final)
  - 2,096 final erosion control inspections (6 months after building final)

- Received and investigated 344 complaint calls through the erosion control hotline and directly to staff.

- Implemented and developed TRACS Site Complaint “SC” folder to enter erosion control complaints.

- Continued operation of the Soil Trader, which aided the beneficial reuse of over 350,000 yards of material. Other construction commodities, such as asphalt (crushed and rubble), concrete (crushed and rubble), woody debris, fencing, and boulders are also part of this reuse effort.
• Drafted a list of revisions to Title 10, focusing on regulations for larger sites with steep slopes and on sensitive areas and reducing plan review and inspection requirements for small, flat sites.

• Drafted new erosion control brochures to be distributed in the City’s Permit Center.

Used bioengineering and seeding to prevent erosion at Buckman Community Gardens during renovation and after construction. The garden is on a steep slope and the portions not in the actual garden plots are using the bioengineering and seeding to control erosion. Since Buckman Community Gardens is next to a school and adjoins a park, it provides public education on the need and use of these techniques to prevent erosion during and after construction.

CHALLENGES AND SOLUTIONS

With a comprehensive program instituted, the biggest challenge is the continuing integration of enhanced erosion control efforts into the existing City design, review, and inspection systems. This integration has been aided by developing and implementing new computer tracking programs and complaint response systems and by refining interbureau roles and procedures. Education of inspectors, contractors, and builders continues to be a challenge.

PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)

• Continue educating new employees about erosion control and pollution prevention.

• Complete update and modifications to the Erosion Control Manual and Title 10.

• Develop application information for permit applicants and outreach material for new inspectors, focusing on erosion control and pollution prevention measures during construction.

• Continue to modify permitting, contracting, and inspection processes for more effective erosion control enforcement, especially for pollutant control measures.

• Conduct a fourth annual regional awards program to reward outstanding erosion control efforts by builders and contractors. The fourth regional awards will be presented to the top residential and top "other category" builder or contractor in spring 2005. Provide additional outreach to and participation with public works permit contractors.

• Continue to evaluate the need for continuing education for contractors and City staff, and modify or develop curricula as needed.
• Monitor Deerhaven residential development for erosion control efforts in compliance with Title 10 regulations.

• In cooperation with Tri-Met, monitor livestake installation along the roadside of newly constructed North Expo Road to prevent erosion into the adjacent wetland.

PROPOSED BMP REVISIONS

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For ND-1, proposed changes anticipated to date include simplifying/clarifying the BMP description.
ND-2 Implement and refine stormwater management requirements for all new and redevelopment projects to minimize pollutant discharges and erosive stormwater flows. Evaluate and develop stormwater management requirements for existing development.

KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- The Stormwater Advisory Committee (SAC) completed stormwater management policy recommendations for transportation-related development and presented them to City Council.

- Continued to follow the workplan and schedule for implementing the SAC’s June 2002 report recommendations for new development and redevelopment.

Completed a new Bureau of Development Services (BDS) policy and procedure to expand BES’s authority to implement the Downspout Disconnection Program on small multi-family and commercial sites (<5,000 square feet of roof area) without requiring a plumbing permit.

Analyzed the current water quality storm (0.83 inches in 24 hours, NRCS Type 1A rainfall distribution), using a continuous model comprising rainfall data from the last 25 years. Implemented a new treatment goal of “90% of the average annual rainfall volume.” This resulted in new treatment standards for rainfall intensity and volume.

- Drafted the revised 2004 Stormwater Management Manual (SWMM). Some of the major revisions are:
  
  - A hierarchy must now be followed to determine the stormwater disposal point for a site. On-site infiltration is required to the maximum extent practicable (MEP) prior to any discharge off-site. On-site infiltration is further broken down into surface infiltration and underground injection, with surface infiltration required to the MEP.
  
  - Additional information is provided about rainwater harvesting systems and how stormwater management credit can be granted with the right combination of collection area, tank storage, and reuse rate. Continuous simulation models using Portland rainfall data were used to simulate the performance of rainwater harvesting systems to determine the percentage of average annual runoff volume that would be captured and used.
  
  - An appendix is added to explain the formulation of Portland’s pollution reduction storm intensity and volume, and the rationale for selecting the treatment of 90% of the average annual volume.
- Requirements related to underground injection control structures (UICs) are modified to be consistent with DEQ requirements. Pollution reduction requirements for streets and parking lots were increased, while pollution reduction requirements for rooftops were decreased. Information is added to guide an applicant through the State’s UIC registration process.

- Additional design details for streets are provided. New “Greenstreet” techniques that manage stormwater at the source are included.

- The process for analyzing current flow control standards was begun, and will be included in the September 2007 SWMM revision process.

- Added new requirements for sites modifying drainage connections (e.g., drywells converting to storm sewer connections) to ensure protection of waterways.

  • Implemented a stormwater management facility (SMF) inspection program for private stormwater management facilities. The inspection program will ensure that O&M plans are followed, provide technical assistance to ensure the facilities operate as designed, and assess effectiveness through field observations. The following activities were accomplished during FY 03-04:

    - Hired a permanent full-time employee in October 2003 to implement the program.

    - Completed a new temporary electronic database to house all pertinent information from the O&M plans, which will link to the City’s TRACS permitting system. Standardized business processes for entering the information. Entered information for 2,682 O&M Plans. Completed a hard-file system for the O&M plans.

    - Updated records and information for SMF sites.

    - Performed inspections at 205 properties, which included a total of 366 stormwater management facilities. Also assessed each entire site for stormwater issues as well as stormwater management facility review (e.g., waste storage practices, washing).

  • Developed a draft design guide for commercial stormwater reuse systems.

  • Developed draft design guidelines for use of porous pavement systems.

**CHALLENGES AND SOLUTIONS**

Multiple stakeholders and issues must be considered in developing stormwater management requirements for existing, new, and redevelopment. The SAC, which represents a wide spectrum of interests and expertise, continues to meet monthly to
review City actions and make policy recommendations. It has been a valuable asset by helping identify and promote potential management approaches. A number of bureaus participate in the SAC process, facilitating the coordination of issues and solutions. Extensive public outreach is also conducted as part of the two-year review and revision cycle for the SWMM. This input has helped clarify and streamline the SWMM so it better responds to user concerns, without reducing standards.

The ability to conduct annual inspections at all sites that are classified as industrial/commercial and have stormwater management facilities will be tested as the number of sites continuously grows. Staff will try to identify other ways to ensure maintenance is performed, including mailing information, possibly instituting reporting requirements, and incorporating inspections into other programs.

**PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)**

- Continue to work with the SAC to develop and refine stormwater management policies, including policies that address impacts from transportation rights-of-way, existing development, and revisions to the 2007 SWMM.

- Developed a workplan and began implementing the SAC’s June 2004 report recommendations for transportation-related development.

- Continue to modify City codes as needed to implement SWMM requirements and to support/facilitate innovation and resource protection in stormwater planning, design, and management.

- Complete a comprehensive analysis of current flow control requirements and policies. Recommend changes for the September 2007 SWMM revision.

- Continue to develop designs to address stormwater management issues for new and redeveloped streets. Construct and monitor demonstration projects, including pervious pavements (pervious concrete, asphalt, and paver blocks), street swales, and street planters.

- Continue the Stormwater Management Facility (SMF) inspection program for private facilities, including completion of a permanent database and development of enforcement resolution processes between the Bureaus of Development Services and Environmental Services. Additional activities include:
  - Conduct annual inspection for all sites classified as industrial/commercial.
  - Evaluate alternatives to address single-family sites, including mailings and inspections.
  - Develop procedures on enforcement of excavation.

- Begin the revision process for the next SWMM (to be implemented in September 2007). Some of the major revisions will include:
− Finalize design guidelines for use of porous pavement systems.
− For sites in the Columbia Slough that retrofit (voluntarily and/or as legally required) to meet the City’s wellhead protection rules, evaluate how the retrofits might meet SWMM requirements. Modify SWMM requirements as needed to maintain MEP.

PROPOSED BMP REVISIONS

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For ND-2, proposed changes anticipated to date include removing the reference to existing development in the BMP description, since this BMP category addresses new, not existing, development. Existing development will be addressed under STR-1 and other BMPs. Another proposed change is to remove reference to Title 10 in the BMP description, since enforcement responsibilities may be shifting.
STR-1 Structurally modify existing outfalls and the stormwater system to reduce pollutant discharges; modify on a selected basis, or as O&M occurs, or where failures occur.

KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- Continued to assess opportunities for water quality facilities in the City’s watershed planning process. Identified a current list of potential projects (both new and retrofits) in the Stephens Creek subwatershed.

- Began to consider the extent of water quality improvement to be included in the revised Public Facilities Plan.

- Began and substantially completed construction work on the Kelley Creek Confluence Project, which will provide habitat improvements to Kelley Creek at the confluence with Johnson Creek. BES has obtained an OWEB (Oregon Watershed Enhancement Board) grant to finish the design and construction of this project.

- Continued to provide in-kind services in coordination with the Multnomah County Drainage District (MCDD) and the U.S. Army Corps of Engineers to implement Section 1135 Program projects in the Columbia Slough. Continued instream construction of a meandering channel along seven miles of mainstem of the middle Columbia Slough and part of the upper Columbia Slough (NE 18th to NE 158th).

- Completed Phase II design of the NE 162nd (wetland restoration) stormwater outfall treatment facility.

- Replaced two culverts in Whitaker Slough and two culverts in Buffalo Slough. Designed a culvert replacement (bridge) over NE 33rd at Buffalo Slough in the Columbia Slough.

- Completed design of the SW 17th and Taylors Ferry Road water quality facility.

- Completed predesign, alternative evaluation and selection for the NE 92nd Avenue water quality facility. This facility will treat stormwater from a mixed-use drainage (commercial, industrial, and residential development and Columbia Boulevard, a high-volume road).

- Began restoration on a hillside wetland.
CHALLENGES AND SOLUTIONS

An ongoing challenge is coordination among various City programs (e.g., watershed, Public Facilities Plan, and CSO) to ensure that structural water quality facilities are evaluated and prioritized in a consistent manner and that water quality impacts are addressed in the design/construction of new and retrofitted flood control facilities. The integration of this BMP into BES’s watershed plans will assist in this effort.

PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)

• Continue to implement watershed facilities/resource plans that evaluate the NPDES listed major outfalls in the Fanno, Tryon, Columbia Slough, and Willamette Watersheds.

• Continue design work on CSO stormwater conveyance projects, which includes evaluating pollutant loading and water quality treatment options and opportunities within the individual CSO basins.

• Finish the design for a passive stormwater treatment facility in the Tryon Creek Watershed at SW Taylor's Ferry and 17th Avenue.

• Continue to provide in-kind services in coordination with MCDD and the U.S. Army Corps of Engineers to implement Section 1135 Program projects, including:
  - Continue habitat and native plant restoration efforts on Alice’s wetland.
  - Continue instream construction of a meandering channel along seven miles of mainstem of the middle Columbia Slough and part of the upper Columbia Slough (NE 18th to NE 158th).

• Continue design work on CSO stream separation diversion projects in the Tanner Basins, which includes evaluating pollutant loading and modeling storm systems to determine the feasibility of capturing the water quality storm event in the combined system. This evaluation will assess stormwater treatment options for areas where regional stormwater facilities are impractical because of steep slopes and clay soils.

• Move forward with the design, permitting, and construction of the Lents Interceptor/Johnson Creek Aggradation Project. This project will restore structural integrity to the 61-inch by 57-inch monolithic concrete pipe that is at risk of failure from impact or scour, by aggrading the stream, reconnecting the stream with the floodplain, enhancing flood storage, and reducing the energy of the stream through this reach.
PROPOSED BMP REVISIONS

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For STR-1, proposed changes anticipated to date include combining STR-1 and STR-2 into one BMP (STR-1) to clarify activities and remove duplication, while retaining all of the activities previously contained in the two BMPs. This includes clarifying that BMP activities apply to both the MS4 system and existing private development. In addition, the proposed rewording emphasizes implementation rather than development of activities.
STR-2 Review and modify existing design standards for drainage/flood control and water quality facilities to improve water quality. Implement and evaluate effectiveness of pilot projects demonstrating innovative technologies.

KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- Began design and implementation of 29 projects funded by a $1.6 million EPA grant for innovative stormwater projects. Grant-funded projects include implementation of the N. Gay Avenue Water Quality Friendly Street project, Cathedral Park and Oregon Zoo water quality facilities, Division Street/New Seasons swale, green street and school campus downspout retrofits.

- Continued design or review of several additional pilot projects, using Water Quality Friendly Streets design standards, including:
  - N. Gay Avenue pervious concrete project: four blocks of existing city streets.
  - SE Rex Street porous pavers: four blocks of existing city streets.
  - New Columbia (Hope VI) housing development: approximately 120 streetside swales and 30 filtration planters; 95 percent of impervious surface areas will be infiltrated completely onsite.
  - Lents III Local Improvement District: infiltration swales.
  - Streetside planters on SW Gaines Street in the South Waterfront development.

- BES and the Office of Sustainable Development continued to provide technical assistance and grant funding for projects that incorporate green building principles, including stormwater pollution prevention and management

- Constructed a new flow-through stormwater planter at the BES Water Pollution Control Laboratory in St. Johns to allow more accurate testing of the planter design.

- Retrofitted two streets - NE Siskiyou and SE Ankeny – with pilot projects (curb extension swales) as part of the Water Quality Friendly Streets effort. Tested the hydraulic performance of the Siskiyou installation.

- Tested the hydraulic performance of the Glencoe Rain Garden, a landscape infiltration basin managing runoff from more than .8 acre of road and parking lot.

- Constructed pilot projects to modify deep roadside ditches and rebuild them as porous shoulder infiltration swales:
  - 9100 SW Capitol Highway: 100 linear feet of swale
  - 6000 SW Haines St: 30 linear feet of swale

- Constructed a pilot project to modify deep roadside ditches and rebuild them as compost infiltration swales at 1900 SW Taylors Ferry Road (100 linear feet of swale).
- Continued to monitor previously constructed pilot stormwater management facilities for flow control and pollution removal, including the Russell Pond, Hamilton Ecoroof, Buffalo Slough PRF, Whitaker Pond vault/pond, Glencoe School swale, Multnomah Arts Center porous pavers, and NE 138th wet pond projects. (See OA1)

- Provided ongoing maintenance for the Brookside ecoroof project.

- Continued to research the benefits of ecoroofs, in cooperation with the Office of Sustainable Development (OSD) and others, and continued research into innovative stormwater management approaches in North America.

**CHALLENGES AND SOLUTIONS**

It is a continuing challenge to identify and fund retrofit opportunities within the existing drainage system. Available space is often limited for both new construction and retrofits. Other issues such as long-term maintenance responsibility and public acceptance can be barriers. Pilot projects will provide essential information about the effectiveness of streetside or converted swales, infiltration planters, planting strips, and creek daylighting for managing runoff, as well as about O&M needs.

**PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)**

- Complete construction on N. Gay Avenue and SE Rex Street, using porous pavement.

- Implement EPA grant projects.

- Work with OMSI to evaluate the potential to structurally correct portions of swales to improve performance and correct design flaws caused by Water Avenue.

- Identify, evaluate, and prioritize monitoring needs for innovative landscape/stormwater management approaches.

- Continue to test and analyze the water quality impacts of previously constructed infiltration swales.

- Continue work on the Lents 2040 urban renewal process.

- Monitor the Water Pollution Control Laboratory swales to evaluate and compare the water quality and quantity benefits of different ditch modifications.

- Monitor water quality and quantity benefits of a stormwater planter at George Middle School.
• Monitor the effectiveness of pollution reduction facilities at Deerhaven pond, NE 162nd pond, Buffalo Slough, Whitaker Pond, and the Hamilton ecoroof

• Monitor the water quality and quantity benefits of a pollution reduction facility to be constructed at the Tryon headwaters redevelopment site.

PROPOSED BMP REVISIONS

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For STR-2, proposed changes anticipated to date include combining STR-1 and STR-2 into one BMP (STR-1) to clarify activities and remove duplication, while retaining all of the activities previously contained in the two BMPs. This includes clarifying that BMP activities apply to both the MS4 system and existing private development. In addition, the proposed rewording emphasizes implementation rather than development of activities.
PS-1  Continue to review and modify City codes to minimize or mitigate impervious surfaces, maximize self-sustaining landscapes and vegetative cover, and minimize the need for pesticides and irrigation.

KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

The City continued to update Portland’s environmental land use planning and zoning program. Key activities included updating the City’s natural resource inventories and existing environmental zoning code to help protect the important functions provided by the City’s streams and riparian areas, wetlands, and other specified water bodies. This work is intended to contribute toward the City’s compliance with the Endangered Species Act and Clean Water Act, as well as with Oregon land use planning goals 5, 6, 7, and Title 3 of Metro’s Urban Growth Management Functional Plan.

- The update to the City’s natural resource inventories focuses on water bodies and riparian areas, as well as upland wildlife habitat. The riparian inventory update identifies important riparian features and associated functions affecting water quality, flow and hydrology, channel dynamics, microclimate, food web, and riparian wildlife habitat. The upland wildlife habitat component of the inventory evaluates vegetation patch size and configuration, proximity to water and other patches, and rare or critical habitats for species of concern. Once the inventory is completed, it will be used to help inform updates to Portland’s existing environmental zoning and Willamette Greenway programs, as well as to help set priorities for land acquisition, restoration efforts, technical assistance, and community education.

This year’s work continued refinement of the GIS tool and field work to improve the mapped location of streams and add streams that exist, but have not been previously mapped. The stream remapping project has resulted in revised stream centerlines for 288 stream miles and the addition of more than 100 miles of stream not previously mapped.

The project is also focusing on upgrading the vegetation data for use in updating the inventory. The City is mapping and classifying vegetation and cross-checking this information with year 2002 multi-spectral vegetation imagery.

- The City developed the River Renaissance Strategy. This project will establish guiding principles and policy direction to achieve the City’s River Renaissance Vision adopted in March 2001. One key element is direction on how to achieve Portland’s goals for a clean and healthy Willamette River and healthy tributary watersheds. This policy direction provides a basis for updating the City’s Comprehensive Plan goals and policies and for guiding a broad range of City programs and projects. The strategy includes recommendations for capital improvements, work plans for future planning projects, and proposals that could make some existing regulations easier to implement and more cost-effective. The planning process included extensive collaboration among bureaus and a significant
amount of community outreach. A draft plan was released for public review in summer 2004.

- The City has made progress in updating its environmental code. Working with community stakeholders, the City has developed code amendment proposals aimed at improving enforcement of environmental violations and making it easier to obtain permits to undertake resource enhancement projects. The Environmental Code Improvement Project is also addressing trails, stormwater outfalls, and landslide repair. The goal of this work is to make the regulations easier to understand and comply with, while also maintaining the City’s commitment to protect and conserve important natural resource values and functions.

- New guidance and regulatory documents were drafted for tree and landscaping requirements, including diversity standards, an enhanced tree list, design concepts, and a self-certification rule to ensure proper installation of landscaping.

- Code maintenance continued to progress, including:
  - Sites with CS and CM zoning that also have environmental overlays were exempted from the minimum building coverage requirement. This situation usually requires either an adjustment to minimum building coverage so development can stay out of the environmental area or an environmental review so the site can meet the building coverage requirement. It is hoped that exempting these sites from the minimum coverage standards will encourage development to stay out of the environmental overlay areas.
  - In the Accessory Home Occupations chapter, the reference to hazardous substances in environmental overlay zones was clarified. Since the chapter on hazardous substance regulation was removed from the Zoning Code in Code Maintenance 2003, this section needed to be modified to reaffirm and clarify the prohibition of use by an accessory home occupation of hazardous substances in excess of "consumer quantities" in the overlay zones.
  - In the Environmental Zones chapter, the reference to hazardous substances was clarified. Since the chapter on hazardous substance regulation was removed from the Zoning Code in Code Maintenance 2003, this chapter needed to be modified to reaffirm and clarify the prohibition on hazardous substances in excess of "consumer quantities" in the overlay zones.
  - Updated the flood risk area map in the Johnson Creek Basin Plan District to reflect the most recent flood data.
  - Deleted the potential flood hazard area map from the land division regulations and changed references to be consistent with the current FEMA 100-year floodplain definition.
– Modified the conditional use and conditional use master plan regulations to allow limited reductions in parking and moderate expansion of the exterior improvement area without triggering a land use review. Both of these changes were made to encourage conversion of parking lot landscaping to stormwater management facilities (which often requires the loss of a few parking spaces or expansion of the exterior improvement area) by allowing it without a conditional use review or conditional use master plan review, which are costly and time consuming.

– Continued developing administrative rules for stormwater enforcement.

– Regulatory improvement continued to progress, including:

**Policy Package #1**
- Reduced the minimum caliper of trees planted in non-residential zones from three inches to two inches. A similar reduction was enacted for parking lot trees (with minimum caliper size depending on the species of tree selected). Studies show that transplanting smaller trees results in a better survival rate and faster growth recovery. This produces healthier trees that will do a better job of stormwater recovery.

**Policy Package #2**
- Exempted groundwater wellfield improvements from the nonconforming upgrade requirement. This provides an incentive for property owners in the Columbia South Shore area to take the steps necessary to meet the City’s program to protect groundwater supplies, without also triggering non-conforming upgrades.

**Policy Package #3**
- Clarified the standards and requirements for property line adjustments (PLA) in environmental resource zones. The revisions help establish how PLAs can be done in environmental zones, ensuring that environmental resources such as stream channels are not further impacted through the PLA process.
  
  - Allowed modifications to lot size and dimensions as part of an environmental review. This allows projects to reduce lot sizes to provide greater protection of environmental resources.
  
  - Changed arborist definition. This change clarifies code to authorize who can determine the health of a tree.
  
  - Clarified common greens standards. Several changes have been made in the Land Division section to provide clarity in the standards for common greens. These revisions help encourage more common greens as a development option, potentially reducing the amount of paving,
especially for infill projects, and providing opportunities to treat stormwater through percolation with onsite features in the common green.

- Revised the tree preservation standards. Revisions have been needed since the standards were implemented in 2002. These changes should allow flexibility for mitigation and preservation.

- Revised Stormwater and Right-of-Way chapters to allow greater flexibility for providing stormwater and vehicle access within easements on small infill projects. This has the potential to reduce overall vehicle paving and encourage more efficient shared stormwater facilities.

- Modified Planned Development chapters. This has the potential to ease the regulatory requirements for proposing planned developments. Planned developments often propose a more efficient use of land and set aside larger areas for stormwater management and open space.

**CHALLENGES AND SOLUTIONS**

Conflicting or overlapping code requirements administered by different bureaus have sometimes impeded integrated landscape-based stormwater management approaches. Parks, the Bureau of Development Services (BDS), Planning, and BES are continuing to work cooperatively to find and correct these barriers. Land use issues are highly charged in Portland at this time. Balancing the preservation of water quality critical lands with Metro 2040 and City development density goals is an ongoing challenge.

**PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)**

- Begin implementation of the River Renaissance Strategy. The City plans to take the River Renaissance Strategy to City Council for approval in December 2004. Upon adoption, the bureaus will integrate the actions into their budget proposals for the next fiscal year. Actions will range from Comprehensive Plan/code changes to capital improvement projects, community involvement events, additional research and data gathering. The City will hire a River Renaissance Initiative Manager to coordinate implementation and the ongoing participation of City bureaus.

- Continue to work on code revisions to facilitate implementation of “green” stormwater solutions as opportunities occur through the regulatory improvement process.

- Continue progress on refining the significant natural resource inventory and on amending environmental codes to make them clearer and easier to use. This will also involve extensive coordination with state and local agencies and stakeholders to build relationships and ensure consistency across similar planning efforts.
• Continue technical review of zoning, special district, urban renewal area, and other City codes to identify opportunities to improve water quality.

• Continue to coordinate interbureau efforts on removing barriers to implementation of stormwater management projects.

• Release a public review draft that outlines a new approach for addressing environmental zone violations. This is intended to lead to faster resolution of "minor" environmental violations, including removal of any offending excavation, fill, or impervious surface and prompt replanting of the area.

• Finish and implement a tree and landscaping manual to provide guidance for applicants and developers in designing and installing improved landscaping that will provide enhanced stormwater management.

**PROPOSED BMP REVISIONS**

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For PS-1, proposed changes anticipated to date include reorganizing PS-1, PS-2, and PS-3 into two BMPs (PS-1 and PS-2) to clarify the activities and remove duplication, while retaining all of the activities previously contained in the three BMPs.
KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- The 2001 Oregon Legislative Assembly enacted legislation to expand the existing riparian property tax exemption program to include qualifying lands located within cities and urban growth boundaries. The legislation was a priority initiative of the Portland City Council, and is considered an important way to advance the goals of River Renaissance and the Clean River Plan. The property tax exemption provides a financial incentive for private landowners to maintain, preserve, conserve and rehabilitate riparian lands.

State law requires both cities and counties to adopt authorizing ordinances before riparian property tax exemptions are granted to qualifying landowners. Furthermore, the Oregon Department of Fish and Wildlife (ODFW) is required to promulgate administrative rules, and the Oregon Department of Revenue is required to prescribe application forms for landowners to use.

BES is working with officials of Clackamas, Multnomah and Washington Counties to facilitate authorization of the program. BES is also working with ODFW to develop intergovernmental understandings regarding technical assistance and compliance monitoring.

- Under BES’s Watershed Revegetation Program, many businesses and other private landowners participated in and helped fund revegetation projects on their properties and neighboring properties. The Revegetation Program is currently managing a total of 1,050 acres of both public and private property.

- Agreements were developed with some of the property owners participating in the Revegetation Program and other watershed-specific projects, where the owners will ensure that plantings are preserved and maintained.

- The Johnson Creek Watershed Group created conservation easements with property owners to preserve approximately 3.23 acres in environmental zones along Johnson Creek. The conservation easements will prohibit development and disturbance in environmental zones in perpetuity and will facilitate restoration and enhancement in these areas.

- The Johnson Creek Watershed Group coordinated with the City of Gresham on the Pleasant Valley Implementation Plan process to create urbanization plans for 1,500 acres in the Johnson Creek watershed that were recently annexed into the urban growth boundary. The plan calls for using green development practices for
stormwater management and 200-foot buffers around water bodies to protect and improve water quality.

- The Willamette Watershed Group, in cooperation with Portland Parks and Recreation, purchased 53.62 acres in Marquam Hill. This property is located in one of highest value natural areas in the southwest portion of the Willamette Watershed. The streams that cross this property are two of the relatively few open channels in the southwest hills, a rapidly developing residential area.

- The Kelley Creek Confluence Restoration Project was constructed to improve salmonid rearing and spawning habitat, increase flood storage, and improve the water quality of Kelley and Johnson Creeks. This project included removal of fill from the floodplain, re-meandering of the straightened and rock-lined channel of the former Kelley Creek, addition of riffle-and-pool habitat, and extensive riparian and upland revegetation.

- Invasives were removed and native plants were restored along the banks of Fanno Creek and tributaries to increase water infiltration and reduce erosion. Debris was cleaned up in Gabriel, Albert Kelly, and April Hill Parks.

- BES partnered with SOLV and Friends of Trees to coordinate natural area restoration programs for volunteers. SOLV, a statewide nonprofit group, worked on seven Team Up for Watershed Health project sites in Portland. The Team Up program recruited 845 volunteers, who contributed 9,311 hours during 41 restoration events. Projects were located on a mix of private and public property along streams and wetlands. Volunteers removed 92,350 pounds of invasive plants and planted 2,348 native trees and shrubs.

Friends of Trees activities during permit year nine included:
- Trained 70 natural area crew leaders, who volunteered a total of 4.85 hours to meet their training requirements, attending 25 natural area planting events.
- Provided education and outreach at 45 events with a total attendance of 21,000 people.
- Made 39 presentations to groups with a total attendance of 1,400 people.
- Mailed three newsletters, reaching over 4,000 people.
- Conducted two natural area plantings (with City of Portland sponsorship), one at Brookside Wetlands and the other at Forest Park. At the Brookside Wetlands event, 14 volunteers contributed 61.5 hours to install 325 trees on 1.5 acres. At the Forest Park event, 69 volunteers contributed 274 hours to install 900 trees on 1.75 acres.
The following actions were taken under watershed programs:

**Johnson Creek:**
- Purchased 3.03 acres of property within the floodplain.
- Planted 10,064 plants on 11,430 linear feet of streambank and 12 acres. This included 2,430 trees and 7,634 shrubs.

**Willamette River:**
- Purchased 53.62 acres of high-value natural areas in the Marquam Hill area.
- Planted 13,534 plants on 5,670 linear feet of riverbank and 52 acres. This included 4,259 trees and 9,275 shrubs.

**Columbia Slough:**
- Planted 41,572 plants on 12,050 linear feet of streambank and 48 acres. This included 18,467 trees and 23,105 shrubs.

**Tryon Creek**
- Planted 6,346 plants on 4,600 linear feet of streambank and 3 acres. This included 2,354 trees and 3,982 shrubs.

**Fanno Creek**
- Planted 15,347 plants on 10,760 linear feet of streambank and 7 acres. This included 5,510 trees and 9,837 shrubs.

Since the beginning of the permit, the City has purchased a total of 2,422 acres, including Metro open space acquisitions.

**CHALLENGES AND SOLUTIONS**

The passage of House Bill 3057: Riparian Tax Credit during the 2001 Oregon state legislative session creates provision for financial incentives for property owners that will assist in preservation of private riparian areas. The City and Multnomah County are in active negotiations to authorize property tax exemptions for riparian areas. Their progress is dependent on the commitment of time and resources by the Oregon Department of Fish and Wildlife to promulgate administrative rules and review riparian restoration and management plans. The City and County expect to conclude their work to adopt authorizing ordinances in late 2004. The partners may adopt the program conditioned on a specific level of commitment from the state, or in concert with an intergovernmental agreement between the City and state to provide the necessary administrative support.
The purchase and acquisition of property can protect water quality and other natural resources, but budget constraints can mean that funds are not available to purchase property from property owners who are willing to sell.

**PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)**

- Continue developing a plan to work with riparian and floodplain property owners within the Johnson Creek Watershed.

- Continue to purchase land for stormwater management and natural resource protection, and work with property owners to protect existing natural areas, including Parks Bureau acquisitions of 5 to 10 acres of greenspace.

- Continue watershed program plantings and purchases.

**PROPOSED BMP REVISIONS**

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For PS-2, proposed changes anticipated to date include reorganizing PS-1, PS-2, and PS-3 into two BMPs (PS-1 and PS-2) to clarify the activities and remove duplication, while retaining all of the activities previously contained in the three BMPs.
KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- The types of urban forestry activities have remained relatively constant since 1993, including tree maintenance, planting, preservation, and education. The Bureau of Parks and Recreation's Urban Forestry Division continues to implement the Urban Forest Management Plan.

- The Urban Forestry Division continued implementing the neighborhood Tree Liaison Program. Over 145 volunteers have been trained in the last eight years. In permit year nine, 35 volunteers were trained, and tree liaisons contributed over 4,500 hours of their time to promote proper tree care throughout the city. Some of the many successful projects include neighborhood pruning workshops, school ground cleanups, and tree plantings and tree care presentations to neighborhood associations.

- Urban Forestry partnered with the David Douglas School District and Parkrose High School to provide tree care service learning opportunities. During the 2003-2004 school year, 100 students volunteered 180 hours. The students pruned 35 trees and planted 14 new trees at various schools.

- Urban Forestry coordinated tree liaisons and community members to plant 14 large canopy trees in Portland neighborhoods during community tree plantings.

- Urban Forestry conducted three neighborhood tree walks to increase community awareness of trees and their benefits and to help homeowners select trees for their rights-of-way. The tree walks took place in the Irvington, Concordia, and Portsmouth neighborhoods. The tree walks are available on the Portland Parks & Recreation website.

- Urban Forestry funded Friends of Trees (FOT) to implement community tree planting, tree distribution programs, and public education and outreach work, including natural area restoration projects, street and yard tree plantings, and yard tree distributions.

(Note: BMP PS2 includes additional land protection and revegetation actions.)

CHALLENGES AND SOLUTIONS

Financing is always a challenge. One of the responsibilities of the Urban Forestry Coordinator is to secure grants and other funding. Funding for research may prove difficult to obtain, but potential agency partners are being sought.
PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)

- Conduct youth tree liaison programs with high school and middle school science classes.

- Review BES and other bureau specifications and standards to identify how bureaus can provide more tree planting on various types of City projects. This is especially important in light of the many temperature issues in most Portland waterways.

- Continue to implement the Urban Forestry Management Plan.

- Continue working with the Parks Bureau to review and revise the City’s approved street tree list to include more native trees. Implement demonstration projects that incorporate these trees, and evaluate survivability and stormwater benefits.

- Develop a volunteer-based street tree inventory with Portland State University to assess canopy cover from street trees, species composition, and potential stocking level.

PROPOSED BMP REVISIONS

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For PS-3, proposed changes anticipated to date include reorganizing PS-1, PS-2, and PS-3 into two BMPs (PS-1 and PS-2) to clarify the activities and remove duplication, while retaining all of the activities previously contained in the three BMPs.
KEY BMP ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- Continued to implement monitoring activities in accordance with the Stormwater Monitoring Plan.
- Prepared the annual monitoring report. (The monitoring report follows OA2, below.)
- Initiated development of BMP-specific summaries, including rigorous statistical analyses of monitoring results from demonstration projects.

CHALLENGES AND SOLUTIONS

Because of the numerous anthropogenic influences on stormwater quality, it is difficult to identify and quantify trends from the existing data set. Even data collected for structural BMPs (such as swales) shows substantial variability that will not allow identification of design elements to improve their pollutant removal effectiveness.

PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)

- Continue to implement and evaluate the Stormwater Monitoring Plan.
- Continue development of BMP-specific summaries of monitoring results from demonstration projects. The substantial variability, combined with a fairly small data set, may limit the statistical analyses.
- Continue to work with co-permittees, ACWA members, and other jurisdictions to coordinate and share stormwater monitoring data and, where possible, establish joint monitoring efforts.

PROPOSED BMP REVISIONS

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For OA-1, proposed changes anticipated to date include moving monitoring activities to a separate (new) BMP category called “Program and Environmental Monitoring (MON).” OA-1 will become MON-1: Continue to Implement the Stormwater Monitoring Plan.
KEY BMP ACCOMPLISHMENTS, PERMIT NINE (FY 03-04)

- Coordinated program activities through participation in the River Renaissance Management Team and Executive Committee. River Renaissance is a citywide, multi-objective initiative that coordinates and integrates multiple programs and projects aimed at protecting and restoring the Willamette River and its tributaries.

- Continued to work with external stakeholders (the Stormwater Advisory Committee, or SAC) to evaluate and modify stormwater management requirements. The SAC developed stormwater management policy recommendations for transportation-related development.

- Met regularly (generally monthly) with co-permittees to coordinate permit activities.

- Coordinated with other jurisdictions statewide through the Oregon Association of Clean Water Agencies (ACWA); participated as board member and on water quality, stormwater, and groundwater committees.

- Coordinated with numerous other City bureaus and jurisdictions to implement BMPs (as reported under the individual BMPs).

CHALLENGES AND SOLUTIONS

Managing and evaluating the stormwater program is challenging because of the numerous programs and jurisdictions involved, as well as the many external influences on stormwater quality. Using performance-based measures for non-structural BMPS provides a means of assessing program accomplishments.

PROJECTED MAJOR ACCOMPLISHMENTS FOR PERMIT YEAR TEN (FY 04-05)

- Work with the SAC to refine the Stormwater Management Plan and BMPs as part of the revised NPDES MS4 permit.

- Continue to work with co-permittees, City bureaus, and other jurisdictions and organizations to implement BMPs.

- Use monitoring data and other BMP effectiveness indicators to implement adaptive management and refine BMPs.

- Research stormwater management programs implemented by other jurisdictions.
PROPOSED BMP REVISIONS

In permit year nine, the City began to work on revising the BMPs in the Stormwater Management Plan (SWMP) to address new conditions of the renewed permit (issued in March 2004). This includes rewording, reorganizing, and updating the BMPs to clarify their intent and activities. For OA-2, proposed changes anticipated to date include moving monitoring activities to a separate (new) BMP category called “Program and Environmental Monitoring (MON).” The program evaluation element of OA-2 will become MON-2: Conduct Program Monitoring. Program coordination, management, and reporting activities will remain in the OA category as OA-1.
INTRODUCTION
The purpose of this monitoring report is to comply with Schedule B of Portland’s National Pollutant Discharge Elimination System (NPDES) municipal stormwater permit. The information documents stormwater quality monitoring activities conducted by the City of Portland and its co-permittees (hereinafter referred to as Portland) during permit year (PY) nine.

Prior annual monitoring reports submitted to the Oregon Department of Environmental Quality (DEQ) have included comprehensive quantitative and qualitative evaluations of the data gathered, including statistical analyses of several years of monitoring data. This ninth annual monitoring report has been condensed to provide a summary of the monitoring activities conducted by Portland in the past year and a brief discussion of the results. The compiled data are available on CD-ROM upon request. Detailed data evaluation, including statistical analysis and BMP-specific technical information, will be conducted as soon as sufficient data are available or the project has been terminated.

The monitoring report is organized into seven sections. This first section provides an introduction, background, and outline of the monitoring plan. The following six sections briefly summarize the objectives of each task of the monitoring plan and the accomplishments during the past year and in previous years that address the task objectives.

BACKGROUND
In 1996, the Oregon Association of Clean Water Agencies (ACWA), a consortium of cities and agencies, prepared a report called Analysis of Oregon Urban Runoff Water Quality Monitoring Data Collected from 1991 to 1996, which was a compilation and statistical analysis of available land use-based stormwater monitoring data for the state. The findings of that report indicate that stormwater quality for different land uses is reasonably well characterized by the existing data set, and that additional monitoring is not likely to significantly improve current knowledge in this area.

Based on these findings, and in an effort to answer new questions and increase the cost effectiveness of monitoring efforts, ACWA petitioned DEQ to allow modifications to the monitoring programs. Portland subsequently developed and proposed a new monitoring program, which DEQ approved on February 4, 1998.

Implementation of the revised monitoring program builds upon previous monitoring efforts and more effectively directs resources toward acquiring new information to improve stormwater management activities. To this end, monitoring objectives were
established and organized into six specific tasks that make up the stormwater monitoring program:

**Task 1:** Program Planning/ Annual Report/ Review of Existing Water Quality Data
**Task 2:** Construction Site Sampling
**Task 3:** Structural BMP Monitoring
**Task 4:** Comprehensive Stream Monitoring to Assess Stormwater Impacts
**Task 5:** Continued Stormwater Monitoring at Existing Land Use Stations
**Task 6:** Collaboration with Oregon DEQ and ACWA

The following sections list the respective tasks and their objectives and summarize the monitoring activities of the past year and previous years in a table for each task. Additionally, Table 1 summarizes the parameters analyzed at all monitoring locations during permit year nine. The data Portland collected during permit year nine are provided in table form on CD-ROM, available upon request.
### Summary of Parameters Analyzed During Permit Year 9

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<td><strong>BMP Program</strong></td>
<td><strong>Non-Stormwater Discharge Monitoring</strong></td>
<td><strong>Industrial Stormwater Monitoring</strong></td>
<td><strong>MAC Ecopavers Monitoring</strong></td>
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</tbody>
</table>

#### Type of Sample

- **Composite - Soil / Sediment**
- **Stream Cross Section Composite**
- **Time Paced Composite**
- **Flow Paced Composite**

#### Parameters

<table>
<thead>
<tr>
<th>Task 4: Comprehensive Stream Measurements</th>
<th>Task 5: Monitoring at Outfalls and Land Use Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flow Data</strong></td>
<td><strong>Flow Data</strong></td>
</tr>
<tr>
<td><strong>Continuous Temperature Data</strong></td>
<td><strong>Continuous Temperature Data</strong></td>
</tr>
<tr>
<td><strong>Rainfall Data</strong></td>
<td><strong>Rainfall Data</strong></td>
</tr>
</tbody>
</table>

#### Task 4: Comprehensive Stream Measurements

**CONVENTIONALS**

- Biological oxygen demand (BOD5)
- Chemical Oxygen Demand (COD)
- Conductivity
- Dissolved Oxygen (DO)
- Particle Size Distribution
- pH
- Temperature
- Total Dissolved Solids (TDS)
- Total Solids (TS)
- Total Suspended Solids (TSS)
- Total Volatile Suspended Solids (TVSS)
- Turbidity

**OIL AND GREASE**

- Diesel
- Gasoline
- Heavy oil
- Non-Polar hydrocarbons
- Polar hydrocarbons
- Total Petroleum Hydrocarbons

**TOTAL METALS**

- Aluminum (Al)
- Arsenic (As)
- Cadmium (Cd)
- Chromium (Cr)
- Cobalt (Co)
- Copper (Cu)
- Iron (Fe)
- Lead (Pb)
- Manganese (Mn)
- Mercury (Hg)
- Nickel (Ni)
- Pewter (Sn)
- Silver (Ag)
- Zinc (Zn)

**DISSOLVED METALS**

- Arsenic (As)
- Cadmium (Cd)
- Chromium (Cr)
- Copper (Cu)
- Iron (Fe)
- Lead (Pb)
- Manganese (Mn)
- Mercury (Hg)
- Nickel (Ni)
- Pewter (Sn)
- Silver (Ag)
- Zinc (Zn)

**NUTRIENTS**

- Nitrate-Nitrogen (NO3)
- Nitrite-Nitrogen (NO2)
- Ammonia-Nitrogen (NH3)
- Total Kjeldahl Nitrogen (TKN)
- Total Phosphorus (TPO4)
- Chlorophyll a
- Total Organic Carbon (TOC)

**BIOCHEMICAL**

- Nutrients
- Fecal Coliform
- E. Coli
- Salmonella

**BIOLOGICAL**

- TOXICS

---

1. X = Grab Samples; O = Composite Samples
2. Lower case indicates sediment samples.
3. Lower case indicates bioswale infiltrate samples.
4. Ultra-Clean
5. Varies by site and event
TASK 1 PROGRAM PLANNING/ANNUAL REPORT/REVIEW OF EXISTING WATER QUALITY DATA

Objectives
Task 1 has several objectives. The first objective is to compile and interpret stormwater data collected as part of watershed monitoring efforts and other monitoring studies such as the Illicit Discharges Elimination Program and the monitoring of non-stormwater discharges. The second objective is to prepare reports to evaluate data results with respect to stormwater management. The third objective is to review the monitoring program annually and prepare the annual monitoring report.

Accomplishments
To address the first objective described above, Table 2 summarizes the monitoring activities Portland completed under this task during permit year nine. To address the second objective, monitoring-related technical reports or brochures are being developed to evaluate how effectively various BMPs reduce pollutants in stormwater discharges. Development of these reports depends on the availability of sufficient data that allows for a rigorous statistical analysis. Preparation of this ninth annual monitoring compliance report addresses the third objective.

Table 2
TASK 1 - SAMPLING ACTIVITIES FOR PERMIT YEAR NINE

<table>
<thead>
<tr>
<th>Sampling Program</th>
<th>Number of Sampling Locations</th>
<th>Type of Samples</th>
<th>Sampling Frequency</th>
<th>Sampling Dates</th>
<th>Follow-up Investigations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illicit Discharges Elimination Program (IDEP)</td>
<td>115 priority outfalls, incl. 10 former CSO outfalls</td>
<td>Grab</td>
<td>Minimum two times; Total of 389 outfall inspections</td>
<td>July 2003, August 2003, June 2004</td>
<td>Identified and corrected eight illicit discharges</td>
</tr>
<tr>
<td>Non-Stormwater Discharges</td>
<td>4</td>
<td>Grab</td>
<td>One time</td>
<td>7/21/2003, 12/4/2003, 12/15/2003, 5/2/2004</td>
<td>N/A</td>
</tr>
<tr>
<td>Industrial Monitoring</td>
<td>1</td>
<td>Composite</td>
<td>Three storm events</td>
<td>9/16/2003, 01/22/2004, 03/24/2004</td>
<td>N/A</td>
</tr>
</tbody>
</table>

1 See Table 1 for parameters analyzed.
2 IDEP has maintained a similar level of monitoring each year since 1994.
3 The types of non-stormwater discharges that were monitored were: street wash water, swimming pools, residential car washing, irrigation water, rising groundwater, groundwater infiltration, pumped groundwater, diverted stream flows, springs, and flows from riparian/wetland habitat. Types of non-stormwater discharges that were monitored in past years include fire-fighting activities, lawn watering, landscape irrigation, irrigation water, foundation drains, crawl spaces, diverted stream flows, and flows from riparian habitats and wetlands.
4 The Industrial Stormwater Program has maintained a similar level of monitoring in each of the previous two years.
TASK 2 CONSTRUCTION SITE SAMPLING

Objective
The objective of Task 2 is to conduct construction site monitoring to evaluate the impact of local construction sites on stormwater quality and evaluate the effectiveness of construction site BMPs.

Accomplishments
Table 3 summarizes the monitoring activities completed under this task during permit year nine.

Table 3
SUMMARY OF CONSTRUCTION SITE SAMPLING ACTIVITIES

<table>
<thead>
<tr>
<th>Sampling Sites1</th>
<th>Permit Year (PY) 1-8 Number of Events Monitored</th>
<th>PY 9 Number of Events Monitored</th>
<th>PY 9 Sampling Dates</th>
<th>PY 9 Range of Event Rainfall Volumes (inches)</th>
<th>PY 9 Type of Samples Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deerhaven</td>
<td>0</td>
<td>2 storm water 1 sediment</td>
<td>4/19/04 5/26/04 6/24/04</td>
<td>0.26 0.69 N/A</td>
<td>Grab &amp; Composite</td>
</tr>
</tbody>
</table>

1 See Table 1 for parameters analyzed.

Results
The Deerhaven structural erosion control treatment train consists of a Stormceptor™ and erosion control pond. Construction at the Deerhaven subdivision started in PY 9. Flow and pollutant concentrations were monitored at the inlet and outlet of the treatment train, which allows evaluation of this treatment train concept. Sediment accumulated in the pond was sampled and analyzed. Finally, the Stormceptor™ inlet monitoring station serves as a residential land use monitoring site. A brief discussion of the data is included in Task 3.
TASK 3  STRUCTURAL BEST MANAGEMENT PRACTICE (BMP) MONITORING

Objective
The objective of Task 3 is to conduct monitoring to evaluate the effectiveness of existing and new BMPs to reduce pollutants in discharges and better manage stormwater.

Accomplishments
Table 4 summarizes the monitoring activities completed under this task during permit year nine.

<table>
<thead>
<tr>
<th>BMP Sampled1</th>
<th>Number of Sampling Locations</th>
<th>Permit Year (PY) 1-8 Number of Events Monitored</th>
<th>PY 9 Number of Events Monitored</th>
<th>PY 9 Sampling Dates</th>
<th>PY 9 Range of Event Rainfall (inches)</th>
<th>PY 9 Type of Samples Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffalo Slough PRF</td>
<td>2 storm water 1 sediment</td>
<td>8 storm events; 3 sediment</td>
<td>2 storm events; 1 sediment</td>
<td>12/2/03 12/4/03 6/23/04</td>
<td>0.26 0.93 N/A</td>
<td>Grab, Composite &amp; Sediment</td>
</tr>
<tr>
<td>NE 138th Ave. PRF</td>
<td>1 storm water 1 sediment</td>
<td>5 storm events 2 sediment</td>
<td>3 storm events; 1 sediment</td>
<td>11/19/03 3/25/03 5/27/04 6/24/04</td>
<td>1.23 0.16 0.27 N/A</td>
<td>Grab, Sediment</td>
</tr>
<tr>
<td>Whitaker Ponds PRF</td>
<td>2 storm water 2 sediment</td>
<td>5 storm events; 2 sediment</td>
<td>3 storm events; 1 sediment</td>
<td>12/2/03 12/16/03 1/28/04 6/23/04</td>
<td>0.23 0.10 0.52 N/A</td>
<td>Grab, Composite &amp; Sediment</td>
</tr>
<tr>
<td>Russell Pond Bioswale</td>
<td>2 storm water 1 infiltrate</td>
<td>7</td>
<td>2</td>
<td>12/2/03 1/28/04</td>
<td>0.27 0.92</td>
<td>Grab5,4 &amp; Composite</td>
</tr>
<tr>
<td>Hamilton Ecoroof</td>
<td>2 storm water</td>
<td>8</td>
<td>2</td>
<td>11/25/03 1/29/04</td>
<td>0.27 0.21</td>
<td>Grab</td>
</tr>
<tr>
<td>Deerhaven Erosion Control</td>
<td>2 storm water 1 sediment</td>
<td>0</td>
<td>2 storm water 1 sediment</td>
<td>4/19/04 5/26/04 6/24/04</td>
<td>0.26 0.69</td>
<td>Grab &amp; Composite</td>
</tr>
<tr>
<td>Multnomah Art Center Ecostone Pavers</td>
<td>2 storm water</td>
<td>3</td>
<td>1</td>
<td>10/9/03</td>
<td>0.12</td>
<td>Grab</td>
</tr>
<tr>
<td>Glencoe School Rain Garden</td>
<td>5 soil</td>
<td>0</td>
<td>1</td>
<td>6/24/2004 N/A</td>
<td>N/A</td>
<td>Soil Core composite</td>
</tr>
<tr>
<td>Outfall 55A PRF</td>
<td>2 storm water</td>
<td>0</td>
<td>3</td>
<td>11/18/2003 2/6/2004 3/18/2004</td>
<td>1.34 0.29 0.06</td>
<td>Grab &amp; Composite</td>
</tr>
</tbody>
</table>

Table 4
SUMMARY OF STRUCTURAL BMP SAMPLING ACTIVITIES
Results
Below is a brief discussion of all BMP monitoring activities that occurred during PY9. Technical reports will be prepared for all BMPs to summarize, discuss, and evaluate all data collected. Some of these reports will be very site-specific and others will help developers and engineers select and design the most appropriate BMPs for site-specific stormwater problems. The preparation of these reports is pending the collection of sufficient data for a rigorous statistical analysis for ongoing projects. Completed projects will be evaluated subject to availability of staff resources.

Buffalo Slough PRF
Through PY9, ten storm events have been sampled and four sediment samples have been collected from the Vortechnics® unit. The effluent-only sampling continued in PY9. Effluent concentrations of some total metals in PY9 were above chronic ambient water quality standards and NPDES 1200-COLS benchmarks, even though substantial amounts of pollutants were removed with the settled sediment. Concentrations of potentially bioavailable metals, on the other hand, were fairly low.

NE 138th Ave. PRF
Through PY9, five storm events have been sampled and three sediment samples have been collected from the wet pond. Sediment samples are collected in the forebay, and during the last two permit years, stormwater samples were collected at the outlet from the wet pond. Effluent concentrations of all metals in PY9 were below chronic ambient water quality standards and NPDES 1200-COLS benchmarks.

Whitaker Ponds PRF
Through PY9, eight storm events have been sampled and three sediment samples have been collected from the vault/wetland treatment train system. In PY9, only effluent samples were collected. Effluent concentrations of most metals in PY9 were above chronic ambient water quality standards and NPDES 1200-COLS benchmarks, even though substantial amounts of pollutants were removed with the sediment that settled out in the sediment vault and wetland pond.

Russell Pond Swale
Through PY9, inlet and outlet samples from nine storm events have been collected. In addition, nine infiltrate samples from a perforated pipe below the swale were collected. While the reduction in pollutant concentration is small, the pollutant load reduction is substantial because a large amount of the flow infiltrates into the ground. Pollutant
concentrations in the effluent are, with few exceptions, below chronic ambient water quality standards. Infiltrate samples indicate the soil underlying the swale is highly effective in removing pollutants. This project was discontinued at the end of PY 9.

_Hamilton Ecoroof_
Through PY 9, effluent samples from the west and east side of the ecoroof from ten storm events have been sampled. The east roof, which has a thinner substrate than the west side, has mostly lower effluent concentration than the west roof. Investigations are still ongoing as to whether these observed differences are from the difference in substrate material or substrate thickness. The volume of stormwater retained on the west roof is significantly higher than on the thinner east roof.

_Deerhaven Structural Erosion Control Treatment Train_
During PY 9, inlet and outlet samples from two storm events were collected. In addition, sediment accumulated in the erosion control pond was sampled. While the stormwater sampling is inconclusive it appears that suspended solids and total metals were removed. This is corroborated by the sediment accumulating the pond.

_Multnomah Arts Center Pavers_
One grab sample each was collected at an inlet grate and from a perforated pipe at the base of the drain rock underlying the pavers. Median concentrations of suspended solids and some total metals appear to have decreased. This project was discontinued during PY 9 because it was deemed to not meet the standards for BMP effectiveness studies.

_Glencoe School Rain Garden_
A baseline investigation was conducted by collecting composite soil samples from the forebay and four cells of the rain garden to a depth of five inches. The soil was analyzed for the most common pollutants in stormwater, including copper, lead, zinc, and petroleum hydrocarbons.

_Outfall 55A PRF_
Effluent samples at two sedimentation manholes were collected to evaluate their effectiveness in protecting Wapato wetland, a sensitive discharge area. Concentrations of most metals were reduced to below the chronic water quality standard. The project was concluded at the end of PY 9.
TASK 4 COMPREHENSIVE STREAM MONITORING TO ASSESS STORMWATER IMPACTS

Objective
The objective of Task 4 is to conduct comprehensive in-stream stormwater monitoring to evaluate stormwater impacts associated with the chemical, biological, and physical characteristics of receiving waters.

Accomplishments
Table 5 summarizes the monitoring activities completed under this task during permit year nine.

Table 5
SUMMARY OF STREAM MONITORING ACTIVITIES

<table>
<thead>
<tr>
<th>Sampling Locations</th>
<th>Permit Year (PY) 9 Number of Sites Monitored</th>
<th>PY 9 Number of Events Monitored</th>
<th>PY 9 Sampling Frequency</th>
<th>PY 9 Type of Samples Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willamette River</td>
<td>12 ²</td>
<td>12</td>
<td>Monthly</td>
<td>Grab, Composite &amp; Continuous</td>
</tr>
<tr>
<td>Balch Creek</td>
<td>2</td>
<td>12</td>
<td>Monthly</td>
<td>Grab</td>
</tr>
<tr>
<td>West Side Streams</td>
<td>3</td>
<td>12</td>
<td>Monthly</td>
<td>Grab</td>
</tr>
<tr>
<td>Columbia Slough</td>
<td>9</td>
<td>12</td>
<td>Monthly</td>
<td>Grab &amp; Continuous</td>
</tr>
<tr>
<td>Johnson Creek</td>
<td>8</td>
<td>12</td>
<td>Monthly</td>
<td>Grab</td>
</tr>
<tr>
<td>Kelley Creek</td>
<td>5</td>
<td>3</td>
<td>Irregular</td>
<td>Grab</td>
</tr>
<tr>
<td>Fanno Creek</td>
<td>1</td>
<td>26</td>
<td>Weekly (May-Oct)</td>
<td>Grab &amp; Continuous</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>6</td>
<td>Monthly (Nov-Apr)</td>
<td>Continuous</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
<td>Monthly</td>
<td>Grab</td>
</tr>
<tr>
<td>Tryon Creek</td>
<td>1</td>
<td>12</td>
<td>Monthly</td>
<td>Grab</td>
</tr>
</tbody>
</table>

¹ See Table 1 for parameters analyzed.
² East bank, center and west bank grab samples at 4 locations; composite samples at same 4 locations

Results
Data collected in all watersheds are currently being evaluated and incorporated into watershed management plans. This data assessment, as well as proposed TMDLs for some watersheds and parameters, form the basis for actions to improve overall watershed health that will be proposed as part of the watershed plans.
TASK 5  CONTINUED STORMWATER MONITORING AT EXISTING LAND USE STATIONS

Objective
The objective of Task 5 is to continue to conduct land use characterization monitoring at four existing stations in order to assess trends.

Accomplishments
Table 6 summarizes the monitoring activities completed under this task during permit year nine.

Table 6
SUMMARY OF LAND USE SAMPLING ACTIVITIES

<table>
<thead>
<tr>
<th>Land Use Stations¹</th>
<th>Permit Year (PY) 1 – 8 Number of Events Monitored</th>
<th>PY 9 Number of Events Monitored</th>
<th>PY 9 Sampling Dates</th>
<th>PY 9 Range of Event Rainfall Volumes (inches)</th>
<th>PY 9 Type of Samples Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1 – NE 122nd Street (Mixed)</td>
<td>33</td>
<td>3</td>
<td>9/9/03</td>
<td>0.27</td>
<td>Grab &amp; Composite</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2/23/04</td>
<td>0.31</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5/26/03</td>
<td>0.47</td>
<td></td>
</tr>
<tr>
<td>R4² - Deerhaven (Residential)</td>
<td>0</td>
<td>2</td>
<td>4/19/04</td>
<td>0.26</td>
<td>Grab &amp; Composite</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5/26/04</td>
<td>0.69</td>
<td></td>
</tr>
</tbody>
</table>

¹ See Table 1 for parameters analyzed.
² The inlet to the Deerhaven erosion control facility is considered to be a residential land use monitoring site, but the drainage area will most likely exhibit some mixed land use characteristics until the subdivision is fully built out. The pond had will also been functioning as an erosion control monitoring site until build-out occurs.

Results
None of the storm events sampled during PY 9 had a rainfall volume above the water quality storm. One summer, one winter, and three spring events were sampled at two stations. The results are within the range of results observed previously and do not show any statistically significant trends.
TASK 6  COLLABORATION WITH OREGON DEQ AND ACWA

Objective
The objective of Task 6 is to continue to coordinate/collaborate with state and local jurisdictions (e.g., DEQ, ACWA) to share information, minimize duplication of efforts, and try to determine if benchmarks can be recommended.

Accomplishments
The City of Portland attended and participated in ACWA’s stormwater subcommittee. The City also actively participated in collaborative efforts to establish TMDLs in Johnson Creek, the Columbia Slough, and the Lower Willamette River. Specifically, city staff participated in technical committees to assist DEQ with the scientific analysis of collected data and the preparation of draft TMDL documents.
MONITORING COMPLIANCE REPORT PREPARATION

For more information regarding Portland’s stormwater monitoring program or the results that are provided in this report, contact either:

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Regulatory and Policy Section
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or

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Section III

MULTNOMAH COUNTY
Multnomah County
Municipal NPDES Annual Report for Permit Year 9
City of Portland and Co-Permittees
 Permit #101314
 November 1, 2004

MULTNOMAH COUNTY STORMWATER MANAGEMENT PROGRAM

Summary

Multnomah County implements a comprehensive stormwater management program countywide. The goal of the program is to reduce pollutants in stormwater runoff to the maximum extent practicable. The program is maintained and prioritized in response to federal Clean Water Act requirements and the County’s responsibility to protect the health and welfare of its citizens.

Multnomah County continues to implement an active Stormwater Management Program throughout its jurisdiction, including those areas outside of NPDES permit areas. The BMPs reported here however, apply only to the few remaining activities the County continues to engage in within the permit area.

Midway through permit year seven, Multnomah County transferred the last remaining zoning and planning authority within the permit area to the City of Portland as part of the Multnomah County-Portland Compliance Project to achieve the goals of, and comply with, Metro’s Urban Growth Management Functional Plan. Up until January 1, 2002, the County had limited land use planning jurisdiction for several small unincorporated pocket areas, this is no longer the case.

The County Transportation Division continues to retain authority to review stormwater management plans, granting a handful of permits every year to access County road ditches for limited stormwater discharge within the unincorporated pockets. Staff reviews plans that detail the stormwater runoff effects of development and redevelopment. Discharge from the undeveloped parcel is calculated and only that volume is permitted for access to County road drainages, which are operated and maintained by the City of Portland to Portland NPDES BMP standards under an Intergovernmental Agreement (IGA) known as the Westside Maintenance Agreement. Through the IGA, the City of Portland operates and maintains all 18.76 miles of County dedicated roads and drainages within the permit area. Under the agreement the County retains responsibility to perform emergency repairs resulting from flooding and landslides. In addition, the County continues to own, operate and maintain several of the Willamette River Bridges.
GENERAL BEST MANAGEMENT CATEGORIES

Second Permit Term BMP Categories Used in Permit Year 9:

(1) Public Involvement and Education (PI);
(2) Operations and Maintenance (OM);
(3) Illicit Discharges Control (ILL);
(4) New Development Standards (ND);
(5) Structural Controls (STR);
(6) Planning/System Preservation and Development (PS); and
(7) Other Activities (OA)

Public Involvement and Education (PI). These activities are designed to support a comprehensive stormwater management and watershed wide public participation program. The Best Management Practices (BMPs) in this category include: Regional Coalition for Clean Rivers and Streams, Watershed Councils, Education Materials, Staff Training and Education, Adopt-A-Road Program, Storm Drain Marking, Ensure Public Involvement-Capitol Improvement Plan and Program, and Report Illegal Dumping.

Operations and Maintenance (OM). These activities provide pollutant reduction controls for County Operations and Maintenance. The BMPs in this category include: Inspect and Maintain Storm Conveyance System, Street Sweeping Program, Disposal of Road Waste Materials, Minimize Use of Sanding Materials, County Truck Hauling Practices, Culvert Maintenance Program, Maintain Road Shoulders, and Ditch Cleaning/Ditch Maintenance.

Illicit Discharges Control (ILL). These activities reduce the frequency and impact of accidental non-stormwater discharges and controls illicit discharges and improper waste disposal. The BMPs in this category include: Work with Regional HAZMAT Teams, Private Truck Hauling Practices, County Contractors’ Truck Hauling Practices, Require Detention Systems with Proper Connection, Identify and Investigate Illicit Connections, Spill Prevention and Response Program, Ensure Contractors’ Damages are Addressed, and Discharges of Construction Wastes.

New Development Standards (ND). These activities provide standards to reduce pollutant discharges from new and redevelopment. The BMPs in this category include: Transfer of Urban Land Use Planning Authority, Grading Permits and Hillside
Development Permits, Enforcement of Setback Requirements, and Drainage Standards for New Development.

Structural Controls (STR). These activities reduce pollutant discharges in Multnomah County drainage and flood control facilities. The BMPs in this category include: Design of Capitol Improvement Project Stormwater Quality Treatment Facilities, Retrofit of Existing Drainage and Flood Control Facilities, Facilities Design in Road Construction Projects, Review Existing Design Standards for Drainage, Inventory and Map of the Municipal Stormwater Separate Sewer System, and Constructed Wetlands.

Planning/System Preservation and Development (PS). These activities are designed to reduce pesticide use and encourage use of self-sustaining vegetation to help improve water quality. The BMPs in this category include: Selectively Use Herbicides/Pesticides, Use of Self-Sustaining and Native Vegetation/Tree Planting Programs, and Landscape in Right-of-Way Projects.

Other Activities (OA). Other Activities include other ongoing program activities and reporting that ensure pollutant discharge reduction to the maximum extent practicable. The BMPs in this category include: Develop and Manage the Stormwater Program, Assess and Evaluate the BMP Program, and Record-Keeping & NPDES Field Records.

Program Activities and County Accomplishments: Best Management Practices (BMPs) Applied in the Portland Permit Area

- **Public Involvement and Education (PI)**
  The County's participation in public involvement and education activities is limited due to the small amount of unincorporated land and associated residents within the Portland NPDES permit area. The County is represented through its co-permittee status by the City of Portland’s efforts with the “Regional Coalition for Clean Rivers and Streams.” The residents in the permit area are informed of impacts to the storm drainage system through the Coalition’s educational efforts via mass media (radio, movie ads, newspaper) and direct mailing. County staff are encouraged to attend and participate in stormwater workshops and meetings sponsored by the City and other local agencies. County representatives attend Watershed Council meetings and actively participate on several regional committees as part of the public involvement element.

- **Operations and Maintenance (OM)**
  The County contracts with the City of Portland for operation and maintenance of County owned roadways and associated storm drainage facilities in the unincorporated pockets of land within the Portland Urban permit area. Computerized inventories of drainage
and road appurtenances are maintained by both organizations. The County remains responsible for emergency flooding and landslide road repairs. The County Bridge Section maintains several of the Willamette River Bridge structures.

- **Illicit Discharges Control (ILL)**
  The county implements several BMPs that target potential sources of illicit discharges to the MS4 or surface waters directly. The County Transportation Emergency Response and Bridge Programs utilize training, inspection and maintenance practices to prevent non-stormwater discharges.

- **Structural Controls (STR)**
  New or retrofit facilities within the County’s Capital Improvement Plan (CIP) include consideration of structural stormwater quality facilities within the Portland permit area.

- **New Development Standards (ND)**
  The County transferred its zoning and land use planning responsibility for the unincorporated urban pockets, within the permit area to the City of Portland. This was a result of the Multnomah County-City of Portland Compliance Project. Up until the second half of the permit year seven, the County reviewed plans for new private development/redevelopment in the unincorporated portions of the Portland permit area, which were largely residential (e.g., Dunthorpe area in Southwest Portland), but no longer. The County utilized the same stormwater design guidance used area-wide by design professionals. However, the County still maintains review and permitting authority for stormwater management and discharge into the County owned right-of-way in these unincorporated pockets. Discharge from the undeveloped parcel is calculated and only that volume is permitted for discharge to County road ditches - all other stormwater must be retained on site. The County continues to implement its construction bond program, which ensures financial recovery for damage to County right-of-way or associated drainage facilities, including erosion damage.

- **Planning/System Preservation and Development**
  Due to the County’s transfer of zoning and planning authority to the City of Portland pursuant to the Metro Urban Growth Management Functional Plan, the BMP under this category has been reduced to include the review of use of pesticides and herbicides in the County right-of-way.
• **Other Activities (OAs)**
The County implemented several other activities (OAs) required by the NPDES regulations to ensure the proper management and success of the program. In general, they include:

- Participating in the development and negotiation of the NPDES Permit conditions;
- Developing and executing intergovernmental agreements (IGAs) with the other permittees;
- Overseeing modifications to the stormwater management plan and NPDES permit conditions on behalf of the County;
- Compiling and reviewing internal reports;
- Writing and submitting the annual compliance report;
- Coordinating and communicating with the other permittees and the City;
- Attending and facilitating meetings;
- Liaison with DEQ;
- Overall budget and schedule tracking; and
- Providing regulatory and BMP stormwater updates to staff.

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**Functional Groups**

Managers and staff in the Multnomah County Department of Business and Community Services, Transportation and Land Use Planning Divisions, implement the Stormwater Management Program. The Team includes Transportation Division Managers, Road Maintenance District Supervisors, the County Engineer, the County Emergency Management Administrator, the Planning Director, and other County staff. To ensure efficient implementation, each team member belongs to a ‘functional group’ responsible for specific BMPs, as described below.

Functional Group assignments were given to the Implementation Team to ensure active participation by the necessary staff. Assignments were made by matching appropriate staff to the BMPs directly relating to their duties. For example, the staff Engineer responsible for reviewing stormwater facility design is in the DESIGN functional group, while the staff Engineer responsible for overseeing road building contracts is in the
CONSTRUCTION functional group. The nine functional groups are:

- Road Maintenance
- Bridge Maintenance
- Construction
- Design
- Education
- Emergency Response
- Land Use Planning
- Transportation Planning
- Right-of-Way Permits
- Compliance
Functional Group Accomplishments: Permit Year 9

Road Maintenance

General NPDES Roles and Responsibilities for Permit Year 9:

The Road Maintenance section of the County Transportation Division will utilize established road maintenance procedures specifically relating to stormwater quality management. Staff will document maintenance procedures through the Stormwater Maintenance Manual and field logs and ensure that problems found in the field relating to stormwater quality and stormwater facilities are addressed.

Key Accomplishments for Permit Year 9:

- The City of Portland by agreement, maintains County owned roads and associated facilities within the permit area.

Bridge Engineering & Maintenance

General NPDES Roles and Responsibilities for Permit Year 9:

The Bridge section of the County Transportation Division utilizes bridge maintenance procedures to protect water quality and address stormwater management. The group ensures through design of new projects and review of contractors’ plans that stormwater and Best Management Practice (BMP) structural controls are considered and properly designed for Capital Improvement Program projects.

Key Accomplishments for Permit Year 9:

- The Bridge Section incorporated water quality treatment facilities during a bridge restoration project on the Broadway Bridge.
- Purchased and utilized vacuum system in conjunction with concrete core drilling equipment to prevent concrete slurry from entering the stormwater conveyance system.
- Sustainable construction waste and re-chargeable battery recycling practices were implemented within the Bridge section.

Construction

General NPDES Roles and Responsibilities for Permit Year 9:

County Engineering/Construction Group

Key Accomplishments for Permit Year 9:

- The Road Construction functional
ensures through plan checking, education of contractors, specification interpretation, pre-construction meetings, and rigorous inspection and monitoring, that stormwater controls are properly considered, installed, and maintained as part of all public Capital Improvement Projects. Stormwater controls include structural and non-structural techniques and practices, which will result in reduced pollution.

Education

General NPDES Roles and Responsibilities for Permit Year 9:

Multnomah County’s responsibility for stormwater quality education is two-fold. Public education roles are important but are primarily the City of Portland’s NPDES responsibilities for incorporated areas. This change occurred due to the accelerated group does not routinely have any activity within the permit area. The City of Portland by agreement, maintains and operates County owned roadways within the permit area.

- Engineering Design in conjunction with Right-of-Way continued to review a handful of development requests in the unincorporated pockets that had the potential to impact drainage facilities in the County right-of-way.

Design

General NPDES Roles and Responsibilities for Permit Year 9

County Engineering/Design Group ensures through design of new projects and review of contractors’ plans that stormwater and Best Management Practice (BMP) structural controls are considered and properly designed for Capital Improvement Program projects. They will promote a balance of stormwater quality and quantity (flood control) to the Maximum Extent Practicable in considering stormwater facility design.

Key Accomplishments for Permit Year 9:

- The Road Design functional group does not routinely have any activity within the permit area. The City of Portland by agreement maintains and operates County owned roadways within the permit area.

Key Accomplishments for Permit Year 9:

- “Don’t Pollute – Protect Our Water” curb decals were designed in Spanish as well as in English which will be placed on catch basins draining to surface waters as well as groundwater. Sites will be selected based on the potential
annexation of SE Portland in 1995. Moreover, the County lost additional jurisdictional responsibility with completion of the Multnomah County-Portland Compliance Project this year. Personnel training within the County Transportation and Land Use Divisions is still important, and is more extensive. Training includes initiating activities to educate and inform County staff about the sources and solutions to stormwater program issues.

• Transportation and Land Use Planning staff participated in a custom tailored erosion and sediment control workshop conducted by a private consultant for engineering and road maintenance activities.

• Transportation and Land Use Planning staff participated in a Vegetation Management BMP workshop geared towards the use of native plants in the right-of-way and for rural residential.

• Facilities and Property Management and Transportation staff received OSHA certified First Response Operations Level training for County employees who have responsibility for responding to emergencies to the operations level as first responders to chemical releases.

• Functional Group Team members attended water quality related seminars.

• Distributed water quality related brochure series to public at County offices.

• Members of the Regional Coalition for Clean Rivers and Streams re-engaged the media campaign “Is your lawn chemical free? Maybe it should be.” The materials were aimed to inform citizens that the use of pesticides and herbicides on lawns can harm people, pets, and the health of the
region’s waterways. Advertising materials were used to develop posters, brochures, bus tail boards, newspaper advertisements, and movie screen advertisements. Educational materials were distributed throughout the Metro area in the Spring to coincide with the seasonal upswing in lawn and gardening activities.

- Clean Water Act and Safe Drinking Water Act regulatory updates provided to the NPDES Implementation Team.

- Endangered Species Act Compliance and Enforcement presentation provided to staff by National Marine Fisheries enforcement officer.

Emergency Response

**General NPDES Roles and Responsibilities for Permit Year 9:**

County Emergency response personnel will ensure water quality concerns are addressed during emergency procedures. In particular, staff consider how to prevent materials from reaching the Municipal Separate Storm Sewer System (MS4). Staff will continue to raise awareness of emergency response personnel (in road maintenance group) to ensure general water quality concerns are addressed. Participate in regional Committees addressing these concerns to assure necessary coordination between agencies.

**Key Accomplishments for Permit Year 9**

- Revised County Emergency Spill Response Plan to coordinate all responses of chemical spills at County facilities or on roads and bridges. All County responders will follow the plan. This will improve the efficiency of response and increase the safety of the responders.

- Expanded Emergency Response service providers with the addition of RMCAT Environmental Services, Inc., as well as with NRC Environmental Services Company (formerly Foss Environmental) to handle all hazardous materials spills quickly and safely.
Sampled and tested road waste materials to ensure proper disposal and avoid surface and ground water pollution.

County Emergency Response manager continued close working relationship with key agency partners, including DEQ water quality spill response manager, to assure quickest possible response.

County Emergency Response manager continued to sample and test road waste materials from catch basins prior to disposal.

Reviewed training procedures for County road maintenance staff and administrative staff in quick response to emergency calls regarding spills in right-of-way including proper use of absorbent pads and booms and recorded individual response activities.

Spill response kits added to County Facilities in addition to Road Maintenance supervisor’s trucks.

Land Use Planning and Transportation Planning

General NPDES Roles and Responsibilities for Permit Year 9:

County Planning staff will ensure stormwater quality management and maintenance practices are considered in land use zoning and permit requirements and applications. In particular, they will enforce land use zoning and permit requirements that may impact stormwater quality. Staff will determine whether land use planning procedures are in

Key Accomplishments for Permit Year 9

The County completed transfer of zoning and land use planning authority in the Portland Permit Area, January 1, 2002. (PY 7)

Initiation of the Transportation System Plan project for unincorporated areas. Stormwater considerations will incorporated and provided to public in permit
place to encourage sound environmental principles relating to water quality Significant Environmental Concern zones.

The County relinquished zoning and land use planning jurisdictional responsibility with completion of the Multnomah County-Portland Compliance Project pursuant to the Metro Urban Framework Functional Plan.

Right-Of-Way Permits

General NPDES Roles and Responsibilities for Permit Year 9:

County Right-of-Way Permits Section will ensure stormwater pollution controls are considered and incorporated into permits for private and public construction projects that attach to and are in the County right-of-way. Staff will specify erosion control requirements through contractor bonding for public right-of-way projects. Staff will ensure that maintenance is conducted for life of project and immediate future.

Key Accomplishments for Permit Year 9

- Required utility companies and private contractors operating in the public right-of-way to implement pollutant and erosion control measures such as weep-drains, culvert/ditch inlets, silt socks, biobags, or hay bales.

- Continued to provide information and clarification of truck hauling practices to avoid stormwater pollution.

- In the unincorporated areas of the County a cash deposit is required for any temporary construction access connection to a County right-of-way to ensure that water quality is protected and concerns are addressed.

- Ensured plan specifications for contractors included measures to address erosion and sediment control during construction
Compliance

General NPDES Roles and Responsibilities for Permit Year 9:

The Compliance Group is responsible for overall Program Development and Management, Program Assessment and Evaluation, and Program Compliance Reporting.

Key Accomplishments for Permit Year 9:

- Right-of-way inspectors continued to monitor activities within the right-of-way and to report concerns to the appropriate maintenance or enforcement section.

- Provided program management and implementation coordination with County Staff.

- Attended Co-Permittee Management Committee meetings and DEQ meetings relating to the Portland NPDES Co-Permit.

- Provided Endangered Species Act, Underground Injection Control, and Clean Water Act regulatory update and relationship to the NPDES program to Implementation Team members.

- The County through OACWA further participated in a BMP Effectiveness Project for Stormwater management.

- Coordinated reporting activities with City of Portland, as lead permittee.

- Enhanced automated reporting database to better capture functional group activities.
Best Management Practices (BMPs) and Other Activities (OAs): Accomplishments

Annual Compliance Reports for the Municipal NPDES Stormwater Permit are required to include information relating to each BMP task and schedule. The following matrices provide this information, in summary form, for each BMP. More detail is available upon request through documentation in the Multnomah County Transportation Division of the Department of Business and Community Services. In general, all BMP tasks are on schedule without modification. Modifications occurring due to the Multnomah County – Portland Compliance Project and/or road transfers are noted and explained. The following matrix provides the following information:

√ A short description of the Best Management Practice, with BMP Number.

√ The overall intent, goals and objectives of the Best Management Practice.

√ The Multnomah County ‘Functional Group(s)’ designated as responsible for BMP Implementation.

√ Key accomplishments for Permit Year 9.

√ Assessment of Controls.

√ Any proposed modifications or changes to the schedule or activities.
### Best Management Practices (BMPs) Matrix for Permit Year 9

<table>
<thead>
<tr>
<th>Best Management Practice</th>
<th>Overall Intent, Goals and Objectives</th>
<th>Functional Group(s) for BMP Implementation</th>
<th>Key Accomplishments for Permit Year 9</th>
<th>Assessment of Controls</th>
<th>Proposed Modifications to Schedule or Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>PI1. Participate in the Regional Coalition of Clean Rivers and Streams. Continue support and direct participation for public involvement and public education campaigns.</td>
<td>These activities are designed to support a comprehensive stormwater management and watershed wide public participation program. (PI)</td>
<td>Public Affairs Office</td>
<td>• Members of the Regional Coalition for Clean Rivers and Streams reengaged a media campaign, “Is your lawn chemical free? Maybe it should be.” The materials were aimed at addressing lawn care practices and their impacts on the health of people and pets as well as fish and water quality. Advertising materials were used to develop posters, brochures, bus tail boards, newspaper advertisements, and movie screen advertisements. Educational materials were distributed throughout the Metro area Spring 2004 to coincide with the seasonal upswing in lawn and gardening activities. • The Coalition’s web site has been updated to reflect the County’s current web link.</td>
<td>• Notes of meetings. • Participation in the coalition and evaluation of the campaign.</td>
<td>On Schedule No Modification.</td>
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| P12. Participate in local watershed councils and their activities. Present information to public regarding Multnomah County programs and regulation, particularly water quality program. | Educate the public about the County’s role in protecting stormwater quality and the opportunities for public participation in pollution prevention as well as public involvement and education on stormwater pollution problems by working with the local watershed councils. In addition, educate the County staff about the public’s role in protecting water quality on a watershed-wide basis. | Compliance | • County staff participated on the Johnson Creek Watershed Council Action Plan Technical Advisory Committee representing issues related to the upper reaches of the watershed.  
• The County also sits on the Johnson Creek Interjurisdictional Committee and the Lower Willamette Agricultural Water Quality Management Area Advisory Committee which developed water quality rules for agricultural practices under the authority of Senate Bill 1010.  
• Presentation to the Friends of Fairview Creek relating to county road engineering project and solicitation for comments.  
• County Staff briefed elected officials and staff on watershed issues and programs. | • Staff reports on attendance and actions. | On schedule.  
Need to increase County participation at the numerous watershed councils within the County. |
| P13. Promote public education and involvement in stormwater pollution prevention efforts through distribution of brochures and educational materials at County offices and public water quality meetings. | Provide information to educate and inform the public about stormwater pollution problems, and to encourage public involvement in stormwater pollution prevention programs. | Compliance  
Public Affairs Office,  
Transportation Division, and  
Land Use Planning Division. | • Salmon Festival 2003 where county staff presented water quality and fish habitat issues related to the county transportation system and efforts to address.  
• Continued to provide watershed enhancement materials and best management fact sheets in County planning office.  
• Green Roof Conference – Case study Presentation & Tour regarding the Multnomah County Building which has been retrofitted with a green roof to address roof runoff volume as well as water quality filtration of roof top discharge. Water quality is enhanced due to the sequestration of particulate matter associated with atmospheric deposition.  
• The Water Quality Program and regulatory update presented to the Board of County Commissioners. | • County staff evaluates educational products and efforts. | Compliance, Land Use Planning, Public Affairs Office in partnership with the Multnomah Soil and Water Conservation Districts are preparing water quality and Riparian Habitat public outreach materials geared towards property owners in the rural areas of the county where the bulk of the county’s jurisdiction remains. |
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| P14. Train and educate appropriate Multnomah County personnel about impacts of on-the-job activities to the MS4, and how to minimize impacts to receiving streams. Include erosion control seminars, stormwater maintenance activities, inspection practices, construction BMPs, and other activities for in-house and field personnel. Include training and education relating to water quality learned in conferences. | Through training of County staff, minimize/eliminate the impact of on-the-job activities to the MS4 and stormwater quality. All functional Groups | The County Personnel participated in extensive educational activities throughout the permit year. Some of those events include:  
- DEQ Presentation - Voluntary Clean Up - Legal Requirements associated with hazardous and toxic waste remediation.  
- ODOT Environmental Workshop for Local Government Agencies – Update on environmental permitting including Army Corps fill removal permits, NOAA requirements, and basic permitting triggers.  
- U.S. Army Corp of Engineers Regulatory Programs overview of program jurisdiction and associated regulations. In depth coverage of Corp authority behind its regulatory programs.  
- Endangered Species Act – Major legal, technical and policy issues and strategies. Focus on recent developments in the application of the ESA including: Recent federal policies on Salmon Recovery Planning, How to respond to ESA and Clean Water Act Goals and responses from various sectors.  
- Water Quality program orientation and water policy review to Transportation, Sustainability, Vector, and Public Affairs and Facilities and Property Management staff.  
  - Office and Field Measures for Preventing & Controlling Erosion training provided by private consultants.  
  - Construction Demolition Recycling Training First Responders ‘Operations Level” training for employees who have responsibility for responding to chemical spill emergencies. | Evaluation of training and County NPDES program ongoing.  
- Staff consulted to evaluate efforts.  
- County NPDES program designed for adaptive management to react and implement necessary changes. | On schedule. No modification |
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<td>PI4. (BMP PI4 report continued)</td>
<td>Through training of County staff, minimize/eliminate the impact of on-the-job activities to the MS4 and stormwater quality.</td>
<td>All Functional Groups</td>
<td>• Endangered Species Act Compliance – National Marine Fisheries presentation ESA on prohibitions of taking threatened or endangered species. • Vegetation Management BMP workshop provided by private consultant. • West Nile Virus protection program coordination between Vector Control and Road Maintenance program for storm water facility treatments. • Precautionary Principal Workshop on toxics and pollution prevention • NW Oregon Invasive Species Weed Management Group – weed management BMPs considering water quality impacts. • Environmental Management Report of Event Training provided to Bridge section personnel. • Oregon Association of County Engineers and Surveyors Conference- “Mitigating Natural Resource Impacts” – Information relating to BMPs for bridge projects. • Road Maintenance crews attended ODOT Roads Scholar Series Environmental BMP’s II. The Environmental BMP’s course presents an overview of environmentally friendly vegetation management and erosion control methods. Best management practices associated with vegetation control activities such as mowing, brush cutting, and spraying are discussed along with related issues such as spills and use of personal protective gear. The discussion on erosion and sediment control for highway maintenance activities defines what it is, covers the reasons when it is needed, identifies the causes of erosion, and addresses various best management practices. Special situations such as large maintenance projects and emergency situations are discussed.</td>
<td>Evaluation of training and County NPDES program ongoing. Staff consulted to evaluate efforts. County NPDES program designed for adaptive management to react and implement necessary changes.</td>
<td>On schedule. No modification</td>
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<td>PI5. Continue to implement the Multnomah County Adopt-A-Road program to promote public awareness of litter control and impacts to roads and waterways. Increase use of volunteers and track work by volunteers, including County inmate work crews.</td>
<td>Educate the public regarding the storm water pollution that results from littering. Work with citizen action programs to facilitate efforts to reduce littering.</td>
<td>Road Maintenance</td>
<td>• BMP not implemented in the Portland permit area. However, Many Adopt-A-Road events held during the permit year to pick up trash, reduce access of solids to the stormwater system, and educate the public on the connection between clean stormwater and litter. • All County roads operated and maintained by IGA with Portland. • BMP implemented throughout unincorporated County jurisdiction.</td>
<td>• Field log entries and recording of events. • Review of field logs. • Kept records of public meetings attended. • Kept records of litter pickup activity</td>
<td>Revise to reflect limited or no implementation in Portland Permit area.</td>
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<td>PI6. Participate in storm drain stenciling and other signage programs to promote public awareness of the importance of keeping pollutants out of storm drains.</td>
<td>Reduce/eliminate the illicit discharges into street storm drains to protect water quality by reducing illicit discharges and impact by the public. Educate the public about drainage ways, impacts to streams from storm sewer systems, and watershed awareness.</td>
<td>Road Maintenance</td>
<td>• BMP not implemented in the Portland permit area. The county does not have storm street drains in the Portland permit area. • Inside Gresham permit area, Staff reviewed new storm drain marker design and application technology for anticipated program in PY10. Markers will be in Spanish and English – “Don’t Pollute Protect Our Water” and placed in high density residential areas with high potential for stormwater contamination.</td>
<td>• Will monitor for durability and reduction in solid and liquid quantities in catch basins.</td>
<td>Revise to reflect limited or no implementation in Portland Permit area.</td>
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<td>PI7. Ensure public involvement during two-year update process for Capital Improvement Plan and Program that addresses stormwater quality impacts and issues. Identify NPDES drainage issues and remedies on Capital Improvement Plan project scope sheets. Include in project atlas during public review process</td>
<td>Improve public awareness of properly designed stormwater facilities’ ability to remove pollutants and protect water quality.</td>
<td>Transportation Planning</td>
<td>• CIP process and subsequent public involvement process began for Sellwood Bridge rehabilitation project which incorporates Stormwater water quality treatment facilities. Public Involvement will continue into PY 10. • General Open Houses were held to present the Transportation CIP and provide and opportunity to gather and consider public comment. • Transportation System Planning was initiated during PY9 for county owned roads within the unincorporated portions of the Permit area. Public Involvement will be coordinated during PY 10. • Incorporated “Green Street” standards into the Functional Classification overlay for new County Road projects.</td>
<td>• Tracked attendance in meetings and actions needed. • Maintained records of public meetings that the County facilitated</td>
<td>No modifications. On Schedule</td>
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| PI8. Facilitate efforts to report illegal dumping of pollutants, trash, or illegal fill (dirt/soil). Work with citizen and neighborhood groups, and post signs at areas where illegal dumping may occur that encourage citizens to report incidents. | Control illicit discharges from illegal dumping to protect water quality. | Emergency Management Right-of-Way Nuisance | • Emergency Response Coordinator responded to reports from Road Maintenance and Right-of-Way Inspectors of illegal dumping within the right-of-way and properly disposed of materials through NRC Environmental Service and RMCAT Environmental Services, Inc., outside of permit area.  
• The Nuisance/ Vector Control web page provides information on how to report illegal dumping throughout the County. | • Field log or report-of-event report.  
• Review of field logs and BMP data base. | No modifications. |
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<td><strong>Pollution reduction controls for County Operations and Maintenance (OM)</strong></td>
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| **OM1. Inspect and maintain inlets, catch basins, sumps and stormwater conveyance system on a regular basis. Identify any known non-stormwater discharges and follow up as necessary.** | Ensure that inlets, catch basins, sumps and stormwater conveyance system are maintained in a manner that reduces pollutants to the maximum extent practicable. Continue to review and revise operations and maintenance procedures as appropriate. | Bridge Maintenance Road Maintenance | • Catch basin storm filters inspected and maintained routinely on Burnside Bridge Filters changed annually.  
• Revised Road Maintenance and Operations Manual (RMOM) to update procedures road maintenance BMPs.  
• Updated daily field logs that track each Road Maintenance activity to more accurately reflect actions taken and actions needed. | • Quantities of roads waste materials are logged and recorded. | On schedule. No modification |
| **OM2. Continue to implement a street sweeping program to include scheduled sweeping, equipment review, and training on a regular basis. Revise and update schedule, equipment, and training as necessary.** | The objective of the street sweeping program for county roads is to reduce materials on the roadway and impacts to the stormwater system. The County will continue to review and revise the program and schedule and make improvements as appropriate. | Road Maintenance | • BMP not implemented in the Portland permit area. County roads operated and maintained by agreement with Portland. | • Not applicable. | Revise to reflect limited or no implementation in Portland Permit area. |
| **OM3. Continue to investigate identification of proper sites for disposal of road waste materials. Record amounts and location of material disposed. Include street sweeping collection, catch basin cleaning, sump cleaning, etc. Test for disposal using an independent lab and record/file test results. Review different disposal procedures for street sweeping vs. Vactor pad materials. Continue to investigate feasibility of decant facility for County waste materials. Work cooperatively among County divisions to reduce water quality impacts of site handling, storage, and disposal areas for material collected during road maintenance activities. Review and, if appropriate, adopt DEQ/ODOT Road Waste Management Practices.** | The objective of the road waste disposal operations for county roads is to reduce materials on the roadway and impacts to the stormwater system. The goal is to identify and implement practices for disposal of road waste materials that protect water quality. Determine if current outdoor storage activities are contributing sediments to stormwater runoff. Recommend practices to control discharges as needed. | Road Maintenance | • The County secured a new contract with TPS Technologies in Tacoma WA for incineration of road waste material.  
• Continued investigation and coordination of regional decant facility siting and funding opportunities.  
• Road Maintenance staff used multiple cleaning and maintenance field logs to document and track these activities.  
• Emergency Response Coordinator reviews protocols and coordinates disposal of road waste materials. | | No modifications. |
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<td>OM4. Investigate the potential to reduce use of sanding materials for seasonal and anti-icing operations. Continue testing of alternative anti-icing methods and materials (e.g., CMA). Prohibit the use of salt or glycol on the roadways. Collect sanding material distributed during anti-icing events as soon as feasible. Continue collection and recycling of sand (anti-icing material) throughout the County’s portion of the permit area.</td>
<td>Reduce harmful effects of roadway anti-icing activities and materials on water quality by proper sand collection methods and by prohibiting the use of glycol and salt.</td>
<td>Road Maintenance</td>
<td>• BMP not implemented in the Portland permit area. County roads operated and maintained by IGA with Portland.</td>
<td>• Not applicable.</td>
<td>Revise to reflect limited or no implementation in Portland Permit area.</td>
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<td>OM5. Review County truck hauling practices with field crews annually. Recommend revisions (if necessary) to limit occurrence of leaks, spills, or other releases. Revise operations and maintenance manual as necessary to reduce potential pollutants. Continue to test and evaluate asphalt release agents for truck and tool cleanup, which use “environmentally-friendly” products.</td>
<td>Control discharges from truck hauling activities to the extent that they are impacting County right-of-way (ROW) and/or the Municipal Separate Storm Sewer System (MS4).</td>
<td>Road Maintenance</td>
<td>• Implemented use of Bio-diesel in all County Road Maintenance vehicles • Held training for Bridge and Road Maintenance Crews on Vacuum truck hauling practices. • Bridge and Road Crews are regularly briefed on proper operations procedures.</td>
<td>• Review of Road Maintenance and Operations Manual reporting. • In-house truck driving training includes precautions to reduce stormwater pollution from truck practices.</td>
<td>No modifications.</td>
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<td>OM6. Continue culvert maintenance program to inspect and maintain culverts in ways that minimize impacts to water quality. Consider opportunities to retrofit culverts to provide better water quality treatment. Continue to maintain culvert inventories. Make distinction as to whether culverts are fish passage culverts and adhere to appropriate maintenance procedure.</td>
<td>Determine if the frequency of current operation and maintenance practices allows for reduction of pollutants to the maximum extent practicable. Improve and retrofit as needed.</td>
<td>Road Maintenance (Transportation Division)</td>
<td>• BMP not implemented in the Portland permit area. County roads operated and maintained by agreement with Portland.</td>
<td>• Not applicable.</td>
<td>Revise to reflect limited or no implementation in Portland Permit area.</td>
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<td>OM7. Maintain right-of-way and road shoulders in ways that avoid and prevent future adverse water quality impacts. Review slide repair procedures in the Multnomah County Road Maintenance Operations Manual (RMOM). Continue review of current maintenance practices.</td>
<td>The purpose of this BMP is to control and reduce the amount of sediments discharged to the receiving waters via the right-of-way. Sediments attract and adhere to other pollutants (heavy metals, oil/grease) and increased turbidity/sedimentation on channel bottoms impairs water quality and fish habitat.</td>
<td>Road Maintenance (Transportation Division)</td>
<td>• BMP not implemented in the Portland permit area. County roads operated and maintained by agreement with Portland.</td>
<td>• Not applicable.</td>
<td>Revise to reflect limited or no implementation in Portland Permit area.</td>
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<td>OM8. Review frequency and timing of ditch cleaning in areas where sediment and/or debris tend to accumulate. Determine if the frequency and timing of current ditch maintenance practices allows for reduction of pollutants and minimizes the impact on ditch surface. (If not, recommend and implement improved frequencies, timing, and/or type of equipment to minimize damage to ditch bottom.) Using records, determine where improvements are needed to reduce discharges to ditches.</td>
<td>Control/reduce amount of sediments and pollutants discharged to the receiving waters. Sediments attract and adhere to other pollutants (heavy metals, oil/grease) and increased turbidity/sedimentation on channel bottoms impairs water quality and fish habitat.</td>
<td>Road Maintenance (Transportation Division)</td>
<td>• BMP not implemented in the Portland permit area. County roads operated and maintained by IGA with Portland.</td>
<td>• Not applicable.</td>
<td>Revise to reflect limited or no implementation in Portland Permit area.</td>
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<td>Reduces the frequency and impact of accidental nonstormwater discharges and controls illicit discharges and Improper Waste Disposal (ILL)</td>
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| I.I.1. Continue to work with regional HAZMAT teams on policy matters concerning water quality impacts. Continue cooperative agreements with other agencies to ensure spills are responded to and cleaned quickly. If necessary, clarify and/or improve procedures to ensure effective interagency coordination and rapid response. | Improve procedures to ensure effective interagency coordination and communication, and rapid response. Train staff about water quality impacts from spills. Currently most staff is aware of safety issues, but not necessarily environmental impacts. | Emergency Response (Transportation Division) | • Aside from diesel spills, the County contracts with NRC Environmental Services to ensure that spills are responded to and cleaned quickly and safely.  
• County Emergency Safety Officer remains briefed on the activities and policies of the Portland regional hazardous materials team and considers changes to the County program as appropriate. Provided update to Portland Bureau of county emergency contacts.  
• Hazardous materials communications training provided to Transportation Bridge personnel.  
• County crews followed proper procedures regarding spills and discharges requiring emergency response.  
• Continued to address non-hazardous spills and report hazardous spills to appropriate agencies.  
• No hazardous spills were reported | Records are kept of County response to hazardous and non-hazardous spills. The NPDES Emergency Response functional group leader evaluates these records. | No modifications. |
| I.I.2. Review reporting of and action for noticeable private truck hauling practices causing discharges to County roads and the stormwater conveyance system. Work with County inspection officers for immediate response. | Control discharges from truck hauling activities to the extent that they are impacting the County right-of-way. | Right of Way Bridge Section | Right-of-way inspectors address impacts to the right-of-way caused by private trucks. | Not applicable | On schedule  
No modification |
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<td>ILL3. Implement requirements to control discharges from County contractors' truck hauling practices to ensure that materials do not leak, spill or otherwise release contaminants onto roadways or open space where they may be washed into storm drains or waterways. Continue to require erosion control measures in contract specifications. Review permit requirements with contractors for fueling, cleaning trucks, etc. during project. Develop a monitoring process to ensure control of discharges.</td>
<td>Control discharges from truck hauling and maintenance activities to the extent that they are impacting the County right-of-way (ROW). Enforce erosion control measures to reduce sediment discharge to County ROW. Monitor to ensure control over regulated contractors’ activities.</td>
<td>Construction Right-of-Way Bridge (Transportation Division)</td>
<td>- The County provides information, open discussion and clarification of truck hauling practice issues in pre-construction conferences held for each construction project. Discussion of practices is encouraged throughout any active project. - Contractors are required to self-monitor erosion discharge via the Oregon Department of Transportation (ODOT) Erosion Control Monitoring form turned in to the project manager weekly. - Erosion control is a standard bid item on construction projects. - Reviewed and approved erosion control plans are required from the contractor at contract start up. Project-specific concerns are addressed in the contract erosion control plan.</td>
<td>- Construction inspectors monitor construction activities on a daily basis, with an emphasis on discharge control. - Inspectors take immediate action when a stormwater problem is identified. - A $2,000 cash deposit is required to help insure that trucks do not pollute; if they do and don’t clean it up immediately, the County responds and deducts all costs. - Erosion Control Monitoring forms are reviewed weekly and evaluated for erosion control management.</td>
<td>On Schedule No modifications.</td>
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<td>ILL4. Continue to require detention systems with proper connection to the right-of-way and/or the MS4 and/or surface or subsurface infiltration. Review new development permit applications for sedimentation manholes, catch basins, etc., which reduce pollutants to the maximum extent practicable. Continue to require installation of pollution plates on new inlets.</td>
<td>Assure that the design standards in place adequately address water quality issues throughout the permit area.</td>
<td>Design Right of Way</td>
<td>- County requires new development requesting drainage into County right-of-way to limit drainage to that which would occur naturally without impervious surface. - County issues street opening permits within County roads to construct public utilities, including storm sewer facilities.</td>
<td>- Records kept of public utility inspection activities.</td>
<td>On schedule. No modifications.</td>
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<td>ILL5. Continue to implement a field program to identify and investigate illicit connections (from sanitary sewers and/or commercial wastewater sewers) to the storm sewer system. Develop procedures for inspection and follow-up solutions, and include in Operations Manual.</td>
<td>The objective of this BMP is to remove non-stormwater discharges to the MS4. By identifying, investigating, and solving cross-connections and other illicit discharges, waste can be sent to the appropriate system.</td>
<td>Bridge</td>
<td>- County roads operated and maintained by IGA with Portland. Portland inspects for illicit connections during road maintenance activities. - Bridge Maintenance regularly inspects and maintains sanitary facilities on bridge structures for proper operation.</td>
<td>- Monitor maintenance inspections and follow up with necessary repairs.</td>
<td>On schedule. No modifications.</td>
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| **ILL.6.** Continue to manage the spill prevention and response program that reduces the frequency and impact of accidental non-stormwater discharges to the MS4. Improve use of absorbent materials for quick response to minor spills of oil or fluid. Keep records of incidents and response. Continue to coordinate appropriate incidents with cities. Revise County Road Maintenance Operation Manual (RMOM), if necessary, to include clear instructions for field personnel in the event of a spill. | Prevent spills to the maximum extent practicable and improve response to accidental non-stormwater discharges to reduce the frequency and overall impact of spills to the stormwater system.                                                                                                                                                                                                                       | Road Maintenance Emergency - Response     | • Developed and Implemented Emergency Spill Response Plan for all county personnel.  
• Provide First Responder “Operations Level “ training to Transportation and Facilities & Property Management to more than 600 county personnel  
• Continued to review new spill absorbent technologies to incorporate into existing spill response equipment.  
• County contracts with NRC Environmental Services and RMCAT Environmental Services, Inc., for response to hazardous material spills.  
• Field logs used for recording spill events.  
• Road Maintenance Supervisors and lead staff carry spill response and containment materials onboard their vehicles  
• County Facilities equipped with Spill Response Kits  
• Kept records of observations and follow-up action.  
• Reviewed and evaluated field logs.  |                                                                                                                                   | No modifications. Specialized spill response trailer under development should be operational early PY 10.                                                                                                                                  |
| **ILL.7.** Continue to implement incentives or requirements for County contractors to ensure that damages (from erosion and sediment deposition) are addressed and paid for by dischargers. Continue to require cash deposits, performance-payment bonds, final inspections and other mechanisms to ensure compliance with permit requirements. Continue pre-construction meetings to disseminate information about requirements to prevent damages during road construction projects. | Continue to require those responsible for damage and water quality pollution to pay the clean-up costs. By implementing conditions that ensure damage will be reversed and paid for, the objective of this BMP is to promote practices that will not cause damage in the first place. This BMP is intended to apply to contractors hired to construct County projects, including road repair and construction, and associated projects. | Construction, Design Right of Way Permits Bridges (Transportation Division) | • Bridge Engineering through contract with its subcontractors incorporates requirements performance incentives.  
• Right-of-Way continues to review and permit access and impacts to the right-of-way and appropriate performance incentives to ensure compliance.  
• Records kept of inspection activities                                                                 |                                                                                                                                   | On schedule. No modifications.                                                                                                                                                                                                                           |
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| ILL8. | Implement a program to reduce/eliminate discharges of all other pollutants (other than sediment) from road construction and related sites (paints, solvents, metals, etc.). Establish or improve regulations or policy as necessary. Continue inspection as part of daily routine. Continue record-keeping system for reporting any incidents of pollutants or debris. Provide training program to staff to monitor for pollution control. | Eliminate/reduce discharge of all pollutants from construction sites which adversely impact stormwater and receiving water quality. | Bridge Sustainability Facilities and Property Management  
- County roads are operated and maintained by IGA with Portland  
- Bridge Maintenance incorporated a new vacuum system in association with core drilling on bridge deck and road surfaces. The system collects concrete/water slurry for proper disposal.  
- Events of pollutant discharge or debris and clean up are kept in the environmental database.  
- Several pollutant reduction trainings were held during PY9 for Transportation staff. | Not applicable. Staff will continue to monitor effectiveness of new system. | On schedule. No Modifications. |
| Standards to reduce pollution from new and redevelopment (ND). | | | | | |
| ND1. | Continue to coordinate transfer of urban land use planning authority from the County to the cities, which ensures continuous application of NPDES roles and responsibilities prior to transfer. | Much of the urban area is outside of County jurisdiction as it has been annexed to Portland or Gresham. As this area is transferred, the County will continue to coordinate to ensure continuous land use planning services including NPDES roles and responsibilities. | Land Use Planning (Land Use Planning Division)  
- The County completed the transfer of zoning and land use planning authority within the permit area to the City of Portland, January 2002, per the Multnomah County- City of Portland Compliance Project to achieve the goals of, and comply with, Metro’s Urban Growth Management Functional Plan. | Not applicable. | Revise to reflect limited or no implementation in Portland Permit area. |
| ND2. | Continue permitting grading permits and hillside development permits per County zoning code. | Control/reduce amount of erosion and sediments discharged to the receiving waters. Sediments attract and adhere to other pollutants (heavy metals, oil/grease) and increased turbidity/sedimentation on channel bottoms impairs water quality and fish habitat. | Land Use Planning  
- The County completed the transfer of zoning and land use planning authority within the permit area to the City of Portland, January 2002, per the Multnomah County- City of Portland Compliance Project to achieve the goals of, and comply with, Metro’s Urban Growth Management Functional Plan. | Not applicable. | Revise to reflect limited or no implementation in Portland Permit area. |
| ND3. | Continue to enforce land use zoning and permit requirements, which may impact stormwater quality. Continue to enforce setback requirements from Designated significant streams and identified waterways. | Preserve significant vegetated areas adjacent to water bodies to reduce stormwater runoff and the pollutants carried with it. | Land Use Planning  
- The County completed the transfer of zoning and land use planning authority within the permit area to the City of Portland, January 2002, per the Multnomah County- City of Portland Compliance Project to achieve the goals of, and comply with, Metro’s Urban Growth Management Functional Plan. | Not applicable. | Revise to reflect limited or no implementation in Portland Permit area. |
<table>
<thead>
<tr>
<th>Best Management Practice</th>
<th>Overall Intent, Goals and Objectives</th>
<th>Functional Group(s) for BMP Implementation</th>
<th>Key Accomplishments for Permit Year 9</th>
<th>Assessment of Controls</th>
<th>Proposed Modifications to Schedule or Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND4. Apply County drainage standards for all new development and redevelopment; both public and private. Revise drainage standards as needed to clarify requirements for stormwater facilities related to new private development and redevelopment.</td>
<td>Adequately control discharge of stormwater for both water quantity and quality purposes.</td>
<td>Engineering Design Right-of-Way</td>
<td>• All planned connections to the County right of way are reviewed by Transportation Right-of-Way and Road Engineering to determine storm water discharge to the MS4 where on site detention is not possible and only predevelopment volume is permitted to connect to the ROW. • Drainage standards have been reviewed in-house. No revisions made in PY9.</td>
<td>• Operations internally reviewed by staff for completeness and accuracy.</td>
<td>On schedule. No modifications.</td>
</tr>
</tbody>
</table>

**Pollution reduction in Multnomah County drainage and flood control facilities (STR)**

| STR1. Conduct plan checks of stormwater quality treatment facilities that are included in capital improvement projects to assure they follow standard design criteria that include stormwater quality considerations, and that the appropriate facility is selected for the intended purpose. | The goal of this BMP is to ensure that appropriate design standards are established to reduce the discharge of pollutants from sites to the maximum extent practicable. | Bridge Engineering, Transportation Division) | • Bridge Engineering reviewed stormwater conveyance considerations for Broadway Bridge restoration and incorporated stormwater treatment facilities accordingly. • Bridge Engineering incorporated stormwater treatment facilities in concept design for Sellwood Bridge rehabilitation project. | • Monitor effectiveness of water quality treatment facilities. | On schedule. No modifications |

<p>| STR2. When major repair is needed, develop and implement retrofit of existing public drainage and flood control facilities (sumps, retention basins, drainage channels, bioswales, trash racks, sediment trap devices, etc.) where practicable to improve water quality. Install new systems using current standards. | Continue sump replacement and retrofit of flood control facilities to improve pollutant reduction aspects of existing drainage and flood control facilities. | Bridge Engineering, Transportation Division) | • Bridge Section retrofit fit of existing catch basins on the Broadway Bridge with proprietary pollution reduction facilities as a Capital Improvement Project. • Sustainability Initiative incorporated Green Roof technology for the Multnomah Building. The Green Roof utilizes a 6’ deep lightweight soil and a wide range of plant materials to control stormwater runoff by mimicking the process that occur in natural settings. Stormwater is intercepted and delayed by capturing precipitation in the soil and foliage then releasing it back into the atmosphere through evapotranspiration. Reductions in total annual runoff of up to 70% are common for green roofs. In addition to reducing volume and flow rate to the MS4, water quality is expected to be enhanced. • Manhole access lids installed on existing Underground Injection Control facilities (sumps) located in the right-of-way and parking lots of county buildings | • Monitor effectiveness of filtration device. • Record level of effort expended to address new technologies and practices | On schedule. No modifications |</p>
<table>
<thead>
<tr>
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</thead>
</table>
| STR3.                  | Ensure that any facilities built in conjunction with road construction projects consider long-term water quality protection, where feasible. | Ensure that drainage/flood control and water quality facilities built as part of road construction projects protect stormwater quality beyond the construction period. | Road Engineering | • County roads are “built out” in the permit area, thus no Capitol Improvement Projects are planned.  
• County roads operated and maintained by IGA with Portland.  
• The Bridge Engineering section installed stormwater filter inserts during a recent bridge maintenance project on the Broadway Bridge. | • Monitor effectiveness of filtration device. | On schedule.  
No modifications |
| STR4.                  | Review existing design standards for drainage, flood control, and water quantity facilities for applicability to water quality. Review water quality criteria issued by the City of Portland and others and consider for use as guidance documents. Modify design standards if necessary. | Consider design standards used in the region to better address water quality issues when permitting drainage and water quantity facilities (other than road construction), both private and public. | Road Engineering | • The County no longer has planning or zoning authority within the permit area. | • Not applicable. | Revise to reflect limited or no implementation in Portland Permit area. |
| STR5.                  | Continue to inventory and map the municipal storm sewer system. Improve knowledge of the County system to facilitate identification of problem areas and implementation of control programs in strategic locations. Allocate staff resources to ensure continued map updates. | Ensure County storm sewer mapping is accurate. This BMP supports the MS4 by providing valuable information allowing the County to effectively accomplish other elements of the NPDES permit requirements. | Road Engineering, | • Inventory maps updated as projects are constructed.  
• Maintained accuracy of County stormwater system maps.  
• Inventory maps updated with additional information field pursuant to UIC rules. | • Accuracy maintained via map updates as projects are constructed. | On schedule.  
No modifications |
| STR6.                  | Ensure through contract agreements that constructed wetlands and adjacent facilities built in conjunction with road projects are properly designed to reduce the effects of pollutants in stormwater and runoff, as well as impacts to the wetlands themselves. | Provide stormwater quality protection benefits through use of natural resource areas such as wetlands. | Design Engineering | • No activity during PY 9 within Permit area. | • Not applicable. | On schedule.  
No modifications |
<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Designed to reduce pesticide use and encourage use of self-sustaining vegetation to help improve water quality (PS).</td>
<td></td>
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</tr>
</tbody>
</table>
| PS1.                                                                                   | Continue to implement vegetation management procedures as in the Road Maintenance and Operations Manual (RMOM) to assure that water quality impacts are addressed. Include annual Oregon Department of Agriculture and EPA certification for pesticide applicators. Selectively use pesticides wherever applicable. Continue to improve application practices and train personnel to reduce pollutants to the maximum extent practicable. | Reduces pesticide use as means of improving impacts to water quality. Implement existing/improved practices to ensure that pollutants discharged from and into County rights-of-way (roads, ditches) are reduced to the maximum extent practicable. | Transportation Division | • County roads and associated Right-of-Way operated and maintained by IGA with Portland.  
• Bridge section continues to maintain vegetation appurtenant to bridge abutments when necessary. | • Not applicable. | No modifications. |
| PS2.                                                                                   | Promote use of native vegetation on public and private projects. Support government tree-planting programs that reduce pollutant impacts to receiving streams. Utilize existing native plant lists for development review. | Reduce pesticide use and encourage use of self-sustaining vegetation as means of improving water quality. | Land Use Planning Division, Transportation Division | • Not applicable in Permit area. The County no longer has planning or zoning authority within the permit area. | • Not applicable. | Revise to reflect limited or no implementation in Portland Permit area. |
| PS3.                                                                                   | Ensure specifications for landscape in right-of-way projects require the use of low-impact species. Encourage use of self-sustaining, non-invasive vegetation that reduces the need for pesticides, fertilizers, and water. | Reduce pesticide use and encourage use of self-sustaining, non-invasive vegetation as means of improving water quality. Implement existing/improved practices to ensure that pollutants discharged from and into County rights-of-way (roads, ditches) are reduced to the maximum extent practicable. | Transportation Planning (Transportation Division) | • County roads are operated and maintained by City of Portland through IGA.  
• Transportation Planning and Right-of-Way continue to provide input to City of Portland on potential access or impacts to the right-of-way.  
• County remains responsible for the Transportation System Plan for County owned roads within the unincorporated pockets. TSP revisions were initiated during PY9. The TSP addresses right-of-way landscape standards. | • Not applicable. | On schedule. No modifications Transportation System Plan will be completed in PY10. |
<table>
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<th>Assessment of Controls</th>
<th>Proposed Modifications to Schedule or Activities</th>
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</thead>
</table>
| **OA1.** Develop and manage the Stormwater Program to ensure compliance with the NPDES permit. Implement cost-effective, practical BMPs and activities that are designed to reduce stormwater pollution to “the maximum extent practicable,” given the County’s unique conditions. | Develop and manage the County’s stormwater program to ensure compliance with the NPDES permit. Develop and implement cost-effective, practical BMPs and activities that are designed to reduce stormwater pollution to the "maximum extent practicable." | Compliance | • Incorporated Sustainability, Facilities and Property Management into the Environmental Management reporting program  
• Continued to enhance reporting procedure and record keeping methodology for greater efficiency.  
• Utilized E-Mail to provide program updates to functional group members. Messages incorporated regulatory updates of Clean Water Act; TMDL and NPDES programs, and Underground Injection Control as well as a reminder to report on their assigned BMPs by using the County’s electronic tracking system.  
• Facilitated work sessions with County staff related to program implementation and reporting.  
• Attended DEQ meetings to discuss implementation of County NPDES programs. | • Conducted informal surveys of staff responsible for functional group’s BMP tasks.  
• Conducted meeting of functional group representatives to review BMP implementation and accomplishments. | On schedule. Modifications of program upon evaluation where necessary. |
| **OA2.** On a continuous basis, and especially annually, assess and evaluate the BMP program to ensure use of available resources, and make recommendations for improvements in program implementation tasks. Designate County staff to compile/summarize records for each BMP. Utilize BMP record-keeping system for evaluation of progress at regular work sessions with Stormwater Implementation Team. | Assess and evaluate program to ensure the best use of available resources and make recommendations for continuous improvement. | Compliance | • Managed record keeping system for use by the County staff to track work done in the field, meetings attended, etc.  
• Worked with County staff to compile individual BMP files for evaluation of progress at several work sessions with the entire Stormwater Implementation Team.  
• Continued capturing established Bridge maintenance BMPs and developed a reporting procedure to coordinate with the Environmental Management tracking system. Bridge Maintenance activities are primarily within the Portland NPDES Permit area because of the Willamette River bridges. | • Conducted informal surveys of staff responsible for functional group’s BMP tasks.  
• Conducted meeting of functional group representatives to review BMP implementation and accomplishments. | On schedule. Due to new staff, evaluation of program efficiencies will be conducted. |
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</table>
| OA3. Review annually and update as needed the Road Maintenance Operations Manual (RMOM), including procedures regarding water quality impacts to receiving streams. Continue to keep field records of maintenance activities. | Use record keeping to track performance of BMPs overtime and to determine level of water quality protection provided. Adjust Stormwater Program through adaptive management based on results reported in annual reports. | Transportation Division | • Road Maintenance revised the daily activity BMP reporting forms to more closely reflect current standards.  
  o Completed activity logs are compiled and entered into the Road Information Systems database.  
  • More narrative are provide on Report of Event forms and entered in the Environmental Management database | • Staff review of field logs.  
  • Conducted meetings of Transportation Division staff to review use of logs. | On schedule.  
  No modifications. |
Multnomah County

Budget and Funding

Program activity within the Portland Permit for Permit year nine area is primarily associated with the Department of Business and Community Services – Land Use and Transportation Program and the Environmental Compliance Program.

Bridge Maintenance expenditures and anticipated budget allocations within the Portland Permit area incorporate items including, drainage maintenance, right-of-way, surface management, vegetation management, general administration, emergency road hazard response and training.

Bridge Engineering expenditures and anticipated budget allocations within the Portland Permit area incorporate drainage studies and reviews, environmental compliance review, as-built plan drafting and inventory, GIS database entry, and training.

Multnomah County Road Maintenance, through an Intergovernmental Agreement, contracts with the City of Portland to maintain and operate County owned roads consistent with applicable operations and maintenance best management practices as set forth in the City of Portland Stormwater Management Plan of the 1993 City of Portland National Pollution Discharge Elimination System Municipal Stormwater permit.

Road Engineering continues to retain authority to review access and impacts to the right-of-way including stormwater discharge when such discharges cannot be retained on site. Discharge from the undeveloped parcel is calculated and only that volume is permitted for access to County road drainages. There were only a handful of reviews conducted during permit year nine.

Transportation Planning within the Portland Permit area includes development review in the unincorporated pockets where such development has the potential to access or impact the county right-of-way. During permit year nine, Transportation Planning initiated a Transportation Planning System (TSP) planning project pursuant to State-wide Planning Goal 12. During permit year 10 the TSP will incorporate public involvement and is anticipated to be completed.

Transportation receives its funding from dedicated road funds stemming from a portion of gasoline sales and vehicle registrations within the county. The Environmental Compliance Program which manages the Stormwater program is a General Fund expenditure.
The table below outlines program expenditures for PY 9 (Fiscal Year 2003-2004) and provides the anticipated budget for PY 10 (Fiscal Year 2004-2005).

<table>
<thead>
<tr>
<th>Program Area</th>
<th>PY 9 Expenditures</th>
<th>PY 10 Anticipated Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Compliance</td>
<td>$129,769</td>
<td>$124,610</td>
</tr>
<tr>
<td>Bridge Maintenance</td>
<td>$2,400,000</td>
<td>$2,400,000</td>
</tr>
<tr>
<td>Bridge Engineering</td>
<td>$3,700,000</td>
<td>$2,800,000</td>
</tr>
<tr>
<td>Road Maintenance IGA</td>
<td>$147,750</td>
<td>$150,000,000</td>
</tr>
<tr>
<td>Road Engineering</td>
<td>$1,000</td>
<td>$1,000</td>
</tr>
<tr>
<td>Transportation Planning</td>
<td>$5,000</td>
<td>$19,000</td>
</tr>
</tbody>
</table>
Multnomah County
Legal Authority

The County continues to maintain legal authority to implement the programs outlined in the Storm Water Management Plan as initially demonstrated in Part 1 of the original NPDES Municipal Storm Water Permit Application (No(s). 101315 & 101314).

Multnomah County Road Maintenance through an Intergovernmental Agreement contracts with the City of Portland to maintain and operate County owned roads consistent with applicable operations and maintenance best management practices as set forth in the City of Portland Stormwater Management Plan of the 1993 City of Portland National Pollution Discharge Elimination System Municipal Stormwater permit.

The County completed the transfer of zoning and land use planning authority within the permit area to the City of Portland, January 2002, per the Multnomah County-City of Portland Compliance Project to achieve the goals of, and comply with, Metro’s Urban Growth Management Functional Plan.

Recently, the Multnomah County Code (M.C.C) 37.0915 to 37.0970 has been amended to provide for the enforcement of violations constituting substantial evidence of environmental harm including, but not limited to, any discharge of pollutants to waters of the state that cause or contribute to a violation of applicable water quality standards. In addition, the County has revised its code enforcement program by adding a full time code compliance specialist to enforce the land use and transportation codes. The amendments apply to unincorporated portions of Multnomah County outside of the Urban Services Area.
Section IV

PORT OF PORTLAND
ANNUAL REPORT

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) PERMIT (NO. 101314)

October 21, 2004

Prepared for:
PORT OF PORTLAND
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Portland, OR  97209

Prepared by:
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GLOSSARY OF ABBREVIATIONS

APPENDIX: PORT OF PORTLAND TENANT NPDES PERMITS
1.0 INTRODUCTION

The Port of Portland (Port) manages stormwater runoff from its properties to protect the environment, to minimize flood damage, to prevent nuisance conditions from developing, and for public safety. The Oregon Department of Environmental Quality (DEQ) regulates stormwater runoff from Port properties through the Municipal Separate Storm Sewer System (MS4) Discharge Permit No. 101314 (Municipal Permit) and other National Pollutant Discharge Elimination System (NPDES) stormwater permits.

As a co-permittee authorized to operate under the Municipal Permit, the Port is required to report its accomplishments during each permit year. The 2003-2004 year represents the ninth annual report submittal.

The following sections of this annual report document the results of the Port’s stormwater management efforts during the past permitting year. The report emphasizes the efforts and activities associated with individual Best Management Practices (BMPs).
2.0 PORT OF PORTLAND PROPERTIES

The Port owns approximately 6,500 acres within the City of Portland (City) Urban Services Boundary. This acreage includes three operating areas and undeveloped properties, such as wetland mitigation sites. Operating areas consist of (1) the Portland International Airport (PDX), (2) the four Marine Terminals, and (3) several industrial parks occupied by commercial tenants.

2.1 Portland International Airport

PDX comprises an area of approximately 3,200 acres and is located in northeast Portland between the Columbia River and the Columbia Slough. The facility is owned and operated by the Port, and it serves numerous aviation-related tenants. Stormwater runoff from the PDX property discharges into the Columbia Slough through a series of nine major outfalls authorized under the NPDES General 1200-COLS Industrial Stormwater Discharge Permit. This permit is specifically structured to address Columbia Slough Total Maximum Daily Load (TMDL) parameters, including dissolved oxygen (DO), pH, nutrients, bacteria, and toxics. With the exception of the Oregon Air National Guard, which has its own 1200-COLS permit, PDX tenants whose operations require stormwater permits are co-permitees with the Port under the 1200-COLS Permit. PDX also holds a NPDES Construction Dewatering Waste Discharge Permit, a NPDES Anti-icing/Deicing Waste Discharge Permit, a City of Portland Pretreatment Permit, and a Water Pollution Control Facility (WPCF) 1700-B Wastewater Permit. All tenants at PDX who conduct deicing activities are required to be co-permitees under the Anti-icing/Deicing Permit, or to obtain their own permit.

2.2 Marine Terminals

The Marine Terminals operating area consists of four active shipping terminals that are managed by the Port’s Marine Department. The terminals collectively occupy approximately 869 acres along the Willamette (Terminals 2, 4, and 5) and Columbia (Terminal 6) Rivers. These areas handle the shipping, receiving, and temporary storage of finished goods, agricultural products, and raw materials. The Port previously owned and operated Terminal 1 (Willamette River), managing it as an industrial property following its closure as a public marine cargo facility in 1989. The Port completed the sale of Terminal 1 in February 2004.

The Port holds both a 1200-Z (Columbia River) and 1200-COLS (Columbia Slough) NPDES permit for Terminal 6. The majority of the properties located at Terminals 2, 4 and 5 are leased to various tenants who may hold their own NPDES permits.

2.3 Industrial Parks

The Port’s Property and Development Services Department manages Port-owned industrial parks, including Swan Island, Port Center, Mocks Landing, Rivergate, Portland International
Center (PIC), Troutdale Industrial Park, and Brookwood Corporate Park. The Troutdale (75 acres) and Brookwood (22 acres) properties are located outside of the Municipal Permit area and are not discussed further in this report. The remaining areas occupy approximately 1,700 acres. The Port leases approximately 80% of its industrial park property to private commercial operators. Many of these tenants hold industrial discharge NPDES permits. Additionally, Port tenants may be required to obtain a 1200-C General NPDES Permit for new construction or development.

2.4 Undeveloped Properties

The Port’s Property and Development Services Department manages approximately 900 acres of undeveloped property within the Urban Services Boundary. Areas include West Hayden Island, Albina Dock, undeveloped property beneath the Broadway Bridge, and several wetland mitigation sites. The mitigation sites cover over 650 acres and feature a variety of wetland types (i.e., emergent, scrub-shrub, forested, etc.).
3.0 ORGANIZATIONAL STRUCTURE AND COMMITMENT

The Port’s Environmental Affairs Department is responsible for administering the Municipal Permit and the Municipal Stormwater Management Plan (MSWMP). Environmental staff from each operating area are responsible for implementing Port environmental programs and for ensuring permit compliance. As a means of coordinating Port-wide programs and policies, Environmental Affairs Program Managers regularly meet with Port operating area staff.

The Water Resources Coordination Group (WRCG) includes environmental staff from the corporate office, operating areas, and engineering. This group meets monthly and is responsible for coordination on Port-wide stormwater policy issues, permit matters, training, and communication. The Environmental Affairs Water Resources Program Manager (also the MS4 Permit Manager) serves as the lead for the WRCG.

Operating areas with NPDES Industrial Stormwater Discharge Permits are required to prepare and maintain Stormwater Pollution Control Plans (SWPCPs) for their facilities. Port staff at PDX prepare and update the SWPCP in conjunction with its co-permitees, and Marine staff prepare and update the SWPCP for Terminal 6.
4.0 STORMWATER MONITORING DATA

The Port’s Stormwater Monitoring Program, submitted to DEQ in 1998, defines the Port’s approach to meeting the Municipal Permit monitoring requirements. This included the Illicit Discharge Detection and Removal Program (IDDRP), BMP effectiveness monitoring, and industrial permit monitoring. BMP effectiveness monitoring was concluded during the first permit term. Monitoring components of the second permit term include stormwater sampling associated with the Port’s industrial NPDES permits, and dry season monitoring as part of the IDDRP. The Port also voluntarily monitors water quality at select mitigation sites.

Land use characterization monitoring continues to be performed by the City as required by the Municipal Permit, with the Port providing financial support for this effort. This arrangement is documented in an August 5, 1999 agreement signed with the City, which states that the Port will pay its percentage of the monitoring costs until 2005. The City’s monitoring program initially focused on characterizing pollutant concentrations in urban runoff from various land uses. In permit year two, the City requested that DEQ allow modifications to de-emphasize land use based monitoring and more effectively direct resources toward acquiring new information to support the development and refinement of stormwater management activities. In February 1998, DEQ approved the new program for the remainder of the permit term.

In addition to the industrial stormwater permit monitoring discussed in Section 4.1, the Port collects and submits monitoring data to DEQ for the NPDES permits listed below. These are not components of the Port’s stormwater monitoring program but provide useful information regarding the Port’s activities. Data collected for these permits is not included in the Municipal Permit annual report, but can be made available through the Port or DEQ upon request.

- NPDES Anti-icing/Deicing Waste Discharge Permit, DEQ File No. 101647 (PDX)
- NPDES Construction Dewatering Waste Discharge Permit, DEQ File No. 101588 (PDX)
- NPDES 1700-B Water Pollution Control Facility (WPCF) Wastewater Discharge Permit, DEQ File No. 107220
- NPDES Dewatering Permit, DEQ File No. 107220

4.1 Industrial Permit Monitoring

Stormwater sampling at PDX and T-6 is required for stormwater general industrial permit compliance, however, the monitoring also provides useful data about Port industrial properties. This monitoring is an appropriate component of the Stormwater Monitoring Program. The data resulting from the site runoff sampling has been and will continue to be useful for understanding water quality impacts from these different types of industrial land uses.

The Port submitted stormwater monitoring data to DEQ for the following industrial stormwater discharge permits:
• NPDES 1200-COLS Industrial Stormwater Discharge Permits, DEQ File Nos. 107220 and 111492 (PDX and Terminal 6, respectively)
• NPDES 1200-Z Industrial Stormwater Discharge Permit, DEQ File No. 103594 (Terminal 6)

This data is not included in the Municipal Permit annual report, but is available through the Port or DEQ upon request.

4.2 Dry Season Inspection Monitoring

The Port’s dry season monitoring effort is part of the Illicit Discharge Detection and Removal Program (IDDRP) and is designed to detect non-stormwater discharges from Port-owned outfalls. Dry season monitoring occurs on a 5-year rotation with certain priority outfalls being monitored annually, such as the outfalls at PDX. If the inspector observes a discharge that is not a permissible discharge as outlined in 40 CFR 122.26(d)(2)(iv)(B)(1), the inspector documents visual observations, investigation procedures are initiated, and water samples are collected for laboratory analysis, if needed, to aid in determining the source of the flow. Port staff schedule follow-up investigations and inspections as necessary.

PDX

PDX environmental staff performed dry season inspections of all of its outfalls on August 25 and 26, 2003. Low-volume flows were observed in some outfalls. The presence of water in these outfalls was attributed to groundwater infiltration, a permissible discharge. Odors, sheens, discolorations, or other evidence of non-permissible discharges were not noted during the inspections, and no follow-up sampling was deemed necessary.

Marine Terminals

Marine environmental staff performed dry season inspections over a period from July 30 to September 3, 2003. The 2003 inspection schedule included outfalls at Terminals 2, 4, 5, and 6.

Flow was not observed in the outfall that was inspected at Terminal 2, or in the two outfalls that were inspected at Terminal 4. Three outfalls located at Terminal 4 (SJ21PP, SJ22PP, and SJ25PP) that were scheduled for inspection during the 2003 dry season were not monitored due to construction associated with the Toyota Redevelopment Project.

Three outfalls located at Terminal 5 were inspected in August 2003. One of these outfalls was observed to be dry. However, discharges were present in two of the Terminal 5 outfalls (RG12.5PP and RG13PP). Follow-up investigations indicated that the water observed in outfall RG12.5PP likely came from two sources: a nearby irrigation system and drainage from an off-site structure. The exact source of drainage from the off-site structure could not be determined with certainty, but Port staff thought that the water may have been air conditioning condensate or was rainwater slowly releasing to the systems from an obstructed roof drain. Samples of the discharge were collected from the outfall, and laboratory analysis did not indicate elevated levels of any parameters of concern. RG12.5PP is on the list of priority outfalls scheduled for yearly inspections.
The discharge observed within RG13PP was also investigated and determined to likely have resulted from sprinkler irrigation runoff. RG13PP is a priority outfall scheduled for yearly monitoring.

Four outfalls located at Terminal 6 were inspected in August 2003. Flow was not observed in three of these. A discharge was noted, however, in outfall RG10PP. It was determined that the discharge originated from a tenant structure and that it likely consisted of automobile wash water. The Port followed up with the tenant, advising that wash water discharges to the stormwater system are not allowed without a permit. RG10PP is a priority outfall scheduled for yearly inspections.

Industrial Properties
Property and Development Services staff performed dry season inspections of the majority of the outfalls that it manages, including all outfalls identified in the Port’s MSWMP as scheduled for 2003 monitoring. The inspections were performed in July and covered a total of 40 outfalls located in the Rivergate Industrial District (23 outfalls), Swan Island Industrial Park (11 outfalls), and PIC (6 outfalls).

Discharges were not observed at the majority of the outfalls inspected. In instances where a discharge was noted, Property and Development Services staff determined whether or not the discharge originated from a permitted source (i.e., tenants with individual permits). For discharges with no known permitted source, the Port performed follow-up actions, including providing telephone and email notifications to City BES staff for outfalls discharging from City property and issuing letters to tenants potentially responsible for the discharges.
5.0 STORMWATER EXPENDITURES

From a financial perspective, the Port has two primary areas of activity: (1) Portland International Airport (Airport); and (2) Marine/Other. Airport resources are derived primarily from charges to passenger and cargo airline customers, airport parking, rental car revenue, passenger facility charges, and Federal grants. Airport resources are restricted by bond ordinances and Federal Aviation Administration regulations for use at the Airport.

Resources for Marine/Other are primarily derived from fees, charges and leases with Marine customers, leases with tenants of the Port’s industrial parks, sales of property at the industrial parks, revenues from the U.S. Army Corps of Engineers (USACE) for dredging services, and property taxes.

Port stormwater expenditures are distributed among five departments: Marine, Property and Development Services, Aviation, Engineering, and Environmental Affairs. The expenditures include Port staff salary (including benefit costs), contractor and consultant fees, stormwater infrastructure, training, and outreach materials.

The Marine Department spent approximately $155,520 in fiscal year 2003-04 on stormwater expenditures and estimates that expenditures for 2004-05 will be similar. Property and Development Services allocated approximately $68,800 for stormwater-related needs during the 2003-04 permit year and also estimates that expenses for 2004-05 will be similar. The Port’s Aviation Department (PDX) spent approximately $1,236,960 for stormwater during permit year nine, and plans to spend approximately $1,156,960 for fiscal year 2004-05. Stormwater expenditures for the Port’s Engineering Department totaled approximately $255,960 for fiscal year 2003-04, which is also the estimated total for 2004-05. The Environmental Affairs Department designated approximately $161,030 for stormwater-related uses in 2003-04, and projects that it will spend approximately $396,820 in 2004-05, an increase largely due to the addition of staff and projected consultant fees for Stormwater Management Plan (SWMP) revisions and BMP analysis.

<table>
<thead>
<tr>
<th>Department</th>
<th>Estimated 2003-04 Stormwater Expenditures</th>
<th>Estimated 2004-05 Stormwater Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine</td>
<td>$155,520</td>
<td>$155,520</td>
</tr>
<tr>
<td>Property &amp; Development Services</td>
<td>$68,800</td>
<td>$68,800</td>
</tr>
<tr>
<td>Aviation</td>
<td>$1,236,960</td>
<td>$1,156,960</td>
</tr>
<tr>
<td>Engineering</td>
<td>$255,960</td>
<td>$255,960</td>
</tr>
<tr>
<td>Environmental Affairs</td>
<td>$161,030</td>
<td>$396,820</td>
</tr>
<tr>
<td>Total</td>
<td>$1,878,270</td>
<td>$2,034,060</td>
</tr>
</tbody>
</table>
6.0 INSPECTIONS AND ENFORCEMENT ACTIONS

As described in Section 4.0 of this report, the Port performs dry season inspections of stormwater outfalls as part of the Illicit Discharge Detection and Removal Program (IDDRP). When non-permissible discharges are detected, the Port initiates investigation procedures and conducts follow-up investigation and inspections as necessary. The Port may also take enforcement actions against its tenants if it is determined that a violation of their lease or stormwater use agreement occurred that contributed to an impermissible discharge. However, no such enforcement actions were taken by the Port during the 2003-04 reporting year.
7.0 DEMONSTRATION OF CONTINUED LEGAL AUTHORITY TO IMPLEMENT THE PROGRAMS OUTLINED IN THE SWMP

The Port has authority to implement programs outlined in the SWMP through ordinance, permits, and contracts.

The Port has statutory authority to enact ordinances to regulate stormwater sewers that it owns, operates, maintains, or controls. On March 11, 1992, the Port Commission adopted Ordinance No. 361, which provides the Port with legal authority over persons in possession of land owned by the Port. Ordinance No. 361 prohibits such persons from making, causing, or allowing an illicit discharge into a storm sewer owned or operated by the Port. Section 4 of the Ordinance requires written permission from the Port before connection to a Port storm sewer. Section 5 of the Ordinance authorizes the Port to inspect the land and storm sewers for violations of the Ordinance or applicable law that governs the conveyance or disposal of stormwater. In addition, the Ordinance provides the Port with authority to control the contribution of pollutants to storm sewers owned or operated by the Port; the quality of stormwater discharged from the sites of industrial activity on land owned by the Port; and the discharge to storm sewers owned or operated by the Port of pollutants from spills, dumping, or the disposal of materials other than storm water.

In addition to the Ordinance, the Port has legal authority to control contribution of pollutants to the municipal storm sewer through contracts with its tenants. The lease agreements require the lessees to comply with the Port’s MS4 permit. Where appropriate and necessary, the Port has also entered into stormwater agreements to help control the contribution of pollutants to Port storm sewers. Some properties also have separate stormwater permits, with the Port and tenants as co-permittees. Through these regulatory and contractual mechanisms, the Port is working with tenants and users of Port facilities to implement and evaluate best management practices that will control the contribution of pollutants to Port storm sewers.
8.0 BMP ACCOMPLISHMENTS FOR PERMIT YEAR NINE (2003-2004)

8.1 General BMP Categories

The Port and its co-permittees developed eight general BMP categories during the permit renewal process for the second term of the Municipal Permit. These general categories provide a framework for co-permittees to improve interagency consistency and coordination. Within these categories, each co-permittee identifies specific BMPs that apply to their respective operations. The eight general BMP categories are listed below:

<table>
<thead>
<tr>
<th>BMP Code</th>
<th>BMP Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Public Involvement/Education (PI)</strong></td>
<td>Inform and educate the public, business, industry, and government about the causes of stormwater pollution and its effects on local streams and rivers; to encourage active participation in pollution reduction efforts.</td>
</tr>
<tr>
<td><strong>Operation and Maintenance (OM)</strong></td>
<td>Improve existing and/or implement new operation and maintenance practices for public streets, sewers, and other facilities that reduce the amount of pollutants entering the storm sewer system and waterways.</td>
</tr>
<tr>
<td><strong>Industrial/Commercial Controls (IND)</strong></td>
<td>Reduce and control industry and commercial discharges to the storm sewer system from runoff and production practices.</td>
</tr>
<tr>
<td><strong>Illicit Discharges Controls (ILL)</strong></td>
<td>Develop a program to investigate, find, and eliminate illicit discharges to the stormwater system (illicit discharges include both illicit connections and illegal dumping).</td>
</tr>
<tr>
<td><strong>New Development Standards (ND)</strong></td>
<td>Ensure that pollutant controls are applied in project planning, during construction phases, and for existing projects.</td>
</tr>
<tr>
<td><strong>Structural Controls (STR)</strong></td>
<td>Incorporate onsite stormwater quality and transport systems into design standards for new and remodeled development; to evaluate, construct/retrofit, and monitor appropriate stormwater treatment and transport systems for both existing and new development.</td>
</tr>
<tr>
<td><strong>Planning/System Preservation and Development (PS)</strong></td>
<td>Develop incentives and policies for preservation of natural areas; to modify zoning codes to improve water quality.</td>
</tr>
<tr>
<td><strong>Other Activities (OA)</strong></td>
<td>Ensure program coordination, management, evaluation, and monitoring.</td>
</tr>
</tbody>
</table>
### 8.2 Port-specific BMP Categories

Within the general BMP categories listed above, the Port has developed fifteen sub-categories that are specific to Port activities. These subcategories are listed below.

<table>
<thead>
<tr>
<th>BMP Code</th>
<th>BMP Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port-PI1</td>
<td>Conduct public outreach and support programs that increase public awareness of the importance of water quality protection.</td>
</tr>
<tr>
<td>Port-PI2</td>
<td>Inform employees and tenants of new stormwater pollution control efforts and activities in each Port operating area. Provide guidance for implementing the programs, where applicable. Participate with the City of Portland and community groups in promoting educational programs that relate to Port operations.</td>
</tr>
<tr>
<td>Port-OM1</td>
<td>Evaluate and update stormwater maintenance practices that affect water quality at stormwater quality facilities.</td>
</tr>
<tr>
<td>Port-OM2</td>
<td>Evaluate operations and maintenance of Port roads and vehicle maneuvering areas to determine water quality impacts. Recommend procedures or practices to reduce the discharge of pollutants to the stormwater system.</td>
</tr>
<tr>
<td>Port-OM3</td>
<td>Review landscape maintenance practices. Recommend the use of vegetation that reduces the need for pesticides, herbicides, fertilizers, and water, where practical.</td>
</tr>
<tr>
<td>Port-IND1</td>
<td>Develop a program to reduce the discharge of pollutants to the stormwater system from existing and developing industries on Port property, particularly focused on those that are not already regulated by other NPDES requirements.</td>
</tr>
<tr>
<td>Port-ILL1</td>
<td>Review required spill response procedures in each operating area. Refine procedures as necessary, including improving interagency coordination.</td>
</tr>
<tr>
<td>Port-ILL2</td>
<td>Provide information to employees and tenants on where and how to properly dispose of oil, antifreeze, pesticides, herbicides, paints, solvents, and other potentially harmful materials.</td>
</tr>
<tr>
<td>Port-ILL3</td>
<td>Detect and control illicit connections and discharges to the stormwater system.</td>
</tr>
<tr>
<td>Port-ILL4</td>
<td>Reduce the potential for illegal dumping through active property management.</td>
</tr>
<tr>
<td>Port-ND1</td>
<td>Apply practical erosion and sediment controls to reduce pollutant discharges at construction sites on properties being developed by the Port.</td>
</tr>
</tbody>
</table>
The remainder of this report describes the activities within each of these BMP categories during the past permit year.

<table>
<thead>
<tr>
<th>BMP Code</th>
<th>BMP Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port-STR1</td>
<td>When warranted and appropriate based on available water quality monitoring data, develop procedures for construction, maintenance, and monitoring of water quality facilities.</td>
</tr>
<tr>
<td>Port-OA1</td>
<td>Coordinate with applicable agencies working on regulatory aspects of water quality protection, including watershed management, combined sewer overflows, solid waste and recycling, and industrial waste and source control. Cooperate with agencies to implement new source or non-point source control practices where water quality data indicate the need for stormwater quality improvement.</td>
</tr>
<tr>
<td>Port-OA2</td>
<td>Promulgate policy and practices to address stormwater pollution issues on all Port property.</td>
</tr>
<tr>
<td>Port-OA3</td>
<td>Monitor stormwater to characterize typical discharges to the Port’s municipal system.</td>
</tr>
</tbody>
</table>
The Port supports a variety of public outreach programs and events focused on increasing public awareness of water quality issues. The Port’s support and participation ranges from hosting public events to funding environmental programs through grants to actively coordinating with other organizations on public outreach campaigns.

**KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)**

- The Port hosted quarterly Environmental Forums to provide representatives of regulatory agencies, tribes, environmental groups, and elected officials’ staff with an opportunity to learn about environmental aspects of the Port’s business and provide feedback. The May 2004 Forum, for example, included a presentation on the Toyota Redevelopment Project at Marine Terminal 4 and the environmental considerations, including stormwater management, that were incorporated into the project.

- The Port continued to publish quarterly its *Port Currents* newsletter, which provides information to the public on environmental and community issues. The Spring 2004 issue, for example, featured a story on stormwater system enhancements and other environmental improvements performed as part of the Toyota Redevelopment Project at Marine Terminal 4.

- The Port continued to publish *Portside*, a publication featuring news and information about airports, marine terminals, industrial parks, and environmental programs. The Summer 2004 issue of this newsletter featured a story on the completion of the Port’s pilot project to install 100% biodegradable wool stormwater catch basin inserts at its industrial properties.

- The Port continued to publish and make available to the public its *Environmental Annual Report*. This annual publication documents the Port’s environmental accomplishments for the reporting year, and outlines objectives and targets for the upcoming fiscal year.

- The Port issued a news release and held an Earth Day media event in April 2004 regarding its pilot project for installing 100% biodegradable wool stormwater catch basin inserts at its industrial properties. The story was covered and aired by a local television station.

- A story highlighting the Port’s pilot project for utilizing biodegradable wool stormwater catch basin inserts was featured in an April 2004 issue of the *Daily Journal of Commerce*. 
Port staff wrote an article detailing the Marine Terminal 4 Toyota Redevelopment Project that appeared in an April 2004 issue of Oregon Insider, a publication covering statewide environmental issues. The article focused on environmental facets of the project design, and included a discussion specifically related to the stormwater management system at the site.

The Port provided a grant to the City of Portland’s Office of Sustainable Development G/Rated Program and Ecotrust for the 2004 ReThink Series classes, the focus of which were innovative design strategies and construction practices for reducing the built environment’s contribution to climate change. The Series included a class devoted to restorative stormwater design, which presented strategies for making rainwater a site resource.

The Port’s Project Delivery System was utilized to involve internal and external stakeholders in project development. For example, the Toyota Redevelopment Project at Terminal 4 involved community group participation in the design to restore the Willamette riverbank to native conditions to improve stormwater and erosion control.

The Port continued a public outreach campaign to prevent stormwater pollution at storm drains through the use of curb/pavement markers and posters. The colorful markers are installed at storm drains and catch basins as a reminder that polluted stormwater often drains directly to rivers, streams, and other aquatic habitats. The Port also distributed informational posters that provide tips for minimizing water pollution at storm drains and list phone numbers for reporting spills to the City of Portland, the Port’s Environmental Hotline, and the PDX communications center.

The Port was a co-sponsor for the December 2003 Oregon Sea Celebration presented by the Audubon Society of Portland and Portland State University. This conference covered environmental issues such as water quality and land/sea interactions.

The Port co-sponsored the Columbia Slough Regatta, an annual family-oriented event that provides educational information about the Columbia Slough.

As a member of the Columbia Slough Watershed Council (CSWC), the Port continued to implement the Columbia Slough Watershed Action Plan, which includes a comprehensive list of potential enhancement and restoration projects, water quality improvement projects, educational programs, and public recreation opportunities.

The Port was one of eleven ports selected by the American Association of Port Authorities (AAPA) and the U.S. Environmental Protection Agency (EPA) to participate in a two-year Environmental Management System (EMS) project aimed at bringing ports together to share strategies for successful EMS implementation. The Port is proud to be a mentor to other ports pursuing EMS development.
• Marine staff conducted public outreach as part of its Riverbank Management Plan and Marine Terminals Master Plan (MTMP). Projects associated with these plans enlisted the public participation and included the following:
  o The Port, in cooperation with the City of Portland’s Bureau of Environmental Services (BES) and Americorps, provided an education field trip for Portland Public School Students. Port and City staff visited classrooms to introduce students to the importance of native plants to healthy rivers, and students visited riverbank areas to collect litter and debris, plant native vegetation, and conduct water quality testing.
  o The Marine Department continued to contract with the Multnomah Youth Cooperative (MYC) to manage 1,500 feet of shoreline along West Hayden Island. MYC volunteers managed “green spaces” on the island, focusing on non-native vegetation removal, re-vegetation with native species, and site monitoring.
  o Marine staff continued to conduct workshops for the Native American Youth Association Summer School Program. Staff led students through a native plant identification exercise, habitat studies through Geographic Information System (GIS) mapping, and a Terminal 6 riverbank and facility tour.

• Environmental Affairs staff hosted a tour for a Siletz Tribe youth group to educate them about stormwater management improvements completed as part of the Toyota Redevelopment Project at Terminal 4.

• PDX environmental staff made presentations to the following groups on the Port’s new deicing system, which reduces glycol discharges and resulting water quality impacts to the Columbia Slough:
  o The Columbia Slough Watershed Council;
  o Environmental managers from the Indianapolis Airport;
  o The Water Environment School through Clackamas Community College; and
  o The American Institute of Chemical Engineers.

• The Port maintains several mitigation sites through its Mitigation Management Program. These sites are designed to provide a number of wildlife and community benefits, including restoring wetland hydrological functions, controlling the spread of invasive weeds, and providing greenspaces in highly urbanized areas. During the 2003-2004 permit year, the Port utilized these mitigation sites to provide a number of educational and outreach opportunities for the public, including the following:
  o The Port hosted public site visits and conducted tours for community groups to illustrate the environmental benefits of the mitigation sites.
  o The Port provided mitigation site access to Portland State University students conducting environmental research for school projects.
  o The Port hosted a City of Portland Bureau of Environmental Services Naturescaping for Clean Rivers workshop at the Vanport Wetlands mitigation site.
  o The Port continued to make information about the mitigation sites available to the public through its web site (www.portofportland.com).
CHALLENGES AND SOLUTIONS

- Resource limitations make it difficult to fund the many grant requests the Port receives. After performing an evaluation of its current processes, the Port decided to discontinue its formal Grants Program. However, as has been done in the past, the Port will continue to consider requests to participate in events conducted by established organizations with a demonstrated record of achievement that are committed to working collaboratively with the Port on topics of mutual interest.

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

- Community Affairs staff will continue to publish the Port Currents and Portside newsletters.

- The Port will continue to remain active as a member of the CSWC and provide assistance in the implementation of the Columbia Slough Watershed Action Plan.

- Port staff will continue to install colorful markers at storm drains to encourage pollution prevention BMPs.

- The Port will continue, though its various programs and plans (e.g., Riverbank Management Program, Mitigation Management Program, Marine Terminals Master Plan 2020), to identify and provide opportunities for public awareness and education on the importance of water quality protection.
The Port continues to educate and inform staff and tenants on stormwater pollution control and water quality management. The Environmental Affairs Department and operating areas maintain copies of training agendas, lists of attendees, and presentation summaries.

KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- The Port’s Executive Director continued to support the Port’s environmental programs by distributing Port-wide memorandums on environmental objectives.

- The Port created a mobile information booth to increase employee environmental awareness. This display highlighted employees’ environmental stories and accomplishments, as well as provided employees with information on the Port’s environmental programs and practices, including a question and answer brochure on stormwater.

- The Port provided three training sessions to construction inspectors, engineers, and aviation environmental staff on the Port’s Required Environment Practices for Construction. The training sessions addressed practices aimed at preventing stormwater contact with equipment operations (e.g., vehicle servicing) that could potentially contribute contaminants if not properly managed. The completion of these training sessions fulfilled one of Port’s Environmental Targets for the 2003-04 fiscal year.

- The Port continued to offer staff and tenants a variety of additional training through seminars, educational meetings, information exchanges, and presentations. Subjects covered included the following:
  - South Shore Wellfield Wellhead Protection Program
  - Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) training annual refresher course, completed by Port staff with previous 24- and 40-hour training
  - Spill Prevention Control and Countermeasures (SPCC) Plan Review
  - PDX Stormwater Awareness Training—Review of BMPs, new deicing system overview, 1200-COLS permit requirements, and dewatering permit requirements
  - PDX Deicing/Anti-Icing Awareness Training—BMPs and spill prevention and response protocols
  - PDX Deicing/Anti-Icing System Operations and Maintenance Training (PDX Maintenance Department)
  - Construction Dewatering
• The Port’s EMS
• Asbestos and lead paint

• PDX created and distributed wallet-size cards (a.k.a. “green cards”) with listed spill response procedures and contact phone numbers to staff responsible for emergency response. The Port also continued to distribute emergency response contact information via email. Emergency contact information is also posted on the first page of the Port telephone directory and can be accessed through the PortNet computer network.

• Environmental Affairs staff coordinated with DEQ and the U.S. Coast Guard to provide spill awareness training to the crew of Dredge Oregon.

• Port staff attended the following professional conferences and seminars during the 2003-2004 permit year:
  • Oregon Association of Clean Water Agencies (ORACWA) Stormwater Summit 2004
  • ORACWA Annual Conference 2003
  • Oregon Water Resources Department Oregon Water Law Conference
  • 2003 Northwest Environmental Conference and Tradeshow
  • Environmental Law Education Center (ELEC) Dredging 2004 Conference
  • ELEC Clean Water Conference
  • American Association of Airport Executives (AAAE) Environmental Conference
  • AAAE Deicing and Stormwater Conference
  • Government Institute’s Environmental Boot Camp
  • Resource Planning Associates Stormwater Treatment Technology Seminar
  • City of Portland Stormwater Management Manual Training

• Port environmental staff continued to maintain and make available to employees and tenants copies of stormwater-related documents such as management plans, programs, procedures, and policies. Environmental Affairs staff and operating area managers relayed informational updates pertaining to stormwater management via email and through meetings. Environmental Affairs staff also distributed informational materials (e.g., brochures, pamphlets, reports) covering upcoming conferences, training seminars, and stormwater-related environmental issues.

• Port tenant coordinators in Aviation, Marine, and Property and Development Services continued to distribute information to tenants through the Tenant Management Program. The tenant coordinators develop best management practices, distribute technical information, and provide technical assistance to the tenants. Tenant Coordinators within each operating area selected appropriate outreach forums and encouraged tenant participation.
- Port staff from the various operating areas, departments, and divisions collaborated on the development of new Environmental Objectives and Targets for fiscal year 2004-2005. The objectives established for 2004-2005 included *Minimizing Impacts to Water Resources*, a category which includes the following specific targets:
  - Reduce the amount of treated timber chocks at Terminal 6 container yard by June 2005;
  - Complete water efficiency evaluations for three Port water systems by June 2005; and
  - Implement four water conservation measures from the *Water Conservation Plan for PIC* by June 2005.

- PDX staff worked with co-permittees to revise and update the maps and tenant lists of the PDX SWPCP. The updates to the SWPCP were submitted to DEQ in June 2003.

- The Port continued to require PDX industrial permit and deicing permit co-permittees (tenants) to attend Port-sponsored training events and co-permittee meetings, conduct employee education on the SWPCP and the Spill Response Plan, and submit to the Port documentation of permit compliance upon request.

- PDX staff hosted BMP Committee meetings with tenants every two months. A variety of water quality-related topics were covered in these meetings, including stormwater permit compliance, the PDX SWPCP, deicing system updates, SPCC rules, BMP revisions, the annual “Spring Cleanup”, and tips on appropriate stormwater collection practices.

- PDX staff developed and distributed a spill plan template and pertinent reference information (e.g., agency guidance for developing spill plans) to assist tenants with developing spill plans for their facilities.

- Property and Development Services continued to utilize its SWMP during the permit year. The SWMP provides general guidance to property managers and tenants at industrial properties on stormwater issues, including best management practices specifically tailored to common industrial operations and maintenance.

- Property and Development Services staff continued to use monthly departmental meetings to discuss progress made in controlling stormwater contaminants in the Port’s industrial parks.

- Property and Development Services staff presented a Power Point slide show on catch basin inspection and repair to the department’s Property Managers.

- Property and Development Services staff maintain spreadsheets of collected water sample data from mitigation sites. The spreadsheets are accessible to department staff.
CHALLENGES AND SOLUTIONS

- The Port must manage a considerable amount of stormwater-related information for its many properties. It can be a challenge to effectively distribute the pertinent information to employees and tenants. The Port will continue to improve employee access to environmental information that supports stormwater programs (data, procedures, maps, etc.), and staff will continue to receive orientation and training on the EMS and GIS systems, which are increasingly being used as tools to organize, present, and distribute information.

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

- Environmental and Marketing Communications staff will continue internal outreach efforts to encourage Port employees to incorporate environmental stewardship into daily business operations.

- The Port’s Environmental Objectives and Targets will continue to serve as a quantitative way for the Port to mark its progress towards meeting its environmental goals, including the protection of water resources through appropriate stormwater management practices.

- The Port will continue to provide EMS “general awareness” training to new employees during employee orientation using a web-based training program.

- The Port will continue to include environmental stories in its publications (e.g., Portside, Port Currents) to increase environmental awareness throughout the organization.
| Port-OM1 | Evaluate and update stormwater maintenance practices that affect water quality at stormwater quality facilities. |

The Port’s operating areas continue to develop, promote, and implement specific stormwater maintenance practices at Port and tenant facilities. Many of the maintenance practices are well established, consistently meeting the requirements of NPDES and other permits, including the following:

- NPDES Anti-icing/Deicing Waste Discharge Permit, No. 101647 (PDX)
- NPDES Construction Dewatering Discharge Permit, No. 101588 (PDX)
- NPDES 1200-CA Stormwater Discharge Permit, No. 107018 (Port-wide)
- NPDES 1200-COLS Industrial Stormwater Discharge Permits, Nos. 107220 and 111492 (PDX and Terminal 6, respectively)
- NPDES 1200-Z Industrial Stormwater Discharge Permit, No. 103594 (Terminal 6)
- City of Portland Pretreatment Permit (PDX)

Operating area staff are responsible for evaluating practices at their respective facilities, and for updating site-specific SWPCPs or other environmental management plans as needed. The Environmental Affairs Department and the Port’s MSWMP provide general guidance on stormwater management issues.

**KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)**

- The Port continued to coordinate with the Multnomah County Drainage District (MCDD) through an intergovernmental agreement that covers the maintenance of ditches, pipes, and sumps within PIC and portions of PDX.
- The Port renewed its Construction Dewatering Permit for PDX/PIC (DEQ File No. 101588) during the 2003-2004 fiscal year. The new permit was signed in January 2004 and covers the period extending through December 2009.
- The Port initiated operation of a new deicing system at PDX in Fall 2003. The system is designed to reduce glycol discharges and associated water quality impacts to the Columbia Slough. PDX staff monitored and evaluated the effectiveness of the system throughout the deicing season, and developed operating protocols and quality assurance/quality control (QA/QC) measures to supplement the deicing system’s Operations and Maintenance (O&M) Manual.
- The Port continued to develop and update a comprehensive collection of stormwater maps for its facilities to illustrate the location of stormwater infrastructure and controls (e.g., oil/water separators). As part of the effort to collect stormwater system information for all Port facilities, including properties operated by tenants, the Port continued to require tenants to submit electronic as-built drawings for all construction activities.
• Property Maintenance staff worked to clear vegetation around several outfalls and culverts during the permit year to provide better access for inspections and illicit discharge monitoring.

• Property and Development Services hired a contractor to inspect, clean, and repair as necessary, all catch basins located at the industrial parks, and to install catch basin inserts to prevent sediment/contaminants from entering the stormwater system.

• Property and Development Services continued its program of providing catch basin inserts to its tenants with stormwater discharges.

• Marine staff completed routine stormwater maintenance activities throughout the permit year. Activities included regular catch basin inspection and cleaning, oil/water separator maintenance, inlet filter maintenance and replacement, and facility sweeping.

• Marine staff tracked maintenance and environmental inspection activities through a computerized maintenance tracking system.

• Marine staff continued stormwater BMPs on leased Marine Terminal properties through the Marine Tenant Management Program. Pollution control practices outlined in the BMPs include the following:
  o Using “dry cleaning” techniques (e.g., sweeping) for outdoor surfaces cleaning;
  o Directing contaminated runoff to sanitary sewers instead of storm sewers;
  o Incorporating landscaped areas into facility design;
  o Stenciling storm drains with “Storm Drain – No Dumping” or similar warnings; and
  o Using lead-free, water-based paints when painting asphalt or other ground features.

• PDX continued to host its annual “Spring Cleanup” program at PDX by providing dumpsters for tenants’ scrap metals and other solid waste materials. The program was expanded during the permit term to include the PDX Cargo Center.

• The Port continued to provide a scrap metal recycling bin for tenant use at the Property Maintenance facility.

• PDX staff regularly performed the following routine maintenance practices:
  o Boom deployment, maintenance, and/or replacement;
  o Inlet filter installation, maintenance, and/or replacement;
  o Detention/quiescent pond cleaning;
  o Vegetative swale maintenance;
  o Oil/water separator maintenance;
  o Outfall maintenance;
  o Catch basin inspection and cleaning;
Facility sweeping; and
Preventative maintenance inspections of underground storage tanks (USTs), aboveground storage tanks (ASTs), and industrial activity areas.

- Property and Development Services staff continued to monitor the performance of wool-based catch basin inserts used at the industrial parks, and work with the manufacturer of these inserts to improve upon their design.

- Property and Development Services staff continued to identify and inventory “orphaned” stormwater system components (e.g., catch basins) at its industrial properties, and worked to add these features to a maintenance program.

- Property and Development Services staff managed landscaped areas within the Industrial Parks and Marine Terminals to provide stormwater quality improvements. Crews removed and disposed of vegetative debris, scrap metal, and miscellaneous garbage. They composted or chipped vegetative debris to create mulch, and disposed of metal and miscellaneous garbage at appropriate facilities.

- Property and Development Services staff continued contracts for parking lot sweeping at its industrial properties.

CHALLENGES AND SOLUTIONS

- The Port has many properties and tenant facilities at which stormwater system improvements frequently occur as part of other development projects. The Port’s Engineering Department maintains updated maps of stormwater systems for its properties by tracking Port-initiated improvements and requiring tenants to submit electronic as-built drawings for all construction projects.

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

- The operation and maintenance of Port stormwater infrastructure will continue at present levels, unless concerns develop that warrant modifications to maintenance frequency.
Evaluate operations and maintenance of Port roads and vehicle maneuvering areas to determine water quality impacts. Recommend procedures or practices to reduce the discharge of pollutants to the stormwater system.

The Port operating area staff maintain the roads and pavement in their respective areas. Site-specific SWPCPs provide general guidance on stormwater issues pertaining to road maintenance. Road maintenance generally includes paving, patching, sweeping, deicing, surface repairs, and painting.

**KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)**

- Port staff ensured that facilities were swept on a regular basis. PDX crews swept the airfield and construction contractors swept paved construction sites daily; Marine crews (T-6) swept their facility annually; and Property and Development Services staff contracted with private service providers to have the industrial parks swept on a regular basis.

- Port maintenance crews and contractors placed swept materials in storage bins or stockpiled them to prevent contact with stormwater runoff. The Port appropriately profiled and disposed of these materials.

- Port staff (maintenance and environmental) continued to maintain sampling and disposal-tracking records.

- The Port recommended procedures and practices for reducing the discharge of pollutants to stormwater systems through its public outreach campaign of distributing curb/pavement markers and informational posters (See Port-PI1).

- The Port’s new deicing system at PDX, which was designed to protect water quality by collecting deicing stormwater runoff and controlling discharge into receiving waters or the sanitary sewer, became operational in Fall 2003. PDX staff monitored and evaluated the system’s performance throughout the deicing season, and developed operating protocols and QA/QC procedures to supplement to system’s O&M Manual.

- Port environmental staff (PDX) continued to monitor and evaluate deicing activities with the assistance of consultants, co-permittees, the DEQ, and the City of Portland BES.

- The Port documented deicing BMPs in its annual report for PDX’s Runoff Control Plan, which was submitted to the DEQ.
• The Port submitted the results of PDX’s winter collection program in the 2003/2004 Annual Deicing/Anti-icing Management Report, which was submitted to the DEQ.

• PDX continued its use of glycol recovery vehicles for glycol collection, thus reducing the potential for this material to combine with stormwater and ultimately enter receiving waters.

• PDX staff continued to use the Deicing and Anti-Icing Runoff Control Plan to set the strategy for controlling, collecting, and disposing of deicing and anti-icing materials.

• PDX Deicing Permit co-permittees carried out stormwater BMPs in their routine activities, including the use of forced-air deicing methods for aircraft, employment of a two-step chemical application process for pavement deicers, varying aircraft deicing material mix ratios based on ambient temperatures (to be performed by the airlines), and conducting ongoing research on new deicing technologies.

• PDX environmental staff reviewed Port and tenant aviation construction projects for environmental issues, providing design input to ensure all appropriate environmental safeguards were implemented.

• At PDX, the Port hired a contractor to implement new, environmentally-sensitive measures for removing rubber from the runways. The new approach utilized a machine that contained and recycled the water used in the cleaning of the runway surface, eliminating surface water runoff from the process.

• The Port carried out routine pavement maintenance throughout the year, including surface repairs and painting. Crews continued to use specialized tools and techniques to properly handle waste and cleaning products. The Port maintains indoor storage areas, equipment wash-bays, debris unloading areas, and toluene recovery systems associated with its pavement maintenance operations.

CHALLENGES AND SOLUTIONS

• No unusual challenges presented themselves during the permit year with respect to the operations and maintenance of Port roads and vehicle maneuvering areas.

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

• The Port will continue to maintain roadways and other pavement in ways that minimize water quality impacts from stormwater runoff.

• Port staff will continue to install colorful markers at storm drains and distribute outreach materials to encourage pollution prevention BMPs.
Review landscape maintenance practices. Recommend the use of vegetation that reduces the need for pesticides, herbicides, fertilizers, and water, where practical.

Property Maintenance staff are responsible for the landscaping and property maintenance of the Port’s industrial parks, marine terminals, and mitigation sites. PDX staff handles landscaping and property maintenance at its facilities. Marine Facility Maintenance staff are responsible for maintaining the railyards, asphalt areas, and portions of the riverbank at Terminal 6. The Port often coordinates with the City to provide landscaping plans for natural resource enhancement projects on Port-owned property, such as areas within the Columbia Slough watershed.

KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- The Port developed Pesticide, Herbicide, and Fertilizer Use Plans for property maintenance personnel and property managers. These Plans describe Port practices for using pesticides, herbicides, and fertilizers on Port property, and specifically document procedures aimed at minimizing the use of chemicals. The Plans include appendices that identify all chemical pesticides, herbicides, and fertilizers used by Property Maintenance personnel.

- The Port developed an Herbicide Use Plan for Marine Facility Maintenance personnel. This Plan describes Port practices and general principles governing herbicide use at the Port’s marine terminals. The Plan includes an appendix that identifies all chemical herbicides used by Marine Facility Maintenance personnel.

- The Environmental Affairs Department developed a Technical Guidance Document for Pesticides, which provides reference information to Port staff who use or manage the use of pesticides on Port property. The completion of this document fulfilled one of the Port’s water resources-related environmental targets for the 2003-2004 fiscal year.

- Port landscape maintenance staff continued to employ a program of integrated pest management (IPM), which provides the framework for all pesticide and fertilizer applications. The IPM program establishes a threshold of acceptable appearance, damage, infection, etc. for landscaped areas. Once that threshold has been crossed, corrective measures are taken using the least toxic, most effective methods/materials available.

- The Port initiated a pilot project with the Portland Water Bureau to evaluate a new irrigation control technology that conserves water by allowing landscape irrigation to be turned on only when it is needed.

- The Port continued to implement numerous BMPs that indirectly address pesticide/fertilizer usage (e.g., BMPs related to stormwater quality, chemical
handling, etc.), and continued to specifically address pesticide/fertilizer management through the following BMPs:

- Port of Portland Property Development Tenant Program, BMP 005: Pesticide, Herbicide, and Fertilizer Management
- Port of Portland Marine Tenant Program, BMP 018: Fumigation and Pesticide Management

- As documented in the Port’s various written plans and BMPs relating to pesticide/fertilizer usage, Port maintenance staff continued to work to minimize the use of pesticides, fertilizers, and irrigation water in the course of its maintenance activities. Examples of measures employed and guidelines established to accomplish this included the following:
  - Adherence to manufacturer’s instructions for storage, handling, and application of chemicals;
  - Following guidelines provided by agencies such as the U.S. Department of Agriculture (USDA), Oregon Department of Agriculture, Portland Parks and Recreation Department, and the Multnomah County Vector Control;
  - Proper disposal of pesticide containers, dead vermin and pests, and other related wastes;
  - Increased emphasis on manual and mechanical methods for weed removal;
  - Selection of herbicide products that are approved for aquatic use and with limited persistence in soil;
  - Selection of plants that are well-suited to site conditions with few pest problems;
  - Use of mulch and drip irrigation systems to conserve water and improve water retention;
  - No fertilizer use airside (inside the security fence) at PDX;
  - When appropriate, use of slow-release fertilizer products that minimize “application overages” and help prevent nitrate leaching into the groundwater;
  - Use of mycorrhizae (symbiotic fungi) to improve water uptake by plants;
  - Improvements in chemical application techniques:
    - Emphasis on spot-spraying as opposed to broadcast spraying
    - Use of small fertilizer spreaders at curbsides to reduce “over spray” and the potential for fertilizers entering stormwater systems
  - Planting (or replanting) of areas without groundcover, such as constructed areas where vegetation has not been established;
  - Mowing at critical times during the growing season to maximize native seed release and limit weed release;
  - Use of alternative mosquito control methods:
    - Provide bat houses to increase bat presence on sites
    - Improve habitat for dragonfly/damsel fly species

- Port staff continued to coordinate with state and local agencies on current vegetation management techniques, regulations, and environmental concerns.
• The Port continued to use native plant species for vegetating its riverbank areas. The Terminal 4 Toyota Redevelopment Project, for example, included the restoration of an approximately 1,700-foot stretch of riverbank to its native conditions. More than 11,000 native trees and shrubs were planted as part of the project.

• The PDX Wildlife Management Department established a list of acceptable native plants for use by PDX Maintenance at Portland International Airport.

• Port staff made efforts to improve native species diversity and establishment, especially along watercourses. Examples of such efforts include the following:
  o Planting robust native plants that require less irrigation and long-term care than non-natives;
  o Preferentially choosing bio-engineering methods for erosion control near streams and other sensitive areas;
  o Fencing out foraging animals from sensitive areas; and
  o Continuing a program (in cooperation with BES) to remove invasive species along riparian corridors.

• The Port continued to require chemical applicators to obtain and maintain licenses issued by the Oregon Department of Agriculture (ODA), which requires that pesticide applicators receive 40 hours of continuing education training per 5-year license term.

• PDX Maintenance staff continued to implement a number of landscape maintenance practices aimed at improving stormwater quality at the airport, including the following:
  o Maintaining the integrity and function of bioswales by keeping them full with healthy, mature vegetation;
  o Limiting the amount of turf and shrub fertilizer that falls on hard surfaces (e.g., sidewalks, roads, parking lots) by using small fertilizer spreaders, and blowing unintentional applications to these areas back onto the target areas; and
  o Using slow-release nitrogen fertilizers to limit leaching into groundwater and runoff into surface waters.

• Port staff continued to employ a variety of techniques to minimize chemical applications, including:
  o Biological controls;
  o Physical controls (e.g., mowing, burning, flooding, grazing);
  o Cultural selection (i.e., the selection of the proper plant species for the area); and
  o Field surveys to assess pest conditions and limit unnecessary chemical applications.

• Marine Facility Maintenance crews continued to be involved with riverbank enhancement projects, including plantings and general maintenance activities.

• Property and Development Services staff continued to maintain a database that tracks pesticide usage on all properties managed by the department.
Property and Development Services staff provided guidance on planting plans for erosion control at construction sites, promoting the use of native herbaceous species that are fast germinators.

CHALLENGES AND SOLUTIONS

Ongoing evaluation and development of Port landscape maintenance programs and practices has allowed many of the challenges associated with stormwater pollution from landscape maintenance to have been met. The Port continues to evaluate the performance of its landscape maintenance practices and identify potential improvements by conducting ongoing information reviews to stay current on the most environmentally responsible methods and techniques for pest control and irrigation.

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

The Port will continue to minimize its use of pesticides and fertilizers through existing programs.

The Port will continue its participation with the Portland Water Bureau in a pilot project to evaluate a new irrigation technology that conserves water by allowing landscape irrigation to be turned on only when it is needed.

The Port will continue to use environmentally sensitive landscape maintenance practices, such as using recycled organic materials for mulch and compost.
Develop a program to reduce the discharge of pollutants to the stormwater system from existing and developing industries on Port property, particularly focused on those that are not already regulated by other NPDES requirements.

The Port addresses pollutant discharges to its stormwater systems through lease agreements. These agreements cover substantive and procedural issues, such as property inspections, stormwater permits, BMPs, training of tenant personnel, and spill response requirements. Port Ordinance No. 361 also authorizes Port staff to inspect tenant facilities, restrict connections to the MS4, and impose penalties to known violators.

Additional agreements and contract provisions help control pollutant discharges to the Port’s stormwater system. These include, but are not limited to, construction dewatering agreements, storage tank use agreements, right-of-entry permits, operating permits, and mobile fueling permits.

The Appendix includes lists of the tenants on Port-leased property with NPDES permit responsibilities.

KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- The Port continued its Tenant Management Policy that allows for Port oversight of tenant operations. The procedures covered under the policy include the following topics:
  - Development and selection of standard environmental language for tenant agreements (e.g., leases, permits, right-of-entry, easements);
  - Educational outreach; and
  - Inspections and audits of tenant facilities.

- The Port continued to require new developments with proposed underground injection systems to meet the DEQ’s Underground Injection Control (UIC) Program certification requirements.

- Marine staff continued to implement the Marine Tenant Program with several BMPs pertaining to stormwater, such as the following:
  - BMP012 — Underground Storage Tanks (UST) and Above Ground Storage Tanks (AST)—relates to requirements for proper handling and storage of materials; and
  - BMP017 — Building and Grounds Maintenance— covers proper pavement maintenance practices for stormwater protection.

- Marine staff continued to conduct regular inspections of Port-leased properties. The department inspects for environmental safety, facility maintenance, and engineering compliance.
• PDX environmental and maintenance staff worked together to remove the last known piece of polychlorinated biphenyl (PCB)-containing electrical equipment from the airport in late spring. This equipment, which consisted of a regulator for an airfield lighting system, was replaced with one that utilizes mineral oil for cooling and insulation rather than PCBs.

• PDX crews continued to operate a paint distillation machine to recover toluene from waste paint. During the 2003-2004 fiscal year, the machine recovered 390 gallons (3,120 pounds) of toluene from waste paint, which represents a 43% recovery rate.

• Property and Development Services continued to implement its Stormwater Management Plan.

• Property and Development Services staff continued the Mitigation Management Program, which included monitoring of sediment and water quality. Collected data help establish baseline conditions at mitigation sites.

• Property and Development Services staff continued to provide oversight of Port and tenant activities at industrial areas. This effort has led to an extensive collection of stormwater-related information, including a tally of regulatory permits and risk factors affecting stormwater pollution. This information is used to develop outreach goals and plan monitoring activities.

CHALLENGES AND SOLUTIONS

• The Port has hundreds of tenants that are on lease agreements that have been in effect for many years. Some of these tenants and their activities have not been well documented in the past. The Port, and in particular Property and Development Services, has made extensive efforts to review tenant operations and stormwater management practices. Additionally, all new tenants must have appropriate stormwater use language written into their leases.

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

• The Port’s operating areas will continue to monitor tenant activities under their jurisdiction to reduce the potential for stormwater pollution.

• The Port will continue to review new development project plans as needed to ensure adequate stormwater controls are installed, and to ensure that those control systems will be properly operated and maintained.

• The Port will continue to comply with the South Shore Wellfield Wellhead Protection Program requirements at its facilities, and will be available to provide technical assistance to its tenants within the groundwater protection boundary.
The Port has created the following documents that establish reporting protocols for spills, define roles and responsibilities, identify notification requirements, and address other general safety issues:

- Portland International Airport Spill Response Plan
- Portland International Airport Spill Prevention Control and Countermeasures (SPCC) Plan
- Portland International Airport Stormwater Pollution Control Plan
- Marine Terminal 6 Spill Response Plan
- Marine Terminal 6 Stormwater Pollution Control Plan
- Property and Development Services Stormwater Management Plan

Certain operating area industrial stormwater permits (1200-COLS and 1200-Z) require tenant spill response plans, and the Port uses lease agreements to ensure compliance. Tenants are required to prepare a plan, maintain on-site spill response kits, and provide proper training to employees.

Emergencies and spills on Aviation properties are reported directly to the PDX Communications Center; emergencies and spills on Marine properties are reported to the Marine Security Office; and for areas outside the boundaries of Aviation and Marine Terminals, the Port maintains a 24-hour Environmental Hotline as the principal means of reporting environmental emergencies. Hotline calls are routed to the appropriate contacts.

The Port continued to distribute emergency response contact information via email. Emergency contact information is also posted on the first page of the Port telephone directory and can be accessed through the PortNet computer network. PDX has issued wallet-size cards (a.k.a. “green cards”) with listed spill response procedures and contact phone numbers to staff responsible for emergency response.

**KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)**

- The Port continued to rely on emergency response plans in dealing with emergency situations at Port facilities. The plans establish roles and responsibilities within the organization for emergency/spill response and cover other important information, such as reporting procedures, “reportable quantities,” agency and internal notification requirements, hazardous waste concerns, and general safety.

- Port staff encouraged tenants without spill prevention and response plans to develop them for their facilities. Lease agreements require tenants to comply with Port SWPCPs, including BMPs for spill prevention and response.
• The Port continued to incorporate into its construction specifications *Environmental Practices for Construction*, which include measures for spill prevention and response.

• The Port continued to implement its Stormwater Management Plan for Class V Underground Injection Systems, which addresses spill prevention and response.

• PDX staff continued BMPs for Port and tenant operations that, either directly or indirectly, pertain to spills. These include the following:
  o BMP #1—Spill Response
  o BMP #2—Hazardous Materials Storage and Use
  o BMP #3—Vehicle, Equipment, & Aircraft Washing
  o BMP #4—Aboveground Storage Tank Spill Prevention
  o BMP #5—Aircraft Deicing and Anti-icing Operations
  o BMP #6—Portable Glycol Above Ground Storage Tank Spill Prevention
  o BMP #7—Aircraft Sanitary Waste Disposal
  o BMP #8—Regulated Waste Identification and Disposal
  o BMP #9—Aircraft Fueling Operations
  o BMP #10—Underground Storage Tank Spill Prevention

• The Port remained an active member of the City’s Spill Committee.

• Port staff updated the PDX SPCC in September 2003 to include new tank information for the PDX Port Maintenance facility and the Port Fire Department.

• PDX staff developed spill procedure cards which contain a bulleted list of spill response procedures. The cards were finalized in September 2003 and distributed to PDX environmental staff.

• Marine staff continued to participate in spill response programs through the Maritime Fire and Safety Association and the Clean Rivers Co-op.

• Aviation environmental and maintenance staff, Port spill response contractors, and PDX Aircraft Rescue and Firefighting participated in a spill response drill.

### CHALLENGES AND SOLUTIONS

• Even with written plans in place and preventive measures employed, spills occasionally occur. The Port will continue to evaluate the effectiveness of its procedures and revise its spill control plans, as necessary, to further reduce the potential for spills. The Port will also continue to maintain rapid spill response capabilities to adequately address spills when they occur, and prevent the release of spilled materials to the stormwater system.
PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

- The Port will continue to develop its information resources to provide greater oversight of Port, tenant, and contractor operations.
The Port regularly distributes information to employees and tenants on the proper disposal of hazardous materials. Staff and tenant meetings are the most common forums for training and information sharing. The Port hosts BMP Committee meetings or may contact tenant representatives directly, as necessary.

The Port provides specialized training on hazardous waste handling to staff. The Port’s Risk Management group maintains a Port-wide inventory of hazardous materials used throughout Port-managed properties.

**KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)**

- The Port completed a Technical Guidance Manual for Pesticides, which fulfilled one of its stated environmental targets for the 2003-2004 fiscal year. This document provides reference information to Port staff who use or manage the use of pesticides on Port property, and includes discussions of pesticide active ingredients, chemical compositions, fate/transport/persistence, and environmental effects.

- The Port distributed hazardous waste information and updates to operating area staff and tenants.

- Port environmental staff and maintenance crews worked together to ensure proper handling, storage, and disposal of Port hazardous wastes.

- The Port provided refresher course training to staff members with previous 24- and 40-Hour OSHA HAZWOPER training.

- Marine staff continued BMPs under its Tenant Program that address hazardous waste issues, including the following:
  - BMP012—Bulk Liquid Storage Tanks
  - BMP018—Fumigation and Pesticide Management

- PDX crews continued to receive training on the operation of a paint distillation machine, which is used to recover toluene from waste paint (see Port-IND1).

- Property and Development Services staff continued to implement and enforce BMPs under the Property and Development Services Stormwater Management Plan. These BMPs address topics that include vehicle washing and waste management.
CHALLENGES AND SOLUTIONS

• Outreach efforts and distributed information do not always effectively change behaviors relating to chemical materials handling and disposal. The Port maintains an interest in assessing how well its programs influence behavior, and actively seeks ways to improve its information distribution to most effectively control waste management.

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

• The Port will continue to educate and provide information to employees and tenants on proper waste disposal through its existing approaches and programs.
The Port implements the IDDRP in each operating area. The procedures outlined in the IDDRP cover the following topics:

- Enforcement of Port Ordinance 361
- Dry season and wet season field monitoring
- Priority and schedule of major outfall inspections
- Discharge sampling, tracking, and elimination

The Port documents spill prevention and response procedures in the IDDRP, as required by 40 CFR 122.26 (d)(2)(iv)(B); however, each operating area maintains separate area-specific spill response procedures.

The Port originally based its “priority outfall” designations on the results of a 1996 study and previous inspections. Outfalls have since been added or removed from the priority listing as data supports the status change.

During dry season monitoring, if the inspector observes a discharge that is not a permissible discharge as outlined in 40 CFR 122.26 (d)(2)(iv)(B)(1), the inspector documents visual observations, investigative procedures are initiated, and water samples are collected for laboratory analysis, if needed, to aid in determining the source of the flow.

KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- Port staff inspected priority outfalls, updating and revising the listings as appropriate. Environmental staff compiled and reviewed inspection and monitoring data to assess the impacts of non-stormwater discharges.

- Port staff (Marine, PDX, and Property and Development Services) conducted dry and wet season outfall inspections, as well as regular preventative maintenance inspections. These efforts serve to identify illicit discharges, comply with NPDES industrial permit requirements, comply with other regulatory benchmarks, and to generally monitor stormwater management at the Port. Where tenant-owned systems were found to be deficient, Port staff informed the appropriate tenant representative of the needed improvements.

CHALLENGES AND SOLUTIONS

- Despite efforts to educate and inform tenants and employees about proper maintenance procedures and appropriate stormwater management, procedural issues occasionally arise. Port staff continue to work to implement and communicate BMPs (e.g., eliminate all wash water from entering the stormwater system) by providing
frequent reviews of pertinent information to employees and tenants responsible for maintenance tasks.

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

- The Port will continue with regular inspection of stormwater facilities.
- The Port will continue its efforts to control illicit connections and discharges to its stormwater facilities through its existing programs and will evaluate potential new programs.
- Operating area staff will continue to conduct dry and wet season monitoring and facilities inspections.
- The Port will continue to train employees and tenants to prevent illicit connections and discharges.
The Port continues to develop programs to reduce illegal dumping and abandoned waste. Most illegal dumping occurs when tenants vacate Port-owned properties and abandon wastes in the process. Current property management procedures are generally effective at controlling the problem, though the occasional offense still occurs. Regular environmental audits and inspections of tenant operations under the Port’s Environmental Tenant Management Policy is one effective tool for preventing violations.

Property and Development Services maintenance crews perform weekly “sweeps” of Port property and weekly garbage pick-ups. If trash is dumped on or near a mitigation site, the Port hires a contractor to remove it immediately. If a vehicle is abandoned on or near a site, the Port has it towed. If hazardous waste is found, Port staff coordinate with the City and other agencies, as appropriate, to properly isolate and dispose of the waste. Garbage dumped on properties not owned by the Port is reported to the City of Portland. Through an interagency agreement, the City of Portland is also responsible for removing illegally dumped materials found in public right-of-ways (roads).

The Port secures much of its property with fences and locked gates, limiting access to potential violators. In areas where public access must be maintained, the Port posts signs and warnings against illegal dumping.

**KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)**

- The Port continued to conduct regular security checks at most sites and post signs against illegal dumping.
- The Port continued to use environmental contractors for the disposal of hazardous materials.
- PDX Ground Transportation Office staff continued to patrol the taxi hold parking areas for trash and illegal dumping.
- Property and Development Services and PDX maintenance crews maintained a rapid response and clean-up capability to reported violations.
- Property and Development Services staff continued to coordinate with staff from the Port’s operating areas to investigate violations, search for abandoned waste, and identify responsible parties.
• The Port continued its “Spring Cleanup” for PDX tenants, offering appropriate waste disposal measures by providing dumpsters for tenants’ scrap metals and other solid waste materials. The program was expanded during the permit term to include the PDX Cargo Center.

CHALLENGES AND SOLUTIONS

• Even with the best procedures in place, illegal dumping may still occur. The Port will continue to be prompt in resolution of incidents and seek new preventive measures.

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

• The Port will continue to manage illegal dumping with existing approaches and programs.
The Port incorporates erosion and sediment control BMPs in its many plans, policies, and programs. The Port maintains a Construction Stormwater Discharge NPDES 1200-CA permit, File No. 101018 (Port-wide), and tenants may be required to obtain 1200-C NPDES permits for individual construction projects. The Port’s construction specifications include erosion control requirements that apply to all Port projects, regardless of size.

The Port’s NPDES Construction Dewatering Discharge Permit, No. 101588 regulates the discharge of treated excavation wastewater at the PDX and PIC facilities to the storm sewer system.

KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- The Port obtained a renewal of its NPDES Construction Dewatering Discharge Permit, No. 101588, for PDX/PIC. The new permit was signed in January 2004 and expires in December 2008.

- PDX environmental staff continued to implement the requirements of PDX’s NPDES Construction Dewatering Discharge Permit. Permit requirements include the following:
  o Sampling and analysis;
  o Review of results;
  o Visual monitoring of discharge quality;
  o Treatment (if necessary); and
  o Reporting.

- The Port continued to implement erosion control specifications that reference the City of Portland’s Erosion Control Manual.

- The Port continued to include Environmental Practices for Construction in its construction specifications. These specifications apply to all Port construction projects and address a variety of concerns, including erosion and sediment control.

- Port staff regularly addressed erosion control compliance issues during tenant meetings, pre-construction meetings, weekly construction meetings, and monthly site inspections.

CHALLENGES AND SOLUTIONS

- Educating new contractors on the Port’s required construction practices remains a challenge for Port staff. The Port continued to incorporate its Environmental Practices for Construction, which include stormwater controls, in the specifications for all construction projects. Major construction efforts that involve grading and earth movement are generally planned for dry periods, whenever possible, to reduce impact and the potential for violations. The Port also continues to seek effective ways of improving project administration and the management of contractor activities.

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

- The Port will continue to manage new developments with existing approaches and programs.
Port-STR1 When warranted and appropriate based on available water quality monitoring data, develop procedures for construction, maintenance, and monitoring of water quality facilities.

The Port updates and revises its procedures for construction, maintenance, and monitoring of water quality facilities on an as-needed basis. The Port frequently participates in, and contributes to, projects aimed at improving water quality within the Columbia Slough Basin, Columbia River, and Willamette River.

**KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)**

- Port staff continued to regularly monitor and inspect stormwater systems, as required by NPDES permits or as needed.

- The Port’s new deicing system at PDX, which was designed to protect water quality by collecting deicing stormwater runoff and controlling its discharge into receiving waters or the sanitary sewer, became operational in Fall 2003. PDX staff monitored and evaluated the system’s performance throughout the deicing season, and developed operating protocols and QA/QC procedures to supplement the system’s O&M Manual.

- Property and Development Services staff continued to install and monitor the performance of wool-based catch basin inserts used at the industrial parks, and work with the manufacturer of these inserts to improve upon their design.

- PDX staff cleaned Drainage Basin 6 quiescent and detention ponds.

- Property and Development Services staff continued to supplement basin surveys and dry season inspections with photo documentation.

**CHALLENGES AND SOLUTIONS**

- There are many ways to provide treatment for stormwater. An ongoing challenge is to select the best approach or appropriate technology for a specific application. The Port continues to evaluate the effectiveness of its stormwater treatments and seek ways to improve its approaches to stormwater management. The Port also stays current on the latest in stormwater treatment technologies by conducting information reviews and attending related seminars.

- Structural methods of treating stormwater containing dilute concentrations of pollutants have generally not been as effective as reported by manufacturer’s literature. These structural controls appear to work best in areas with higher concentrations of pollutants, such as construction sites where stormwater runoff may...
contain sediments. Source control continues to provide the best opportunity to control dispersed and dilute sources of stormwater pollution. The Port continues to advance its programs/procedures/practices for minimizing stormwater pollution from its various potential sources.

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

- The Port will continue to manage water quality facilities with existing approaches and programs.
Coordinate with applicable agencies working on regulatory aspects of water quality protection, including watershed management, combined sewer overflows, solid waste and recycling, and industrial waste and source control. Cooperate with agencies to implement new source or non-point source control practices where water quality data indicate the need for stormwater quality improvement.

The Port dedicates extensive staff time and resources towards coordination with agencies and organizations that also work on water quality issues. The Port’s environmental staff regularly attend public meetings, hearings, and other forums that cover stormwater regulations and new technologies. Port staff are also active members of workgroups and advisory committees.

KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- The Port was a participant in a technical working group that created the City of Portland’s Columbia South Shore Wellfield Wellhead Protection Reference Manual. An ordinance was adopted by the City in July 2003 that protects the City’s emergency water source by requiring businesses to implement stormwater BMPs based on use of chemicals and quantities above a defined limit. The Port’s tenants were invited to participate in the City’s Bureau of Water Works technical assistance program with help from the Columbia Corridor Association, of which the Port is a member.

- The Port continued to develop its EMS, which integrates agency coordination on environmental issues. The EMS also promotes consistency among stormwater management policies, programs, and plans.

- The Port continued to coordinate with the Multnomah County Drainage District through two IGAs; one for the operation of the PDX deicing system and one for the maintenance of ditches, pipes, and sumps within PIC and portions of PDX.

- As a member of the CSWC, the Port is an active member in the Action Plan Implementation Committee. This committee reviews new priority projects and seeks funding to implement watershed restoration projects.

- The Port remained actively involved with a variety of groups and organizations with projects aimed at improving source and non-point source control practices. Groups and programs include the following:
  - CSWC
  - ORACWA
  - BES Revegetation Program
  - Urban Ecosystem Research Consortium
  - Stakeholder Forum on Federal Wetlands Mitigation
  - Mosquito Control Stakeholders Group
  - Willamette Restoration Initiative
• City of Portland’s River Renaissance  
• City of Portland Watershed Science Advisory Group  
• City of Portland’s South Shore Wellfield Wellhead Protection Program  

- The Port continued to coordinate with a variety of public agencies on stormwater-related projects and programs. These agencies included the following:  
  - USACE  
  - Oregon DSL  
  - Oregon DEQ  
  - MCDD  
  - Multnomah County Vector Control  
  - City of Portland BES  
  - Tri-met  
  - Metro  
  - City of Portland Water Bureau  

- PDX facilities staff expanded the existing pre-consumer food waste program to include the collection of coffee grounds, further reducing the amount of PDX waste going to landfills. The pre-consumer food waste from PDX goes to Nature’s Needs where it is composted.  

CHALLENGES AND SOLUTIONS  

- A common challenge among agencies is addressing the multiple environmental initiatives (regulations, plans, programs etc.) from a watershed-scale perspective. It can be difficult to meet the needs of multi-jurisdictional (federal, state, local) programs and regulations, while also integrating them into a broader watershed context. The Port participates in various committees, councils, and groups, and strives to coordinate its stormwater management efforts with those of others to adequately address the broad range of concerns that exist.  

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR  

- As the South Shore Wellfield Wellhead Protection Program is implemented, the Port will continue to provide programmatic review and technical assistance to Port tenants.  

- The Port will continue to actively coordinate its stormwater management efforts with the efforts of others through active participation in appropriate groups and committees.  

- The Port will continue to work with DEQ and municipalities to address TMDLs in the Municipal Permit Programs.
• The Port will continue its active membership with the CSWC to assist with implementing its Watershed Action Plan.

• PDX is expanding its recycling program by implementing a commingling program in an attempt to increase the volume of recycled material being collected.
In February 2000, the Port of Portland Commission adopted the Port’s Environmental Policy:

“The Port of Portland will achieve its mission through responsible environmental stewardship and proactive environmental programs. The Port will integrate environmental considerations into all aspects of its strategic planning and business decision-making.”

This general policy is promulgated by the Environmental Affairs Department and sets the stage for the Port’s many environmental programs. The Port’s Environmental Policy, along with more specific policies and procedures (e.g., Environmental Water Resources Policy and related procedures) are made available to Port staff through the Port’s EMS. Other plans and programs, which also address stormwater pollution issues, remain in effect, including the Tenant Management Program, the Natural Resource Assessment and Management Plan (NRAMP), and the Riverbank Management Program.

Environmental staff monitor compliance with stormwater regulations and support efforts to meet the Port’s Environmental Objectives and Targets. Environmental staff provide guidance to operating area staff on the development, refinement, and implementation of environmental policies, procedures, and practices.

KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- Property and Development Services staff continued to implement the department’s Stormwater Management Plan.

- The Port completed its MTMP 2020, which integrates environmental considerations into marine facility planning. The MTMP 2020 includes a detailed assessment of environmental conditions at the Port’s marine terminals and identifies aspects and impacts of the Port’s marine activities. The Environmental Action Plan developed in conjunction with the MTMP 2020 identifies targets and planning principles to be considered in future development, including minimizing impacts to water resources.

- The Port continued to include the Environmental Practices for Construction in its construction specifications. These specifications are applicable to all Port construction projects and include measures for hazardous material containment, equipment fueling and servicing, spill prevention and response, and vehicle maintenance.

- As part of the Marine Riverbank Management Program, the Port continued to use native plant species for vegetating its riverbank areas. The Terminal 4 Toyota Redevelopment Project, for example, included the restoration of an approximately 1,700-foot stretch of riverbank to its native conditions.
• The Port continued to implement the Stormwater Management Plan for Class V Underground Injection Systems. Port staff has inventoried, assessed, and registered all known underground injection systems on Port property. Class V injection systems include stormwater drywells, infiltration trenches, and similar systems that do not drain to open surface water.

• The Port continued to update and improve its GIS data to include stormwater facilities and land-use information. Through its GIS system, the Port has developed maps for planning and evaluating stormwater issues and policies.

• The Port continued to develop the NRAMP database to include spatial and temporal data for Port properties. The NRAMP identifies sensitive resource areas and strategies for impact avoidance, minimization, mitigation, and project design. For example, the NRAMP is used for such purposes as identifying wetland resources and invasive species, and for assessing Metro’s Goal 5 implications. Information in the NRAMP is stored in a Port GIS database.

• The Port continued to develop and implement its EMS, which integrates the Port’s environmental policy into planning for and operating its business. The following list represents significant elements of the EMS that were continued through the permit year.

  o Environmental Procedures—The Port continued to develop, refine, and implement environmental procedures that describe how to carry out policies and programs and manage environmental permits.

  o Environmental Objectives and Targets—The Port established and reported progress on its 2003-2004 environmental objectives and targets in the Port’s Environmental Annual Report. During the 2004-2005 objectives and targets setting process, the Port made it a goal to improve integration and linkage with the Port’s business plans.

  o EMS Management Review—The Port conducted an EMS Management Review to assess the suitability, adequacy and effectiveness of the Port’s EMS. Included in this review were the Port’s environmental policy and practices.

  o EMS Training and Communication—The Port provided EMS “general awareness” training to new employees during employee orientation and published environmental stories quarterly to increase environmental awareness throughout the organization.

  o EMS Outreach – The Port continues to be recognized as a leader for its EMS, and was one of eleven ports selected by the AAPA and the EPA to participate in a two-year EMS project aimed at bringing ports together to share strategies for
successful EMS implementation. The Port is proud to be a mentor to other ports pursuing EMS development.

- Environmental Water Resources Policy—The Port worked to improve consistency in BMP development, documentation, interpretation, implementation, and evaluation through new written procedures.

- Environmental Planning Policy—The Port improved upon its written procedures for environmental permits. The procedures help ensure consistency in permit acquisition, amendment, maintenance, renewal, expiration, termination, and transfer.

- The Port continued to manage tenants through the Tenant Management Program in a manner that protects the Port’s assets and environmental resources. The program covers the following topics:
  - Coordination of tenant environmental management activities;
  - Development and selection of standard environmental language for tenant agreements (e.g., leases, permits, right-of-entry, easements);
  - Tenant communications and education; and
  - Implementation of inspections and audits of tenant facilities.

- The Port continued to use Tenant Coordinators to disseminate information to tenants. Tenant coordinators select the appropriate forums for information sharing between the Port and tenants. A group of coordinators met regularly to discuss environmental issues. Accomplishments over the past year include the continuation of the following:
  - Stormwater BMPs for tenants; and
  - Completed assessment and inventory of Properties’ stormwater systems in the Port’s industrial parks, including number of catch basins and stormwater treatment methods.

- Both PDX and Marine staff continued to implement their SWPCPs. Marine’s SWPCP covers both a 1200-Z permit (Columbia River) and 1200-COLS permit (Columbia Slough), while PDX’s SWPCP covers a 1200-COLS for industrial stormwater outfalls.

- The Port continued to implement the Riverbank Management Plan (initiated in 1998), which provides the basis for planning, maintenance and construction decisions along the riverbanks at Marine Terminals. The plan calls for ongoing surveying, monitoring, and BMP implementation.

- The Port provided storm drain markers and informational posters to tenants.

- The Port continued to implement its Mitigation Management Program. Mitigation sites are designed to provide a number of wildlife and community benefits, and are
based upon adaptive management techniques. The Plan includes detailed maintenance and monitoring schedules.

CHALLENGES AND SOLUTIONS

- The diversity of the Port’s properties and activities makes establishing Port-wide policies and coordinating practices related to stormwater a challenge. The Port continues to strive to coordinate its many stormwater management efforts and responsibilities associated with its multiple stormwater-related permits. Internal work groups like the Water Resources Coordination Group, which consists of environmental staff from the corporate office and operating areas, help the Port maintain quality and consistency in its stormwater management efforts.

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

- Port staff from the various operating areas, departments, and divisions collaborated on the development of new Environmental Objectives and Targets for the 2004-2005 fiscal year. The objectives established for 2004-2005 included “Minimizing Impacts to Water Resources”, a category that includes the following specific targets:
  - Reduce the amount of treated timber chocks at the Terminal 6 container yard by June 2005;
  - Complete water efficiency evaluations for three Port water systems by June 2005;
  - Implement four water conservation measures from the Water Conservation Plan for PIC by June 2005.

- The Port will continue to use its Environmental Aspects/Impacts Analysis to focus its environmental efforts in areas that have the greatest potential or actual impact on the environment.

- The Port will continue to work towards documenting and implementing EMS elements.

- The Port will continue to develop its Environmental Database Management System to provide a uniform data management tool for decision making, goal setting and compliance monitoring.

- The Port will continue to provide EMS “general awareness” training to new employees during employee orientation, as well as publish environmental stories quarterly to increase environmental awareness throughout the organization.
As stated in Section 4.0, the Port collects and submits monitoring data to DEQ for the NPDES stormwater permits listed below. This data is not included in the Municipal Permit Annual Report. However, additional information regarding the monitoring data collected for these permits is available through the Port or DEQ upon request.

- NPDES Anti-icing/Deicing Waste Discharge Permit, No. 101647 (PDX)
- NPDES Construction Dewatering Discharge Permit, No. 101588 (PDX)
- NPDES 1200-CA Stormwater Discharge Permit, No. 107108 (Port-wide)
- NPDES 1200-COLS Industrial Discharge Permits, Nos. 107220 and 111492 (PDX and Terminal 6, respectively)
- NPDES 1200-Z Industrial Discharge Permit, No. 103594 (Terminal 6)

KEY ACCOMPLISHMENTS, PERMIT YEAR NINE (FY 03-04)

- The Port performed industrial permit compliance monitoring, dry season inspection monitoring, and site-specific monitoring of wetland mitigation sites during the permit year. The Port also continued to provide financial support to the City for performing land use characterization monitoring, as required by the Municipal Permit.

- The Port completed a pollutant baseload study for PDX to estimate existing pollutant loads and concentrations in PDX stormwater. The pollutant loads were determined through the modeling of annual stormwater runoff rates, considering published pollutant loading concentrations for different land uses, and accounting for published BMP reduction factors for BMPs used at PDX. The purpose of completing the baseline study was to allow cumulative impacts to be assessed and provide a means for the Port to determine if there are ways to avoid stormwater impacts prior to implementing construction projects.

- Port staff collected industrial stormwater samples from representative outfalls at PDX and Marine Terminals in accordance with respective industrial stormwater permit requirements. The samples collected represent water quality of runoff from a wide range of industrial, commercial, and transportation activities.

- The Port purchased database software for tracking Port-wide environmental monitoring data. The first phase of the new system’s implementation, which involves tracking water quality data for NPDES permits, was initiated in March 2004.

- The Port continued to coordinate with its contracted analytical laboratories to obtain data in electronic format, and continued to utilize spreadsheets to analyze data trends from year to year.
• Port staff monitored several mitigation sites during the 2003-2004 permit year for sediment and water quality through its Mitigation Management Program. Water quality monitoring was performed for various parameters (e.g., PAHs, heavy metals, coliform bacteria, and nutrients) at the following wetland mitigation sites:
  o Vanport
  o T5 powerline
  o Randall

CHALLENGES AND SOLUTIONS

• The Port collects a large amount of stormwater data through its various programs and across its different operating areas. Managing this data in a consistent format that serves the purposes of the various programs and meets the needs of each of the operating areas is challenging. The Port continues to develop its Port-wide database for tracking environmental data, and improve its capabilities to analyze data trends from year to year.

• The establishment of “background levels” for certain parameters continues to be a difficult task. The complexity of interactions, the number of interdependent variables, and temporal and spatial variability limit an investigator’s ability to quantify impacts resulting from an individual activity. The Port will continue to seek better ways of establishing background levels for monitoring parameters and for evaluating potential impacts from its activities.

PROJECTED MAJOR ACCOMPLISHMENTS FOR NEXT PERMIT YEAR

• Operating area staff will continue to collect stormwater monitoring data consistent with requirements of the Port’s NPDES stormwater permits.

• The Port will continue to provide financial support to the City of Portland for its land use stormwater monitoring and characterization work, according to the intergovernmental agreement.
# GLOSSARY OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>AAAE</td>
<td>American Association of Airport Executives</td>
</tr>
<tr>
<td>AAPA</td>
<td>American Association of Port Authorities</td>
</tr>
<tr>
<td>AST</td>
<td>Aboveground Storage Tank</td>
</tr>
<tr>
<td>BES</td>
<td>Bureau of Environmental Services</td>
</tr>
<tr>
<td>BMP</td>
<td>Best Management Practice</td>
</tr>
<tr>
<td>BOD$_5$</td>
<td>Biochemical Oxygen Demand</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>CSWC</td>
<td>Columbia Slough Watershed Council</td>
</tr>
<tr>
<td>DEQ</td>
<td>Oregon Department of Environmental Quality</td>
</tr>
<tr>
<td>DO</td>
<td>Dissolved Oxygen</td>
</tr>
<tr>
<td>ELEC</td>
<td>Environmental Law Education Center</td>
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<tr>
<td>EMS</td>
<td>Environmental Management System</td>
</tr>
<tr>
<td>EPA</td>
<td>U.S. Environmental Protection Agency</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information System</td>
</tr>
<tr>
<td>HAZWOPER</td>
<td>Hazardous Waste Operations and Emergency Response</td>
</tr>
<tr>
<td>IDDRP</td>
<td>Illicit Discharge Detection and Removal Program</td>
</tr>
<tr>
<td>IGA</td>
<td>Intergovernmental Agreement</td>
</tr>
<tr>
<td>IPM</td>
<td>Integrated Pest Management</td>
</tr>
<tr>
<td>MS4</td>
<td>Municipal Separate Storm Sewer System</td>
</tr>
<tr>
<td>MSWMP</td>
<td>Municipal Stormwater Management Plan</td>
</tr>
<tr>
<td>MCDD</td>
<td>Multnomah County Drainage District</td>
</tr>
<tr>
<td>MTMP</td>
<td>Marine Terminals Master Plan</td>
</tr>
<tr>
<td>MYC</td>
<td>Multnomah Youth Cooperative</td>
</tr>
<tr>
<td>NPDES</td>
<td>National Pollutant Discharge Elimination System</td>
</tr>
<tr>
<td>NRAMP</td>
<td>Natural Resource Assessment and Management Plan</td>
</tr>
<tr>
<td>O&amp;M</td>
<td>Operations and Maintenance</td>
</tr>
<tr>
<td>ODA</td>
<td>Oregon Department of Agriculture</td>
</tr>
<tr>
<td>ORACWA</td>
<td>Oregon Association of Clean Water Agencies</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>PCB</td>
<td>polychlorinated biphenyl</td>
</tr>
<tr>
<td>PIC</td>
<td>Portland International Center</td>
</tr>
<tr>
<td>QA/QC</td>
<td>Quality Assurance/Quality Control</td>
</tr>
<tr>
<td>SPCC</td>
<td>Spill Prevention Control and Countermeasures</td>
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<tr>
<td>SWMP</td>
<td>Stormwater Management Plan</td>
</tr>
<tr>
<td>SWPCP</td>
<td>Stormwater Pollution Control Plan</td>
</tr>
<tr>
<td>TMDL</td>
<td>Total Maximum Daily Load</td>
</tr>
<tr>
<td>TSS</td>
<td>total suspended solids</td>
</tr>
<tr>
<td>UIC</td>
<td>Underground Injection Control</td>
</tr>
<tr>
<td>USACE</td>
<td>United States Army Corps of Engineers</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>UST</td>
<td>Underground Storage Tank</td>
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<tr>
<td>WPCF</td>
<td>Water Pollution Control Facility</td>
</tr>
<tr>
<td>WRCG</td>
<td>Water Resources Coordination Group</td>
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</table>
APPENDIX

PORT OF PORTLAND TENANT NPDES PERMITS
## Portland International Airport NPDES 1200-COLS Co-Applicants

<table>
<thead>
<tr>
<th>Company Name</th>
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<tbody>
<tr>
<td>Port of Portland</td>
</tr>
<tr>
<td>533 MA L.L.C.</td>
</tr>
<tr>
<td>Air China Cargo</td>
</tr>
<tr>
<td>Airborne Express (ABX Air, Inc. and Airborne Express, Inc.)</td>
</tr>
<tr>
<td>Aircraft Services International Group</td>
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<tr>
<td>Airport Terminal Services, Inc.</td>
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<td>Alaska Airlines, Inc.</td>
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<tr>
<td>Allegiant Air, Inc.</td>
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<tr>
<td>AMC Hangar at PDX</td>
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<tr>
<td>America West Airlines</td>
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<tr>
<td>American Airlines, Inc.</td>
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<tr>
<td>Ameriflight, Inc.</td>
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<td>Aviation Exteriors Portland, Inc.</td>
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<td>Avis Rent-A-Car Systems Inc.</td>
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<tr>
<td>BAX Global, Inc.</td>
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<tr>
<td>Bonneville Power Administration</td>
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<td>Budget Rent-A-Car Systems Inc.</td>
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<tr>
<td>Columbia Forest Products Aviation, Inc.</td>
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<td>Continental Airlines, Inc.</td>
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<td>Delta Air Lines, Inc.</td>
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<tr>
<td>Dollar Rent-A-Car</td>
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<tr>
<td>Empire Airlines, Inc.</td>
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<tr>
<td>Enterprise Rent-A-Car</td>
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<tr>
<td>Evergreen Aviation Ground Logistics Enterprises</td>
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<tr>
<td>Federal Express Corporation</td>
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<tr>
<td>Flightcraft, Inc.</td>
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<tr>
<td>Frontier Airlines, Inc.</td>
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<td>Hawaiian Airlines, Inc.</td>
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<tr>
<td>Horizon Air Industries, Inc.</td>
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<tr>
<td>Jazz Air, Inc.</td>
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<tr>
<td>Kitty Hawk Aircargo, Inc.</td>
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<tr>
<td>LSG/Sky Chefs</td>
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<tr>
<td>Lufthansa German Airlines</td>
</tr>
<tr>
<td>Menlo Forwarding (formerly Emery Worldwide)</td>
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<tr>
<td>Mesa Airlines, Inc.</td>
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<tr>
<td>Mexicana De Aviacion S.A. De C.V.</td>
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<td>National Car Rental Systems Inc.</td>
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<td>Northwest Airlines</td>
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<tr>
<td>Ogden Ground Services, Inc.</td>
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<tr>
<td>PacifiCorp Trans, Inc.</td>
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<tr>
<td>Portland Fueling Facilities Corporation</td>
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<tr>
<td>Estacada Lumber</td>
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<tr>
<td>SkyWest Airlines</td>
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<tr>
<td>Southwest Airlines Co.</td>
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<tr>
<td>MN Airlines, LLC d/b/a Sun Country Airlines</td>
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<tr>
<td>DynAir CFE Services, Inc. a Swissport Company</td>
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<tr>
<td>The Hertz Corporation</td>
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<tr>
<td>United Airlines</td>
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<tr>
<td>United Parcel Service</td>
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<tr>
<td>United States Postal Service</td>
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## Swan Island NPDES Permitted Tenants

<table>
<thead>
<tr>
<th>Tenant</th>
<th>Permit</th>
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</thead>
<tbody>
<tr>
<td>Active Transport Corp.</td>
<td>NPDES 1200-Z</td>
</tr>
<tr>
<td>AGG</td>
<td>NPDES 1200-Z</td>
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<tr>
<td>Becker Trucking</td>
<td>NPDES 1200-Z</td>
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<tr>
<td>Cascade General</td>
<td>NPDES 1200-Z</td>
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<tr>
<td>DSU Peterbuilt</td>
<td>NPDES 1200-Z</td>
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<td>Federal Express Corp.</td>
<td>NPDES 1200-Z</td>
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<td>FedEx Ground Package System</td>
<td>NPDES 1200-Z</td>
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<tr>
<td>Fred Meyer Dairy/Kroger</td>
<td>NPDES 1200-Z</td>
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<tr>
<td>Freightliner LLC</td>
<td>NPDES 1200-Z</td>
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<td>Freightliner Parts Plant</td>
<td>NPDES 1200-Z</td>
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<tr>
<td>Freightliner PDI Center</td>
<td>NPDES 1200-Z</td>
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<tr>
<td>GI Trucking</td>
<td>NPDES 1200-Z</td>
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<tr>
<td>Maletis Beverage</td>
<td>NPDES 1200-Z</td>
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<tr>
<td>Patterson Ranch/SAIA</td>
<td>NPDES 1200-Z</td>
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<td>Roadway Express</td>
<td>NPDES 1200-Z</td>
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<tr>
<td>Rose City Transfer (CSI Crown)</td>
<td>NPDES 1200-Z</td>
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<td>Savage Transload System</td>
<td>NPDES 1200-Z</td>
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<td>UPS</td>
<td>NPDES 1200-Z</td>
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<td>Oregon Transfer</td>
<td>NPDES 100-J</td>
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<td>Freightliner LLC</td>
<td>NPDES 100-J</td>
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<td>DSU Peterbuilt</td>
<td>NPDES 100-J</td>
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## Rivergate NPDES Permitted Tenants

<table>
<thead>
<tr>
<th>Tenant</th>
<th>NPDES 1200-COLS</th>
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</thead>
<tbody>
<tr>
<td>Oregon Steel Mills</td>
<td>NPDES 1200-Z</td>
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<tr>
<td>JR Simplot</td>
<td>NPDES 1200-Z</td>
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<tr>
<td>Consolidated Metco</td>
<td>NPDES 1200-Z</td>
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<td>Steinfield’s</td>
<td>NPDES 1200-Z</td>
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<tr>
<td>Helser Services, Inc.</td>
<td>NPDES 1200-COLS</td>
</tr>
<tr>
<td>Kanto Corp.</td>
<td>NPDES 1200-COLS</td>
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<tr>
<td>Oregon Steel</td>
<td>NPDES 1200-COLS</td>
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<tr>
<td>Beall Transliner</td>
<td>NPDES 1200-COLS</td>
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<tr>
<td>Land ‘O Lakes</td>
<td>NPDES 1200-COLS</td>
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<tr>
<td>Ajinomoto</td>
<td>NPDES 1200-COLS</td>
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<tr>
<td>Helser Terminal</td>
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<tr>
<td>Oregon Metal Slitters</td>
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<td>Rodda Paint</td>
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<td>Pizza Blends</td>
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<tr>
<td>Fisher Mills</td>
<td>NPDES 1200-COLS</td>
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<tr>
<td>JR Simplot</td>
<td>NPDES 100-J</td>
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## Portland International Center NPDES Permitted Tenants

<table>
<thead>
<tr>
<th>Tenant</th>
<th>Permit</th>
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</thead>
<tbody>
<tr>
<td>Yoshida Foods</td>
<td>NPDES 1200-COLS</td>
</tr>
<tr>
<td>Pizza Blends</td>
<td>NPDES 1200-COLS</td>
</tr>
</tbody>
</table>
Appendix

CITY OF PORTLAND NPDES STORMWATER PERMIT
ISSUED TO CO-PERMITTEES:

City of Portland
1120 SW Fifth Avenue
Room 400
Portland OR 97204-1972

Multnomah County

Port of Portland

Oregon Department of Transportation

Multnomah County Drainage District #1

Peninsula Drainage District #1

Peninsula Drainage District #2

* These water bodies have been designated, or drain to water bodies that have been designated, as water quality limited.

Total Maximum Daily Loads/Waste Load Allocations/Load Allocations have been established for these water bodies.

DESCRIPTION OF SYSTEM:

Municipal Separate Storm Sewer System

EPA REFERENCE NO: ORS 108015

Issued in response to Application No. 995938 received May 26, 1993 and Addendum No. 1 to the application, dated May 17, 1994.

This permit is issued based on the land use findings in the permit record.

Tom Bispham, Administrator
Northwest Region

September 7, 1995

Date

PERMITTED ACTIVITIES

Until this permit expires or is modified or revoked, the co-permitees are authorized to implement a storm water management program to reduce the contribution of pollutants in storm water to the maximum extent practicable and to discharge storm water to public waters in conformance with all the requirements and conditions set forth in the attached schedules as follows:

Schedule A - Controls and Limitations .......................... 2
Schedule B - Minimum Monitoring and Reporting Requirements ......................................... 3
Schedule C - Compliance Conditions and Schedules .................................................. *
Schedule D - Special Conditions ........................................................................ 4
General Conditions ....................................................................................... Attached

* The standard Schedule C is omitted from this permit because the Storm Water Management Program and addenda (SWMP) identifies the compliance items and schedules required by the co-permitee and Schedule B requires an annual status report on the SWMP.
SCHEDULE A

Controls and Limitations for Storm Water Discharges from Municipal Separate Storm Sewer Systems

1. The co-permittees shall maintain compliance with this permit and implement the Storm Water Management Program and addenda (SWMP) as submitted in the National Pollutant Discharge Elimination System (NPDES) permit application Parts 1 and 2 (including amendments) currently approved by the Department, and hereby incorporated into this permit by reference, in order to comply with the following conditions required by the Clean Water Act:

a. Reduce the discharge of pollutants to the maximum extent practicable from the municipal separate storm sewer system (MS4).

b. Effectively prohibit non-storm water discharges into the MS4 unless such discharges are otherwise permitted by an existing NPDES permit or special permit issued for short term activities pursuant to OAR 340-14-050. The following category of non-storm water discharges need not be prohibited from entering the MS4, provided appropriate control measures (if needed) to minimize the impacts of such sources, are developed under the SWMP: water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontained ground water infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers; uncontained pumped ground water; discharges from potable water sources; foundation drains; air conditioning condensate; 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 water and discharges or flows from fire fighting activities only where such discharges or flows are identified as significant sources of pollutants to waters of the United States.

Each co-permittee shall be deemed to be in compliance with (a) and (b) above by implementing the SWMP for the MS4s within the co-permittees' jurisdiction.

2. The Department has developed or will be developing total maximum daily loads (TMDLs) including a subsequent implementation program for several of the receiving streams listed on page 1 of this permit. The Department will enter into a memorandum of agreement (MOA) with each of the designated management agencies that describes the activities that they will complete and the time frames for completion of these tasks. The Department will utilize the MOAs in conjunction with this permit as the regulatory tool to insure compliance with the stormwater component of the TMDL program. The MOAs will establish mutually agreeable commitments for each jurisdiction. Compliance with the stormwater component of the MOA will constitute compliance with the TMDL provision of this permit.
SCHEDULE B

Minimum Monitoring and Reporting Requirements (unless otherwise approved in writing by the Department)

1. Storm Water Sampling Points

The co-permittees shall monitor storm water from the sampling points specified in the approved SWMP.

2. Storm Selection Criteria

The co-permittees shall sample storms which are representative of climatic conditions within the area served by the MS4 as specified in the approved SWMP.

3. Monitoring Frequency and Parameters to be Monitored

The frequency of sampling storms and the parameters to be analyzed shall be as specified in the approved SWMP.

4. Sampling Waiver

In the event the co-permittees are unable to collect or analyze any sample or pollutant parameter due to circumstances beyond the co-permittee’s control, a written explanation of the circumstances that prevented the collection or analysis shall be submitted to the Department in the annual report. The co-permittee shall exercise due diligence in collecting and analyzing all samples as required by this Schedule. Circumstances beyond the control of the co-permittee may include abnormal climatic conditions (e.g., fewer storms in the annual reporting period than typically are representative of climatic conditions); weather conditions that make the collection or analysis of samples unsafe or impracticable (e.g., storms of such intensity that sampling would present an unreasonable safety risk); or unavoidable equipment failures caused by weather conditions or other conditions beyond the control of the co-permittee (provided that operator error is not a condition beyond the control of the co-permittee). If more than one sampling event is missed at any storm water sampling point, then re-sampling at that point will occur within twelve months of the second missed storm event.

5. Monitoring Adjustments

In the event that monitoring at an individual location or for an individual parameter is determined by the co-permittees and the Department to be unproductive, the Department will delete or change the monitoring by a permit action letter.

6. Reporting Procedures

Monitoring data shall be summarized to include concentrations of each pollutant for each monitoring site for each storm event monitored, compared to previously collected data, and reported as directed in Condition 7 of this Schedule.

7. System-Wide Report

The co-permittees shall submit by September 1, 1996, and annually thereafter a coordinated system-wide report, for the fiscal year July 1 - June 30, containing:

a. A description of the activities undertaken to implement the components of the SWMP;

b. A description of any changes made, initiated or proposed, to the SWMP;

c. A summary of data, including monitoring data required by Schedule B, that is accumulated throughout the reporting year; and

d. Any water quality improvements or degradation that have been identified.
Special Conditions

1. Each co-permittee shall maintain, through ordinance, interagency agreement, or other means, adequate legal authority to implement and enforce the provisions of this permit.

2. Each co-permittee shall be responsible for the portion of the system-wide report applicable to their individual jurisdiction. Individual co-permittees shall not be held responsible for the noncompliance of another co-permittee with the conditions of this permit.

3. Each co-permittee shall manage storm water in accordance with the current SWMP approved by the Department. Insignificant changes to management activities as described in the approved SWMP may be made without written approval of the Department. Insignificant changes are modifications of implementation tasks within a management activity that do not change the intent or overall implementation schedule of that activity. No significant changes shall be made in storm water management activities as described in the approved SWMP without the prior written approval of the Department.

All changes to the SWMP shall be summarized in the annual report required by Schedule B.

4. The preparation and submittal of a system-wide annual report as required by Schedule B shall be coordinated by the City of Portland.

5. Permit coverage may be terminated for a single co-permittee without terminating coverage for other co-permittees.
SECTION A. STANDARD CONDITIONS

1. Duty to Comply

The co-permitees must comply with all conditions of this permit insofar as those conditions are applicable to each co-permittee, either individually or jointly. Any permit noncompliance constitutes a violation of Oregon Revised Statutes (ORS) 468B.025 and is grounds for enforcement action; permit termination, suspension or modification; or denial of a permit renewal application.

2. Penalties for Violations of Permit Conditions

ORS 468.140 allows the Director to impose civil penalties up to $10,000 per day for violation of a term, condition, or requirement of a permit.

In addition, ORS 468B.990 classifies a willful or negligent violation of the terms of a permit or failure to get a permit as a misdemeanor and a person convicted thereof shall be punishable by a fine of not more that $25,000 or by imprisonment for not more than one year, or by both. Each day of violation constitutes a separate offense.

3. Duty to Mitigate

The co-permitees shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. In addition, upon request of the Department, the permittee shall correct any adverse impact on the environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

4. Duty to Reapply

If any or all of the co-permitees wish to continue the discharge of storm water regulated by this permit after the permit expiration date, the co-permittee/co-permitees must apply for and have the permit renewed. The application shall be submitted at least 180 days before the expiration date of this permit.

The Director may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

5. Permit Actions

This permit may be modified, suspended, revoked and reissued, or terminated with respect to a co-permittee for cause including, but not limited to, the following:

a. The violation of any term, condition, or requirement of this permit, a rule, or a statute;

b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts; or

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

The filing of a request by any or all of the co-permitees for a permit modification or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
6. Toxic Pollutants

The permittees shall comply with any applicable effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants for storm water within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

7. Property Rights

The issuance of this permit does not convey any property rights of any sort or any exclusive privileges.

8. Permit Reference

Except for effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The co-permittees shall at all times properly operate and maintain all MS4 facilities and systems of treatment and control (and related appurtenances) within the co-permittee's jurisdiction which are installed or used by the permittees to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.

2. Removed Substances

Solids and other pollutants removed in the course of maintaining the MS4 shall be recycled, reused and/or disposed of in such a manner as to minimize pollutants entering public waters, or creating a public health hazard.

SECTION C. MONITORING AND RECORDS

1. Representative Sampling

Sampling and measurements taken as required herein shall be representative of the monitored activity. All samples shall be taken at the monitoring points specified in this permit. Monitoring points shall not be changed without notification to and the approval of the Department.

2. Monitoring Procedures

Monitoring must be conducted according to test procedures approved under 40 CFR §136, unless other test procedures have been specified in this permit or subsequent permit actions.

3. Penalties of Tampering

The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person, punishment is a fine not more than $20,000 per day of violation, or by imprisonment of not more than four years, or by both.

4. Additional Monitoring by the Permittees

If a co-permittees monitors any pollutant specified in Schedule B at any sample point specified in Schedule B of this permit more frequently than
required by this permit, using test procedures approved under 40 CFR §136 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the annual report required by Schedule B. Such increased frequency shall also be indicated.

5. Retention of Records

The permittees shall retain records of all monitoring information, including all calibration and maintenance records, and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Department at any time.

6. Content of Records

Records of monitoring information shall include:

a. The date, exact place, time and methods of sampling or measurements;

b. The name(s) of the individual(s) who performed the sampling or measurements;

c. The date(s) analyses were performed;

d. The name(s) of the individual(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of such analyses.

8. Inspection and Entry

The permittees shall allow the Department, or an authorized representative upon the presentation of credentials, to:

a. Enter upon the permittees' premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Access and copy at reasonable times any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, and

d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by State Law, any substances or parameters at any location within the MS4.

SECTION D. REPORTING REQUIREMENTS

1. Anticipated Noncompliance

The permittees shall give advance notice to the Department of any planned changes in the permitted facilities or activities which may result in noncompliance with permit requirements.

2. Transfers

This permit may be transferred, in whole or part, to a new co-permittee(s) provided the transfee(s) acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of the permit and the rules of the Commission. No permit shall be transferred to a third party without prior written
approval from the Director or designated representative. The permittee(s) shall notify the Department when a transfer of property interest takes place which results in a change of permittee(s).

3. **Compliance Schedule**

Reports of compliance or noncompliance with or any progress reports on interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. Any reports of noncompliance shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

4. **Duty to Provide Information**

The permittees shall furnish to the Department, within a reasonable period of time, any information which the Department may request to determine compliance with this permit. The permittees shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

When a permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Department, they shall promptly submit such facts or information.

5. **Signatory Requirements**

All applications, reports or information submitted to the Department shall be signed and certified in accordance with 40 CFR §122.22.

6. **Falsification of Reports**

ORS 468B.990 provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $25,000 per violation, or by imprisonment for not more than one year per violation, or by both.

**SECTION E. DEFINITIONS AND ACRONYMS**

1. CFR means Code of Federal Regulations
3. Department means Department of Environmental Quality.
4. Director means Director of the Department of Environmental Quality.
5. Flow-Weighted Composite Sample means a sample formed by collection and mixing discrete samples taken periodically and based on flow.
6. Grab Sample means an individual discrete sample collected over a period of time not to exceed 15 minutes.
7. Major Outfall means a municipal separate storm sewer outfall that discharges from a single pipe with an inside diameter 36 inches or more or its equivalent (discharge from a single conveyance other than a circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm sewers that receive storm water from lands zoned for industrial activities (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more).
8. mg/L means milligrams per liter.

9. mL/L means milliliters per liter.

10. MS4 means a municipal separate storm sewer system.

11. Municipal Separate Storm Sewer (MS4) means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

   a) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of sewage, industrial wastes, storm water or other wastes, including special districts under State Law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian Tribal organization, or a designated and approved management agency under §208 of the CWA that discharges to waters of the United States;

   b) Designed or used for collection or conveying storm water;

   c) Which is not a combined sewer; and

   d) Which is not part of a Publicly Owned Treatment Works (POTW) as defined by 40 CFR §122.2.

12. Permit means the NPDES Municipal Permit specified herein, authorizing the co-permittee listed on Page 1 of this permit to discharge from the MS4.

13. Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage.

14. Storm Water Management Program (or SWMP) means the program developed by the co-permittees to satisfy 40 CFR §122.26(d)(1)&(2) as described in the Part 1 and 2 NPDES Permit application and amendments, and approved by the Department.

15. Year means calendar year except where otherwise defined.