



Multnomah County Stormwater Management Plan

National Pollutant Discharge Elimination System (NPDES)
Municipal Separate Stormwater System (MS4) Permit

April 2011 Update
(September 2010 Original Submission)

Water Quality Program
Land Use and Transportation Division
Department of Community Services
Multnomah County
1600 S.E. 190th Avenue, Portland, OR 97233

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1.0 Introduction

This Stormwater Management Plan (SWMP) describes activities related to implementation of Multnomah County's National Pollution Discharge Elimination System - Municipal Separate Storm Sewer System Phase I (NPDES MS4 Phase I) Permit. The primary component of the SWMP is the list of best management practices (BMPs), which outline the specific tasks that the County will conduct in order to reduce stormwater pollution to the maximum extent practicable (MEP).

From 1995 to 2010, the Oregon Department of Environmental Quality (DEQ) regulated stormwater from Multnomah County through two separate NPDES Phase I MS4 Discharge permits: Permit #101314 for the areas within the City of Portland permit boundary and Permit #108013 for the areas within the Gresham permit boundary. Multnomah County was a co-permittee on both Portland and Gresham's MS4 Permit. The County had a limited amount of regulatory area under each permit under the two separate MS4 permits, and for the 2010 permit renewal, Multnomah County requested to DEQ that the permit areas be combined under a single individual permit. As in previous permit terms, a number of activities related to specific permit requirements are conducted by another jurisdiction on behalf of Multnomah County through Intergovernmental Agreements (IGA). To clarify the County's permit responsibilities, Table 1-1 is provided. Table 1-1 indicates the specific permit areas of responsibility outlining each permit requirement, and specifying when and whether Multnomah County is responsible for addressing the requirement.

Beginning with the renewal of the NPDES permit in 2010, stormwater in Multnomah County will be regulated through a single individual permit. Multnomah County's unique NPDES permit area is composed of several discrete urban pocket areas, County facilities, and approximately twenty-eight miles of road and bridge right-of-ways. In addition, the County owns and manages several facilities with MS4 discharge. The individual permit covers the areas previously covered in the Portland and Gresham area permits under Multnomah County responsibility. The renewed permit also incorporates Multnomah County's arterial roads within the cities of Troutdale and Wood Village; these cities became subject to a NPDES MS4 Phase II permit (Permit Nos. 102910 and 102911) in 2007. As the County implements stormwater related best management practices consistently among these jurisdictions, Multnomah County's roads in Troutdale and Wood Village were brought into and included under the single NPDES permit. This was done to facilitate a comprehensive stormwater management, reporting and compliance program for all County areas within the MS4 area.

2.0 Summary of Multnomah County's Area of Permit Responsibility

As mentioned in Section 1.0, Multnomah County is a unique jurisdiction with NPDES permit areas composed of several discrete urban pockets, and approximately twenty-eight miles of road and bridge right-of-ways. The terms "Portland Area" and "Gresham Area" are used in this plan to provide clarity in the area descriptions, and to provide continuity from the previous two-permit status.

Within the Portland Area, Multnomah County is only responsible for the Willamette River bridges and a few small unincorporated pocket areas within the Portland Urban Services boundary (see Figure 2-1). Within the Gresham Area, Multnomah County is responsible for approximately twenty-eight miles of arterial roadways in the Cities of Fairview, Troutdale, and Wood Village, and the unincorporated residential area known as "Interlachen" that is located between Fairview Lake and Blue Lake (see Figure 2-2). More specific details regarding the County's jurisdiction are provided below.

Portland Area Responsibility

Formerly MS4 Permit No. 101314

(Co-permittees: City of Portland, Port of Portland and Multnomah County)

Multnomah County's activities and associated BMP implementation within the Portland Area has significantly diminished over the years. In 1984, the County transferred road and drainage facility maintenance to the City for roads in the unincorporated pocket areas within the Portland Urban Services Boundary through an Intergovernmental Agreement known as the Westside Pocket Area Maintenance Agreement (WPAMA). Of note is the requirement that road and drainage facility maintenance provided by the City is to be provided in a manner consistent with applicable operations and maintenance best management practices as set forth in the City of Portland's Stormwater Management Plan under their MS4 NPDES Permit. (WPAMA, Art. 3, Sec. I, (A)). Clean Water Services also provides maintenance services, such as catch basin cleaning, street sweeping, large culvert cleaning, and in the Tualatin River basin area (Fanno Creek).

As a result of the Metro Urban Growth Management Functional Plan the City of Portland and Multnomah County entered into an Urban Planning Area Agreement (UPAA) dated March 5, 1998. The UPAA provided for the coordination and orderly conversion of unincorporated urbanizable land in the County to urban uses and authorized the City to prepare applicable comprehensive plan and implementing ordinances for the County's urban areas. The County adopted the City's applicable land use regulations, comprehensive plan and zoning through County Ordinance 967, which went into effect January 1, 2002. Under the UPAA, the County agreed to transfer to the City responsibility for implementing and administering comprehensive plan and zoning regulations for all County unincorporated areas within the City's Urban Services Boundary.

An important aspect of the UPAA is the expressed responsibility of the City to address, through their comprehensive plan and zoning regulations, erosion control, floodplain review, grading, and stormwater disposal (UPAA III(C)(2)(a)). Further, land use planning review shall be provided by the City in a manner consistent with applicable best management practices as set forth in the City of Portland National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit. The level of review shall be provided at the same level provided by the City to other areas within the City limits. (UPAA III(C)(2)(o)).

The County's remaining primary stormwater management activity in the Portland Area is associated with five of the Willamette River bridges. Secondly, the County retains jurisdiction to review development connection or impacts to the right-of-way on the roads that the City maintains and operates. The County owns and manages four facilities in the Portland Area.

Gresham Area Responsibility

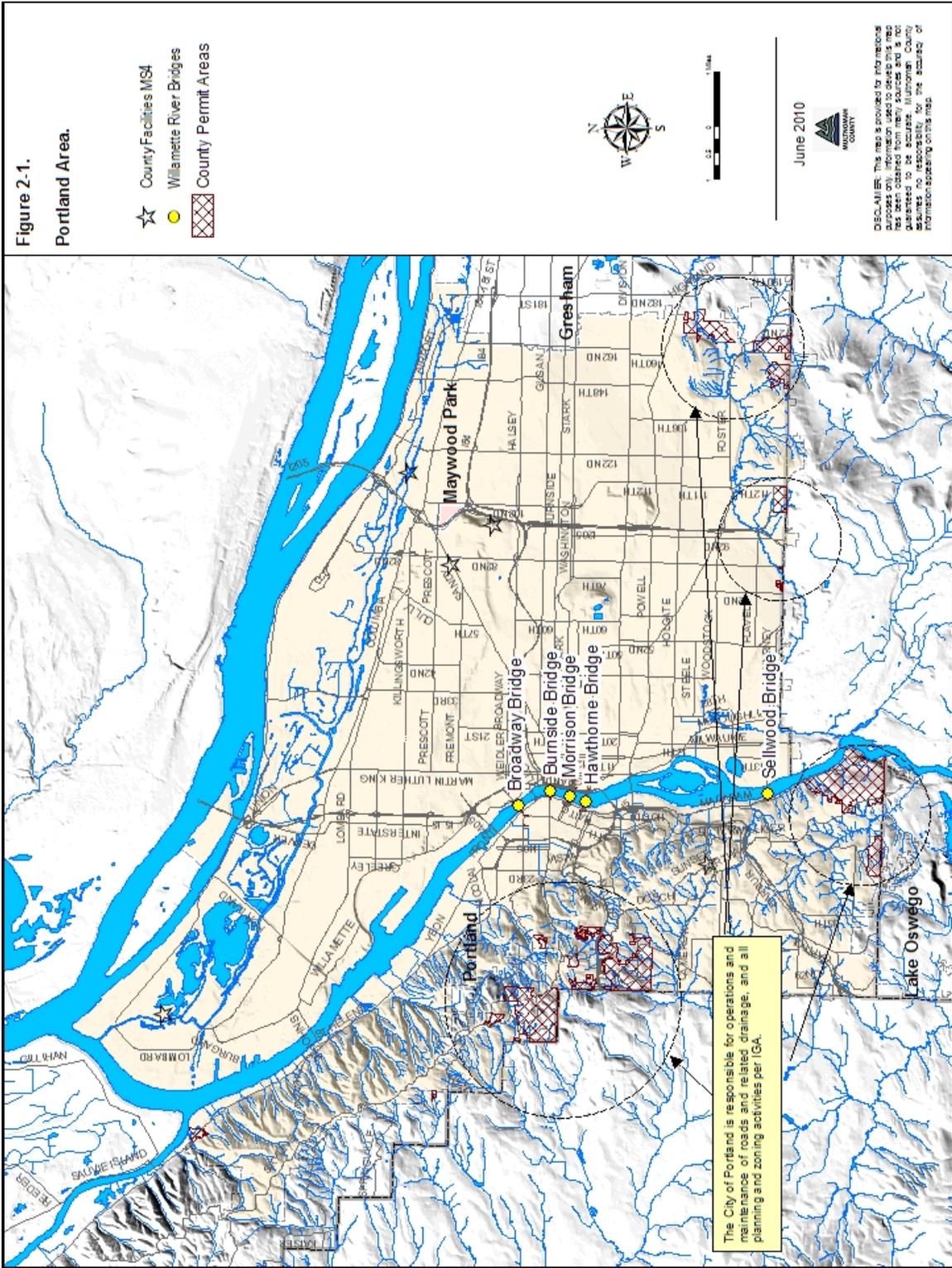
Formerly MS4 Permit No. 108013

(Co-permittees: City of Gresham, City of Fairview and Multnomah County)

Multnomah County's activities and associated BMP implementation within the Gresham Area has also significantly diminished over the years. In 1995, the County transferred many of its roads to the City of Gresham, including a majority of the drainage system and outfalls. Effective January 1, 2006, the remaining County roads within the City of Gresham were transferred to the City pursuant to Senate Bill 1096. Road maintenance for the transferred roads is currently performed by the County, however, the roads are under the jurisdiction of, and they are the responsibility of Gresham. The road maintenance is conducted by the County pursuant to an Intergovernmental Agreement.

The County continues to own, operate and maintain approximately 11 miles of arterial roads within the City of Fairview, 13 miles of roadway within Troutdale, and 4 miles of roadway in Wood Village. Portions of these roadways are served by underground injection control devices or "drywells" to manage stormwater, or other means of infiltration into the right of way, and therefore are excluded from the NPDES MS4 area. Approximately 16 miles of roadway discharge to the MS4.

The County remains responsible for zoning and planning in the unincorporated residential area known as "Interlachen." The County also owns and manages five facilities in the Gresham Area.



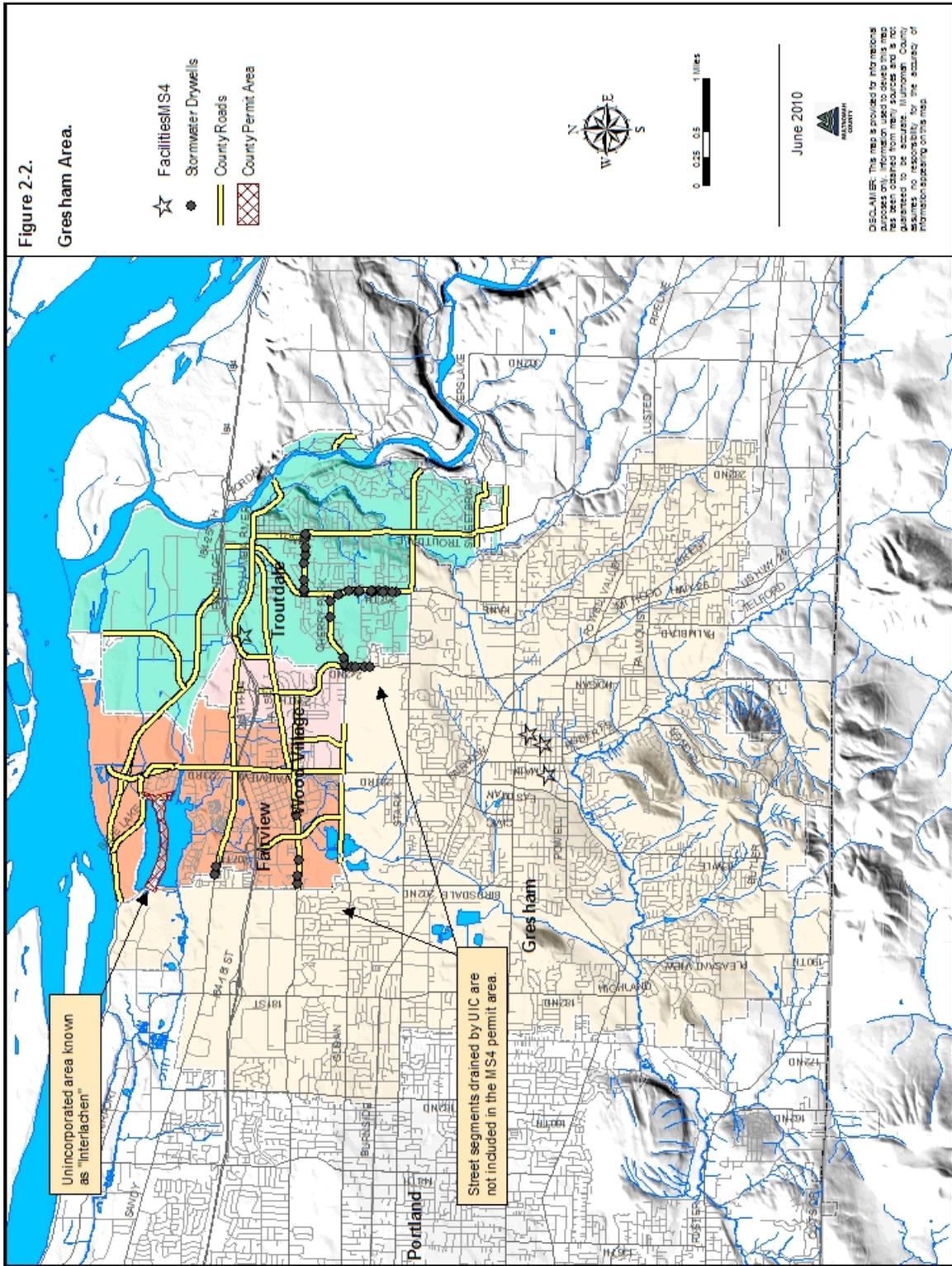


Table 1-1. Permit requirements addressed by the BMPs and application in permit areas with special conditions.

<i>Permit requirements</i>	<i>BMP</i>	<i>Portland bridges</i>	<i>Portland unincorporated pockets</i>	<i>Interlachen residential area</i>	<i>County roadways in Troutdale, Wood Village, and Fairview</i>
A.4.a Illicit discharge detection and elimination (i-xiii)	ILL 1, 2, 4, 5		City of Portland conducts field screening in these areas		Cities of Fairview, Troutdale and Wood Village also investigate the MS4 connecting to County MS4
A.4.b Industrial - commercial facilities (i-iii)	None	County does not have jurisdiction over any industrial/commercial discharges within the permit area			
A.4.c Construction site runoff control (i-vi)	ILL 3; ND 1, 2		City of Portland has planning authority for these areas		Cities have site planning authority for these areas
A.4.d Education and outreach i, ii, iii, vi iv v vii viii	PI 1, 2, 3, 5, 6 None ND 1 PI 4 PI 8		City of Portland has planning authority for these areas	No private stormwater management facilities in these areas	
A.4.e Public involvement and participation	PI 7				
A.4.f Post construction site runoff (i-v)	ND 2; STR 1		City of Portland has planning authority for these areas	Plots in this area discharge directly to Fairview and Blue Lake, not the MS4	Cities have site planning authority for these areas
A.4.g Pollution prevention for municipal operations i, ii iii iv v vi	OM 1 - 8 None ILL 5 None STR 2	City of Portland sweeps the Willamette River Bridges, except Sellwood Bridge	The City of Portland and Clean Water Services conduct maintenance under IGAs	The County does not have a firefighting service	The County does not have maintenance yards that discharge to the MS4 in the permit area
A.4.h Structural stormwater controls (i-ii)	OM 9; STR 3		City of Portland has planning authority for these areas	Plots in this area discharge directly to Fairview and Blue Lake, not the MS4	
A.5 Hydromodification A.6 Stormwater retrofit strategy	STR 2				
B.5 Annual reporting requirement	PM 1, 2, 3				

3.0 Stormwater Management Plan

The Multnomah County stormwater management plan (SWMP) is provided in the following pages. It is made up of a series of best management practices (BMPs) that are grouped into the following seven categories:

- Public involvement and education,
- Operations and maintenance,
- Illicit discharge detection and elimination,
- Natural systems,
- New development,
- Structural controls, and
- Program management.

There are fifteen separate functional staff groups that are responsible for the implementation of these BMPs. These fifteen groups are as follows:

1. Program Management
2. Public Affairs
3. Bridge Engineering
4. Bridge Maintenance
5. Facilities
6. Land Use Planning
7. Transportation Planning
8. Right-of-Way Permits
9. Code Compliance
10. Emergency Response
11. Road Maintenance
12. Road Engineering
13. Sustainability
14. Nuisance Code
15. Asset Management

For each BMP, a fact sheet is provided in the SWMP which includes the portion of the permit area where the BMP applies, which functional staff group or groups are responsible for BMP implementation, a description of the BMP, BMP implementation tasks, measurable goals, and tracking measures. Measurable goals indicate the County commitments related to a specific BMP and tracking measures include the information that will be provided in the annual reports to track BMP implementation status.

PI – Public Involvement and Education

Overall Goal

The Public Involvement and Education BMPs are designed to inform and educate the public about the causes of stormwater pollution, the effects on local streams and rivers, and the need for stormwater management, and to encourage active participation in pollution reduction efforts.

BMP overview

	<i>BMP</i>	<i>Area of BMP Application</i>			
		<i>Portland Area</i>		<i>Gresham Area</i>	
		<i>Willamette River Bridges</i>	<i>Unincorporated Multnomah County</i>	<i>Interlachen Residential Area</i>	<i>County Arterials in Fairview, Troutdale and Wood Village</i>
PI-1	Participate in Regional Public Education Efforts	✓	✓	✓	✓
PI-2	Participate in Public Meetings	✓	✓	✓	✓
PI-3	Distribute Public Education Information Regarding Stormwater	✓	✓	✓	✓
PI-4	Conduct Training and Education for County Personnel	✓	✓	✓	✓
PI-5	Implement the Adopt-a-Road Program			✓	✓
PI-6	Maintain Signage to Protect Water Quality	✓	✓	✓	✓
PI-7	Provide Opportunities for Public Involvement During the CIP Process	✓	✓	✓	✓
PI-8	Facilitate Public Reporting of Illicit Discharges	✓	✓	✓	✓

See Table 1-1 for regulations Addressed by BMPs

PI-1	Participate in Regional Public Education Efforts
<i>Application area</i>	County-wide
<i>Responsibility</i>	Public Affairs
<i>Description</i>	<p>Participate with regional entities and cities in coordinating new and existing efforts to educate and inform the public about stormwater pollution problems, and to involve the public in developing stormwater pollution prevention programs.</p> <p>The County will provide funding and staff support for the various public involvement and education activities provided by the Regional Coalition of Clean Rivers and Streams (RCCRS).</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Provide County representative to attend the RCCRS meetings. 2. Plan and Implement public education campaign promoting behaviors that improve water quality.
<i>Measurable Goal</i>	<p>Help develop and implement RCCRS annual strategy to promote behavior change through the RCCRS website, television, radio and social media.</p> <p>Evaluate education campaign effectiveness by November 1, 2014.</p>
<i>Tracking measure</i>	Provide narrative to describe activities, accomplishments, and level of effort.

PI-2	Participate in Public Meetings
<i>Application area</i>	County-wide
<i>Responsibility</i>	Program Management
<i>Description</i>	<p>Coordinate the County’s role in protecting stormwater quality and environmental monitoring with watershed councils, local jurisdictions, and other organizations. Create opportunities for public participation and involvement and education on stormwater pollution problems by attending public meetings.</p> <p>County staff attends a variety of public meetings including those held by watershed councils depending on staff availability. Each of these groups meets monthly throughout the year with special ad hoc committee work occasionally required.</p>
<i>Tasks</i>	Attend public meetings related to water quality.
<i>Measurable Goal</i>	Track participation in watershed council and ad hoc committee meetings.
<i>Tracking measure</i>	Narrative describing outcomes and level of effort associated with public meetings.

PI-3	Distribute Public Education Information Regarding Stormwater
<i>Application area</i>	County-wide
<i>Responsibility</i>	Program Management
<i>Description</i>	<p>The County distributes brochures and educational materials from local watershed councils, Soil & Water Conservation Districts, and utilities at the Land Use Planning and Survey Permit Office, which is an area of public activity. Educational materials are also distributed at public events.</p> <p>Promote public education and involvement in stormwater pollution prevention efforts through distribution of brochures and educational materials regarding water quality and watershed health at County offices and public water quality meetings and maintenance of County Water Quality Program website.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Make brochures and other educational materials available to the public. 2. Ensure that public education materials are current and cover relevant topics.
<i>Measurable Goal</i>	Track the number of materials distributed at meetings, front counters and online.
<i>Tracking measure</i>	Number of material distributed.

PI-4	Conduct Training and Education for County Personnel
<i>Application area</i>	County-wide
<i>Responsibility</i>	Program Management, Road Maintenance, Bridge Maintenance, Code Compliance, Land Use Planning, Emergency Response, Bridge Engineering, Road Engineering
<i>Description</i>	<p>Train and educate appropriate Multnomah County personnel about impacts of on-the-job activities to the MS4, and how to minimize negative impacts to receiving streams. Topics include erosion control, stormwater maintenance activities, inspection practices, construction BMPs, and spill response.</p> <p>Training will also include measures to minimize impacts from regular road maintenance activities as covered in the County’s Road Maintenance & Operations Manual (RMOM). In addition, educate the County staff about the public’s role in protecting water quality on a watershed-wide basis.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Send a representative(s) to water quality conferences when feasible. Share information learned in training with other staff. 2. Train volunteers, maintenance and operations crews, as well as inspectors on impacts of activities on water quality and MS4 in addition to new approaches to water quality protection and proper reporting procedures.
<i>Measurable Goal</i>	Conduct a minimum of one staff training session a year.
<i>Tracking measure</i>	Track training events and attendance at conferences.

PI-5	Conduct Training and Education for County Personnel
<i>Application area</i>	County-wide
<i>Responsibility</i>	Program Management, Road Maintenance, Bridge Maintenance, Code Compliance, Land Use Planning, Emergency Response, Bridge Engineering, Road Engineering
<i>Description</i>	<p>Train and educate appropriate Multnomah County personnel about impacts of on-the-job activities to the MS4, and how to minimize negative impacts to receiving streams. Topics include erosion control, stormwater maintenance activities, inspection practices, construction BMPs, and spill response.</p> <p>Training will also include measures to minimize impacts from regular road maintenance activities as covered in the County’s Road Maintenance & Operations Manual (RMOM). In addition, educate the County staff about the public’s role in protecting water quality on a watershed-wide basis.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Send a representative(s) to water quality conferences when feasible. Share information learned in training with other staff. 2. Train volunteers, maintenance and operations crews, as well as inspectors on impacts of activities on water quality and MS4 in addition to new approaches to water quality protection and proper reporting procedures.
<i>Measurable Goal</i>	Conduct a minimum of one staff training session a year.
<i>Tracking measure</i>	Track training events and attendance at conferences.

PI-6	Maintain Signage to Protect Water Quality
<i>Application area</i>	County-wide
<i>Responsibility</i>	Road Maintenance
<i>Description</i>	<p>Participate in storm drain marking and other signage programs to promote public awareness of the importance of keeping pollutants out of storm drains as opportunities arise. A bi-lingual marker was developed by County staff for application to County Roads.</p> <p>All catch basins in the permit area have been previously marked and all stream crossings have signs.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Determine whether any areas need to be marked or re-marked and provide staff and materials to carry this out. 2. Maintain signs in right-of-way promoting watershed awareness, as requested by watershed councils.
<i>Measurable Goal</i>	Inspect drain markers and signage once per permit term at all catch basins and stream crossings in the permit area.
<i>Tracking measure</i>	Track replacement of signage.

PI-7	Provide Opportunities for Public Involvement During the CIP and Permit Renewal Process
<i>Application area</i>	County-wide
<i>Responsibility</i>	Transportation Planning, Public Affairs
<i>Description</i>	<p>The Capital Improvement Program (CIP) identifies transportation projects that the County needs to build to provide a balanced and efficient transportation system. Public meetings are held throughout the CIP update process.</p> <p>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.</p> <p>Provide opportunities for the public to comment on the Stormwater Management Plan by posting copies of relevant documents on the County website, and advertising public comment periods in local print media.</p>
<i>Tasks</i>	Involve the public in the process of updating the Capital Improvement Plan and Program (every two years) and in evaluating the stormwater quality impacts and issues associated with the program.
<i>Measurable Goal</i>	<p>Ensure opportunities for public participation in the CIP update process through public meetings.</p> <p>Ensure that public comment period is established for permit renewal.</p>
<i>Tracking measure</i>	Track public meetings and other public involvement activities in the CIP update process.

PI-8	Facilitate Public Reporting of Illicit Discharge and Dumping
<i>Application area</i>	County-wide
<i>Responsibility</i>	Primary: Nuisance Code, Public Affairs Support: Road Maintenance, Bridge Maintenance, Right-of-Way Permits, Emergency Response,
<i>Description</i>	Facilitate efforts to report illegal discharge and dumping of pollutants, trash, or illegal fill (dirt/soil). The County utilizes its nuisance ordinance (MCC 7.20) to encourage the public to report incidents of illegal discharge and dumping. The County Nuisance Code Division web page provides the process and telephone number to report illegal dumping. Nuisance code enforcement investigates, enforces and assesses penalties. Citizens may call the County Road Services for illegal discharge and dumping on a County road or in the right-of-way of any County road. Signs are currently posted in all known problem areas for dumping.
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Annually review field logs and public reports regarding litter and illegal discharge and dumping. 2. Determine where signs need to be posted regarding illegal dumping and place them.
<i>Measurable Goal</i>	Install and maintain signage in all known areas that are problematic in terms of dumping.
<i>Tracking measure</i>	Report on the addition of any new signage.

OM - Operations and Maintenance

Overall Goal

These BMPs are designed for the implementation of operations and maintenance practices for public streets, bridges, storm sewers, and other facilities to reduce pollutants in discharges from the municipal separate storm sewer system.

The County’s Road Maintenance Section responsible for operating and maintaining bridges, roads, and associated drainage facilities (except for the unincorporated pocket areas within the Portland Area which are maintained by Portland and Clean Water Services under Inter-governmental agreements). The County Bridge Maintenance Section responsible for maintaining five Willamette River bridges within the permit area.

BMP overview

	<i>BMP</i>	<i>Area of BMP Application</i>				
		<i>Portland Area</i>		<i>Gresham Area</i>		<i>Facilities</i>
		<i>Willamette River Bridges</i>	<i>Unincorporated Multnomah County</i>	<i>Interlachen Residential Area</i>	<i>County Arterials in Fairview, Troutdale and Wood Village</i>	
OM-1	Review the RMOM for Potential Updates to Address Water Quality	✓		✓	✓	
OM-2	Inspect and Maintain the Storm Drainage System	✓		✓	✓	✓
OM-3	Conduct Street Sweeping			✓	✓	✓
OM-4	Properly Dispose of Road Waste Material	✓		✓	✓	
OM-5	Minimize Impacts from Anti-icing Operations			✓	✓	
OM-6	Minimize Impacts from County Truck Hauling Practices	✓	✓	✓	✓	
OM-7	Minimize Impacts From Right-of-Way and Road Shoulder Maintenance			✓	✓	
OM-8	Minimize Impacts from Ditch Maintenance			✓	✓	
OM-9	Maintain County-owned stormwater facilities				✓	✓

OM-1	Review the RMOM for Potential Updates to Address Water Quality
<i>Application area</i>	County-wide except for the unincorporated parcels in Multnomah County where the City of Portland conducts maintenance.
<i>Responsibility</i>	Program Management, Road Maintenance
<i>Description</i>	<p>The goal of this BMP is to ensure that road maintenance practices are conducted in ways that minimize the impact to water quality.</p> <p>The 2010 County Road Maintenance and Operation Manual (RMOM) is a reference manual with guidance on vegetation management, equipment and material transport, emergency maintenance, and roadway and drainage maintenance. The manual was developed to comply with ODOT’s Routine Road Maintenance Water Quality and Habitat Guide Best Management Practices (2009), and serves as the core of the County’s ESA 4(d) submittal to NOAA Fisheries.</p> <p>For this BMP the County will conduct annual reviews of the manual to ensure that it is current with respect to addressing water quality to the extent feasible.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Review the Road Maintenance Operations Manual annually. 2. When manual revisions are made, conduct refresher staff training as provided for under BMP PI-4.
<i>Measurable Goal</i>	Annually review of the RMOM to ensure current practices are incorporated respect to water quality.
<i>Tracking measure</i>	Describe updates to the RMOM when applicable.

OM-2	Inspect and Maintain the Storm Drainage System
<i>Application area</i>	County-wide except for the unincorporated parcels in Multnomah County where the City of Portland conducts maintenance
<i>Responsibility</i>	Road Maintenance, Bridge Maintenance
<i>Description</i>	<p>The goal of this BMP is to ensure that inlets, catch basins, and stormwater conveyance systems are maintained in a manner that reduces pollutants to the maximum extent practicable and to continue to review and revise operations and maintenance procedures as appropriate. Routine cleaning of these basins reduces pollutant loads. Cleaning occurs manually or by Vactor™ two times per year and depending on how full catch basins become.</p> <p>Catch basins on the Willamette River Bridges are serviced the same as described above, except for the catch basin filters installed on the Burnside and Broadway Bridges. The filter cartridges are replaced according to manufacturer suggestions. Road Maintenance services all Bridges and County facilities storm drainage systems.</p> <p>Facilities catch basins are inspected and maintained annually.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Inspect the entire stormwater conveyance system on an annual basis. 2. Utilize the record keeping system and database to record findings and follow-up work completed by field crews.
<i>Measurable Goal</i>	<p>Establish criteria used to determine catch basin cleaning frequency to maintain effective pollutant removal by July 1, 2011.</p> <p>Clean all roadway catch basins a minimum of 2 times per year, unless catch basin cleaning records indicates less frequent or more frequent cleaning is appropriate.</p>
<i>Tracking measure</i>	Frequency of roadway catch basin cleaning and percent full at time of cleaning.

OM-3	Conduct Street Sweeping
<i>Application area</i>	Gresham Area, Facilities, and the Sellwood Bridge
<i>Responsibility</i>	Road Maintenance
<i>Description</i>	<p>The street sweeping program for County roads reduces materials on the roadway and impacts to the stormwater sewer system. The County will continue to review and revise the program and schedule and make improvements as appropriate.</p> <p>Within the Gresham area, the County’s Road Services owns, operates and maintains approximately 28 center lane miles of paved public roads. Approximately 16 miles of these roadways discharge to the MS4. Street sweeping occurs on curbed streets in accordance with the schedule in the Multnomah County Road Maintenance Operations Manual (RMOM), approximately 20 times per year (generally 3 to 4 times per month) for most roadways.</p> <p>The City of Portland sweeps the Willamette River Bridges, except the Sellwood Bridge. The County sweeps the Sellwood Bridge typically once a month, or as needed.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Follow written procedures in the Multnomah County RMOM for inspection and maintenance of streets as part of the street sweeping program for protecting water quality. 2. Track street sweeping efforts to record the sweeping frequency.
<i>Measurable Goal</i>	<p>Use catch basin cleaning records or inspections to inform the necessary sweeping frequency.</p> <p>Establish criteria used to determine street sweeping frequencies to maintain effective pollutant removal, and identify high priority street sweeping areas by July 1, 2011</p>
<i>Tracking measure</i>	Track the frequency of sweeping and reference catch basin conditions from OM-2.

OM-4	Properly Dispose of Road Waste Material
<i>Application area</i>	County-wide except for unincorporated pockets in Portland
<i>Responsibility</i>	Road Maintenance, Emergency Response
<i>Description</i>	<p>The objective of the road waste disposal operations for County roads is to identify and implement practices for disposal of road waste materials that protect water quality. Materials removed from the drainage system are collected by the County road crews on a regular basis.</p> <p>The County will continue to investigate alternatives to decant and dispose of road waste materials including partnerships with neighboring jurisdictions, or contracts with other private waste handlers.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Identify alternatives for a new decant facility to be used for the dewatering of road wastes, or upgrades to the existing facility. 2. As a result of Task 1, include any new road waste disposal procedures in the County's Road Maintenance and Operations Manual (RMOM). 3. Conduct sampling of road wastes and provide reports to the landfill facility, as required by the facility.
<i>Measurable Goal</i>	Annually review disposal options that protect water quality.
<i>Tracking measure</i>	Describe selected disposal options and report on updates to the County's RMOM.

OM-5	Minimize impacts from Anti-icing Operations
<i>Application area</i>	Gresham Area only
<i>Responsibility</i>	Road Maintenance
<i>Description</i>	<p>The overall goal of this BMP is to reduce effects of roadway anti-icing activities on water quality by proper sand collection methods and evaluation of chemical anti-icing applications.</p> <p>During winter sanding operations, the County applies washed rock (less than 3/8" dia.) to roadways. Clean up operations begin as soon as practicable by Multnomah County road crews. Removed sanding material is stockpiled at Multnomah County's Vance Pit for recycling. The material is recycled by rewashing or screening out road debris when feasible. If material is free of road debris, it can be reused.</p> <p>Several alternatives to anti/de-icing are currently available and used by local and state agencies in the Portland area. Alternatives must be effective to provide safety for the travelling public while minimizing pollutants and environmental effects along the roadsides and waterways.</p> <p>The County Road Maintenance and Operations Manual (RMOM) gives procedures for the application (and removal) of sanding materials, and the application of chemical anti/de-icing products. When possible, chemical anti-icing is used to reduce the use of sanding materials to reduce sediment discharge from the sanding materials.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Continue to follow the County RMOM procedures for the application, collection, and washing of sanding materials applied to roadways. 2. Continue to research alternative anti-icing methods.
<i>Measurable Goal</i>	Conduct street sweeping to recover sanding materials within two weeks after the Road Maintenance Manager determines that the roads are free from the threat of an ice or snow event.
<i>Tracking measure</i>	Report on anti-icing applications and material recovery.

OM-6	Minimize impacts from County Truck Hauling Practices
<i>Application area</i>	County-wide
<i>Responsibility</i>	Road Maintenance
<i>Description</i>	<p>The goal of this BMP is to 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).</p> <p>County trucks haul materials during routine road maintenance activities. Discharges are controlled to the maximum extent practicable. Maintenance crews are trained to avoid any discharge from truck hauling activities. Road Maintenance Operations Manual (RMOM) maintenance practices specify that all equipment operators do an equipment check when hauling material.</p> <p>Release agents are used in dump trucks, for example, during road paving repair operations. County road crews currently use an environmentally friendly non-stick/asphalt release agent to allow paving material to slide out of a dump truck.</p> <p>For this BMP, the County will review County truck hauling practices with field crews annually; recommend revisions (if necessary) to limit occurrence of leaks, spills, or other releases; and, continue to test and evaluate asphalt release agents for truck and tool cleanup, which use “environmentally-friendly” products.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Follow the RMOM procedures for conducting equipment checks when hauling materials. 2. Continue to test and evaluate asphalt release agents currently used for truck and tool cleanup which use “environmentally-friendly” products. 3. Recommend revisions (if necessary) to limit occurrence of leaks, spills, or other releases. Revise operations and the RMOM manual as necessary to reduce potential pollutants.
<i>Measurable Goal</i>	See measurable goal for OM-1.
<i>Tracking measure</i>	See tracking measure for OM-1.

OM-7	Minimize Impacts from Right-of-Way and Road Shoulder Maintenance
<i>Application area</i>	County-wide except for the unincorporated parcels in Multnomah County where the City of Portland conducts maintenance.
<i>Responsibility</i>	Road Maintenance
<i>Description</i>	<p>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.</p> <p>The County Road Maintenance performs routine maintenance upon most shoulder, ditches, and rights-of-way adjacent to its road system. The maintenance of vegetation within this right-of-way is carried out in an integrated manner. Methods include machine mowing and brushing, hand clearing, shoulder re-grading, mechanical ditch cleaning, and herbicide application as necessary.</p> <p>For this BMP, the County will maintain right-of-way and road shoulders in ways that avoid and prevent future adverse water quality impacts; and continue review of current maintenance practices.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Conduct right-of-way and shoulder maintenance activities as specified in RMOM. 2. Review RMOM procedures with new and existing staff.
<i>Measurable Goal</i>	See measurable goal for OM-1.
<i>Tracking measure</i>	See tracking measure for OM-1.

OM-8	Minimize Impacts from Ditch Maintenance
<i>Application area</i>	County-wide with the exception of unincorporated parcels in Multnomah County where the City of Portland conducts maintenance.
<i>Responsibility</i>	Road Maintenance
<i>Description</i>	<p>The goal of this BMP is to 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.</p> <p>Multnomah County’s natural ditch lines serve safety and environmental functions: they receive, collect, absorb and transmit stormwater from the road surface, road sub-grade and adjoining private properties; they provide sedimentation and pollutant/nutrient filtering; and they also may carry year round streams or seasonal springs to other receiving water bodies.</p> <p>Various mechanical methods of ditch maintenance are used, including vacuum trucks (Vactor™), backhoes, excavators, front-end loaders, road graders and mowers. Routine ditch line cleaning begins each fall by addressing conditions that reduce the carrying capacity of the roadside drainage system. The timing and frequency of such activities, as well as the type of equipment used to remove debris can affect the likelihood of debris being released to the stormwater system and also the integrity of the ditch surface. Ditch maintenance activities are outlined in the Road Maintenance Operations Manual (RMOM).</p> <p>For this BMP, the County will conduct ditch maintenance activities; review the 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); and use records to determine where improvements are needed to reduce discharges to ditches.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Conduct ditch maintenance activities as specified in the RMOM. 2. Review RMOM procedures with new and existing staff.
<i>Measurable Goal</i>	See measurable goal for OM-1.
<i>Tracking measure</i>	See tracking measure for OM-1.

OM-9	Maintenance of County-owned stormwater facilities
<i>Application area</i>	Gresham Area roadways and Facilities
<i>Responsibility</i>	Road Maintenance
<i>Description</i>	<p>The purpose of this BMP is to ensure that stormwater treatment facilities are properly maintained to control and reduce the amount of sediments discharged to the receiving waters via the right-of-way.</p> <p>The County Road Maintenance performs routine maintenance on stormwater treatment facilities which includes annual inspection, vegetation maintenance and periodic replacement of the filtration media.</p> <p>The County Road Maintenance also inspects and maintains three Vortex units located at facilities annually. Facilities division is responsible for the maintenance of the stormwater treatment on the properties in their portfolio.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Conduct inspection and maintenance activities as specified in RMOM.
<i>Measurable Goal</i>	<p>Inventory and map stormwater treatments facilities by January 1, 2013.</p> <p>Annual inspection of treatment facility</p>
<i>Tracking measure</i>	Inspection report will guide maintenance needs

ILL – Illicit Discharge

Overall Goal

To prevent, identify, investigate, and if appropriate, control/eliminate any non-stormwater discharges into the municipal separate storm sewer system.

BMP overview

	<i>BMP</i>	<i>Area of BMP Application</i>			
		<i>Portland Area</i>		<i>Gresham Area</i>	
		<i>Willamette River Bridges</i>	<i>Unincorporated Multnomah County</i>	<i>Interlachen Residential Area</i>	<i>County Arterials in Fairview, Troutdale and Wood Village</i>
ILL-1	Implement the Spill Response Program	✓	✓	✓	✓
ILL-2	Address Spills from Private Truck Haulers	✓	✓	✓	✓
ILL-3	Require Erosion and Pollution Controls for Public Projects	✓	✓	✓	✓
ILL-4	Investigate Illegal Dumping	✓	✓	✓	✓
ILL-5	Detect and Eliminate Illicit Discharges to the Storm Sewer	✓			✓

See Table 1-1 for regulations Addressed by BMPs

ILL-1	Implement the Spill Response Program
<i>Application area</i>	County-wide
<i>Responsibility</i>	Emergency Response, Road Maintenance, Bridge Maintenance
Description	<p>The goals of this BMP are to respond to accidental non-stormwater discharges promptly to reduce the frequency and overall impact of spills to the stormwater system.</p> <p>The County Road Maintenance Operations Manual (RMOM) outlines Emergency Response procedures (per the Multnomah County Emergency Spill Response Plan) to address potential runoff of fine materials through waste streams and ditches. Depending on the magnitude of the spill occurring on County property, County personnel will either initially respond (and utilize appropriate clean up measures for minor spills) or coordinate with National Response Corporation (NRC) Environmental Services or RMCAT Environmental Services for hazardous material spill clean up. Spills occurring on County roads are addressed through HAZMAT units and fire departments. Spills occurring in the unincorporated areas are addressed through the local fire department.</p> <p>For this BMP, the County will continue to manage the spill prevention and response program that reduces the frequency and impact of accidental non-stormwater discharges to the MS4; revise the County Road Maintenance Operation Manual (RMOM), if necessary, to include clear instructions for field personnel in the event of a spill; improve the use of absorbent materials for quick response to minor spills of oil or fluid; keep records of incidents and response; and continue to coordinate response to appropriate incidents with cities.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Continue to follow and implement the Multnomah County Spill Response Plan. 2. Track and record spills and information regarding spills as they occur. 3. Maintain agreements with contractors for spill response. 4. Participate in the regional Stormwater Spill Committee led by the City of Portland Bureau of Environmental Services.
<i>Measurable Goal</i>	Conduct spill response procedures when spills are reported.
<i>Tracking measure</i>	Track the spills that occur and the outcome of the spills.

ILL-2	Address Spills from Private Truck Haulers
<i>Application area</i>	County-wide
<i>Responsibility</i>	Right-of-Way Permits, Road Engineering, Bridge Engineering
<i>Description</i>	<p>Problems may arise with haulers working on private property and hauling materials onto the County’s right-of-way from those properties or city streets. These activities do not require a County permit. The County Road Maintenance responds to complaints regarding nonhazardous spills, and notifies local fire departments and DEQ depending on the type and severity of the spill. Local fire departments and DEQ respond to hazardous spills.</p> <p>For contract work or work requiring a County permit (e.g., County road or bridge projects or in the County right-of-way), the County adds standard language to the contract or permit to inform the contractor of the state requirements prohibiting leaking, spilling, etc. The language is the same as that used by ODOT (00280 ODOT requirements for erosion and sediment control).</p> <p>Trucks in excess of statute-established weight limit (80,000 lbs) require overweight and over-dimension permits to travel over Multnomah County roads. This permit requires the operator to have a spill prevention, contingency, and countermeasure plan.</p> <p>For this BMP, the County will review reporting of and action for noticeable private truck hauling practices causing discharges to County roads and the stormwater conveyance system; and work with County inspection officers for immediate response.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Report to the appropriate agency of the private truck hauling practices impacting the County right-of-way and the stormwater conveyance system.
<i>Measurable Goal</i>	Contact all private haulers when spills are observed to ensure proper clean up.
<i>Tracking measure</i>	Track the spills observed and the outcome.

ILL-3	Require Erosion and Pollution Controls for Public Projects
<i>Application area</i>	County-wide
<i>Responsibility</i>	Right-of-Way Permits, Road Engineering, Bridge Engineering
<i>Description</i>	<p>This BMP is intended to apply to contractors hired to construct County projects, including road and bridge repair and construction, and associated projects. The County will implement requirements to control discharges from construction sites to ensure that construction practices do not release sediment and contaminants onto roadways or open space where they may be washed into storm drains or waterways by continuing to:</p> <ol style="list-style-type: none"> 1) require erosion control measures in contract specifications; 2) require cash deposits, performance-payment bonds, final inspections and other mechanisms to ensure compliance with permit requirements; 3) review erosion control permit requirements with contractors during projects; 4) inspect and review Erosion and Sediment Control Plans to ensure control of discharges; 5) continue pre-construction meetings to disseminate information about requirements to prevent damages during construction projects. <p>The County establishes special provisions and specifications in individual project agreements/ROW permits to address erosion control. Current requirements include placing filters in catch basins, monitoring catch basins, following standards for construction of temporary access roads, and a \$1,000 cash deposit.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Execute formal contracting practices including pre-construction meetings, bonding, construction permit review, and erosion control inspections. 2. Review corrective actions and violations and evaluate whether changes are needed in future permit conditions and/or future pre-construction meetings to clarify requirements to avoid future erosion and sediment control problems. 3. Include pollution control for additional non-sediment related discharges in permits (e.g., paints, solvents, metals, etc.).
<i>Measurable Goal</i>	Inspect 100% of County project sites.
<i>Tracking measure</i>	Report number of sites inspected. Report observed erosion and pollution problems and outcomes.

ILL-4	Investigate Illegal Dumping
Application area	County-wide
Responsibility	Primary: Nuisance Code, Road Maintenance Support: Emergency Response, Code Compliance
Description	<p>For this BMP, the County will continue to implement a program to identify and investigate illegal dumping of pollutants including trash, fill, oil, or toxic materials in the right-of-way or to the storm sewer system; and, report and follow up on reports by County staff when illegal dumping is discovered during the course of job duties.</p> <p>County personnel during typical job related activities occasionally encounter various forms of illegal dumping either within the County right-of-way, on the premises of County facilities or on private property. If unusual occurrences or substances are found in the ditch, waterway, or right-of-way as observed by County field personnel they are immediately reported to the District Supervisors in the Road Maintenance Division. In addition, depending on the type of material, the county staff reports the event to the appropriate supervisor, safety officer, Code Compliance staff, Nuisance Control Officer. The appropriate County staff will investigate and take enforcement action as necessary. In addition, the Sheriff's office manages an inmate crew responsible for investigation and clean-up of illegal dumps.</p>
Tasks	<ol style="list-style-type: none"> 1. Continue to implement the existing field inspection program during routine maintenance activities. Record and report any noticeable illegal discharge and dumping in the right-of-way. 2. Report illegal dumping to appropriate supervisor, Safety Officer, Code Compliance Officer, Nuisance Control Officer or environmental contractor. 3. Follow up identification of an illegal dumping activity or discharge with solutions, including enforcement action as necessary, when the source of an illegal dumping or discharge activity can be determined.
Measurable Goal	Clean up all reported discharge or debris dumped in the right-of-way.
Tracking measure	Track observed dumping problems and outcomes.

ILL-5	Detect and Eliminate Illicit Discharges to the Storm Sewer
Application area	Gresham Area roadways Broadway, Burnside, Hawthorne and Morrison Bridges on the Willamette River
Responsibility	Road Maintenance, Bridge Maintenance
Description	<p>The goal of this BMP is to detect and eliminate any possible sanitary discharges in the storm system. Generally, the Cities within the NPDES permit areas are responsible for ensuring that there are no cross connections or failing sanitary pipes or septic tanks that may potentially discharge into the County’s stormwater system. The Investigations and Monitoring Division of the Portland’s Bureau of Environmental Services also investigates the major outfalls in the Portland/County permit area and traces observed discharges to their source. County staff will inspect dry weather flows from major outfalls in Gresham Area roadways and conduct sampling, if warranted.</p> <p>County personnel are responsible for inspection and maintenance of the restroom facilities (for bridge operators) on four Willamette River bridges, to ensure that potential leaks are prevented.</p> <p>For this BMP, the County will continue to implement a program to identify and investigate sanitary discharges to the storm sewer system; and, continue a reporting and follow-up procedure for County staff to follow when a cross-connection or illicit connection is discovered per permit conditions in Schedule A.4.</p>
Tasks	<ol style="list-style-type: none"> 1. Continue to inspect and maintain the bridge restroom facility holding tanks on a quarterly basis. 2. Document enforcement response plan for illicit discharges by November 1, 2011 3. Develop pollutant parameter action levels and rationale, and identify priority outfall locations by July 1, 2012 4. Follow up on illicit discharge investigations by Cities and County staff within 5 working days once the source is identified. If the elimination will take more than 15 days, develop an action plan within 20 days.
Measurable Goal	<p>Conduct quarterly maintenance of bridge facilities.</p> <p>Conduct tasks by date above, and annual inspection of dry weather flows at major outfalls.</p>
Tracking measure	Document illicit discharge elimination process and any problems observed.

ND – New Development

Overall Goal

New Development Standards (ND) BMPs are designed to mitigate pollutant discharges and other water quality impacts associated with new development and redevelopment during and after construction.

BMP overview

	<i>BMP Description</i>	<i>Area of BMP Application</i>			
		<i>Portland Area</i>		<i>Gresham Area</i>	
		<i>Willamette River Bridges</i>	<i>Unincorporated Multnomah County</i>	<i>Interlachen Residential Area</i>	<i>County Arterials in Fairview, Troutdale and Wood Village</i>
ND-1	Require Erosion Control for Private Development			✓	
ND-2	Regulate Stormwater Discharge	✓	✓	✓	✓

See Table 1-1 for regulations Addressed by BMPs

ND-1	Require Erosion Control for Private Development
<i>Application area</i>	Interlachen Residential Development
<i>Responsibility</i>	Land Use Planning and Code Compliance
<i>Description</i>	<p>The goal of this BMP is to control/reduce amount of erosion and sediments discharged to the receiving waters. Increased turbidity/sedimentation on channel bottoms impairs water quality and fish habitat.</p> <p>The Planning Division of the Multnomah County Department of Community Services applies the Grading and Erosion Control Standards (GEC) for most “ground-disturbing activities” through plan review and inspections. The County Planning Division requires Hillside Development (HD) or GEC Permits for grading, clearing or fill on any sites within its jurisdictional authority.</p> <p>HD and GEC Permits standards require temporary and permanent erosion control and water quality protection during construction stages and for long term site stability and mitigation. Inspections are performed by Planning staff for large grading projects and Right-of-Way inspectors perform inspections for the “minimal impact” projects. Each inspection receives either a pass or fail.</p> <p>An erosion control review is required by the County whenever:</p> <ul style="list-style-type: none"> • > 10,000 square feet of ground disturbing activity, or • Areas disturbed < 200 feet from top of bank of watercourse, or Pre-development slopes are > 10 % , or • Post construction; unsupported slopes > 33% that exceed five feet in height. <p>A Hillside Development review is typically required for all construction within a mapped slope hazard zone. This applies to existing undeveloped sites as well as newly developing sites.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Review and provide comments on applications for grading permits and hillside development permits. 2. Perform Erosion and Sediment Control Inspections for all approved construction projects. 3. Investigate and enforce related land use and transportation code provisions. 4. Require site remediation where appropriate.
<i>Measurable Goal</i>	Inspect 100% of sites once during the permit review, and a second time during active construction.
<i>Tracking measure</i>	Number of permits issued, number of inspections conducted, number of problems encountered, number of enforcement actions.

ND-2	Regulate Stormwater Discharge
<i>Application area</i>	County-wide
<i>Responsibility</i>	Land Use Planning, Right-of-Way Permits, Code Compliance, Road Engineering
<i>Description</i>	<p>The goals of this BMP are to implement localized design standards to adequately address stormwater discharge issues. The County has minimal development review responsibility, yet reviews development for compliance with certain local guidance documents and standards regarding stormwater discharge. County code requires that stormwater runoff attributed to new and re-development is managed on-site for a storm of ten-year, 24 hour design frequency or, is to be discharged to a watercourse in or adjacent to the property at pre-developed rates.</p> <p>The County has development review authority in the Interlachen Residential Area. When conducting hillside development and erosion control permit review, the Land Use Planning Program of the Department of Community Services uses the current City of Portland <i>Erosion and Sediment Control Manual</i> and the <i>Stormwater Management Manual</i>. The Multnomah County Zoning Code makes reference to the Portland guidance manuals.</p> <p>In the unincorporated pockets within the Portland Permit Area connection to the right-of-way and drainage discharge to the right-of way is reviewed by Road Engineering. When conducting development review activities, the County refers to their drainage design standards (Chapter 5 of the Design Construction Manual), which references portions of the City of Portland’s water quality design standards for new development. Portland Planning also provides drainage review.</p> <p>The County Design and Construction Manual will be updated during the permit term to reflect priorities for Low Impact Development techniques. For this BMP, the County will review stormwater regulations, design standards, and criteria, as issued by the City of Portland and other jurisdictions, and consider them for use as guidance to regulate both stormwater discharge associated with new and redevelopment activities; review new development permit applications for appropriate stormwater quality and quantity controls in the Interlachen area.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Continue to review new development permit applications to ensure proper connection to the storm sewer system and application of design standards. 2. Inspect stormwater facilities during and after construction to ensure that the site is compliant with design standards. 3. Update Design and Construction Manual by January 1, 2014.
<i>Measurable Goal</i>	Conduct plan reviews and inspections for 100% of permitted projects.
<i>Tracking measure</i>	For inspected permitted sites, describe any permit violations and outcomes.

STR – Structural Control

Overall Goal

These BMPs are designed to implement structural modifications (constructed facilities) to existing systems/development to reduce pollutants in discharges from the municipal separate storm sewer system.

BMP overview

	<i>BMP</i>	<i>Area of BMP Application</i>			
		<i>Portland Area</i>		<i>Gresham Area</i>	
		<i>Willamette River Bridges</i>	<i>Unincorporated Multnomah County</i>	<i>Interlachen Residential Area</i>	<i>County Arterials in Fairview, Troutdale and Wood Village</i>
STR-1	Address Water Quality with New Capital or Roadway Improvement Projects	✓	✓	✓	✓
STR-2	Retrofit Existing Facilities for Water Quality Benefit	✓	✓	✓	✓
STR-3	Inventory and Map the County Storm Sewer System	✓	✓	✓	✓

See Table 1-1 for regulations Addressed by BMPs

STR-1	Address Water Quality with New Capital or Roadway Improvement Projects
<i>Application area</i>	County-wide
<i>Responsibility</i>	Road Engineering, Bridge Engineering, Land Use Planning, Transportation Planning
<i>Description</i>	<p>The goals of this BMP are to ensure that water quality facilities, built as part of a capital improvement project or road construction project apply appropriate design standards to reduce the discharge of pollutants from sites to the maximum extent practicable, and that practices are applied consistently.</p> <p>The County Engineering staff or consultant ensures through design and review of new capital improvement projects that stormwater structural controls are considered and properly designed for inclusion in the Capital Improvement Program (CIP). Currently, the group reviews designs of various capital improvement projects for appropriate water quality controls. The City of Portland Stormwater Management Manual has been used as guidance in the design of stormwater facilities that are part of capital road projects</p> <p>The County Planning Program of the Department of Community Services uses the current Portland Stormwater Management Manual in Hillside Development (HD) and Grading and Erosion Control (GEC) Permit reviews county-wide. These permits are required for County road construction projects and include guidelines for stormwater facilities. Stormwater facilities built in conjunction with County road or bridge projects are generally owned and maintained by the County. Long-term maintenance is assured through routine County maintenance and operations procedures.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Develop criteria and strategy for when stormwater treatment will be incorporated into public projects. 2. Conduct plan checks of stormwater quality treatment facilities that are included in capital improvement or roadway 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.
<i>Measurable Goal</i>	Identify strategy or criteria used to determine when stormwater quality treatment will be incorporated into Capital Improvement Projects by November 1, 2013.
<i>Tracking measure</i>	List projects constructed with and without treatment and provide the rationale.

STR-2	Retrofit Existing Facilities for Water Quality Benefit
<i>Application area</i>	County-wide
<i>Responsibility</i>	Road Engineering, Bridge Engineering
<i>Description</i>	<p>The goal of this BMP is to develop a strategy for retrofits and improvements to existing stormwater infrastructure for all major repair projects. An initial hydromodification assessment will be conducted concurrently with a retrofit strategy.</p> <p>The County owns and maintains drainage facilities for its portion of the permit area. When major repair is needed, the County will develop and implement retrofits of existing public drainage and flood control facilities (sumps, water quality filtration devices, retention basins, drainage channels, bioswales, trash racks, sediment trap devices, etc.) where practicable to improve water quality, and install new systems according to current standards.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Include consideration of stormwater treatment for water quality purposes in capital projects to reduce pollutants to the maximum extent practicable. 2. Conduct a hydromodification assesement and develop a strategy to identify and prioritize potential retrofit projects by November 1, 2014.
<i>Measurable Goal</i>	<p>Identify one retrofit project by November 1, 2013.</p> <p>Develop hydromodification and retrofit strategy by November 1, 2014.</p>
<i>Tracking measure</i>	List repair projects conducted both with and without treatment and provide the rationale.

STR-3	Inventory and Map the County Storm Sewer System
<i>Application area</i>	County-wide
<i>Responsibility</i>	Road Engineering, Bridge Engineering, Asset Management
<i>Description</i>	<p>The goal of this BMP is to ensure County storm sewer mapping is current. Mapping support is valuable in allowing the County to effectively accomplish and track NPDES activities.</p> <p>The County has a formal set of the County drainage system including structural control facilities on a set of hand-drafted drawings. Updates to this set are done as new facilities are added. CAD drawings are created for individual County road projects. GIS maps are available for some stormwater features, however inconsistent funding for GIS support has hampered full GIS map development in the past.</p> <p>For this BMP, the County will continue to inventory and map the municipal storm sewer system using GIS mapping technology, including catch basins, pipes, manholes, culverts, UICs, and other County assets. GIS mapping will improve knowledge of the County system by Engineering and Maintenance staff to facilitate identification of problem areas and implementation of control programs in strategic locations.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Continue to update the County GIS storm sewer system map.
<i>Measurable Goal</i>	Complete GIS drainage system maps of the NPDES permit area by 2014, including catch basins, culverts, manholes, ditches and pipes systems.
<i>Tracking measure</i>	Narrative to describe updates to the GIS maps.

NS – Natural Systems

Overall Goal

These BMPs are designed to help preserve and restore the natural environment/functions to reduce pollutants in discharges from the municipal separate storm sewer system.

Multnomah County has implemented and enhanced a vegetation management Functional Group within both Road and Bridge Maintenance, partly in response to Stormwater Implementation Team recommendations, since the first permit term began.

BMP overview

	<i>BMP</i>	<i>Area of BMP Application</i>			
		<i>Portland Area</i>		<i>Gresham Area</i>	
		<i>Willamette River Bridges</i>	<i>Unincorporated Multnomah County</i>	<i>Interlachen Residential Area</i>	<i>County Arterials in Fairview, Troutdale and Wood Village</i>
NS-1	Conduct Vegetation Management Activities	✓		✓	✓
NS-2	Specify Native Vegetation in ROW and Permitted Projects	✓		✓	✓

See Table 1-1 for regulations Addressed by BMPs

NS-1	Conduct Vegetation Management Activities
Application area	County wide except unincorporated parcels in Multnomah County where the City of Portland conducts vegetation management.
Responsibility	Road Maintenance, Bridge Maintenance
Description	<p>The goal of this BMP is to implement existing/improved vegetation management practices to ensure that pollutants discharged from and into County rights-of-way (roads, ditches) are reduced to the maximum extent practicable.</p> <p>Vegetation management policies and strategies are outlined in the Multnomah County Transportation Integrated Vegetation Management Program (IVM), and vegetation management procedures are outlined in the Road Maintenance Operations Manual (RMOM) including environmental considerations for daily operations such as: tractor mowing, hand brushing, hand weeding, pesticide application, fertilizing, planting, pruning, water, etc.</p> <p>Chemical herbicide applicators receive annual certification from the Oregon Department of Agriculture in proper handling, safety, and application of allowable chemicals. All herbicides are applied in accordance with manufacturers' labels.</p> <p>For this BMP, the County will continue to implement vegetation management strategies and procedures as provided in the IVM and the RMOM to assure that water quality impacts are addressed; include annual Oregon Department of Agriculture certification for pesticide applicators; selectively use pesticides wherever applicable; and, continue to improve application practices and training for personnel.</p>
Tasks	<ol style="list-style-type: none"> 1. Follow RMOM and IVM procedures. 2. Maintain current Oregon Department of Agriculture (ODA) certifications for chemical applicators. 3. Review and update integrated vegetation management practices (IVM) annually.
Measurable Goal	Review RMOM vegetation activities and the Integrated Vegetation Management Program (IVM) annually.
Tracking measure	Narrative description of relevant changes to IVM and RMOM.

NS-2	Specify Native Vegetation in ROW and Permitted Projects
<i>Application area</i>	County wide except unincorporated parcels in Multnomah County where the City of Portland conducts vegetation management.
<i>Responsibility</i>	Land Use Planning, Transportation Planning, Road Engineering, Road Maintenance, Bridge Engineering, Bridge Maintenance
<i>Description</i>	<p>The goal of this BMP is to reduce pesticide use and encourage use of self-sustaining native vegetation as means of improving water quality.</p> <p>Native vegetation reduces/eliminates the need for chemicals, watering and maintenance (mowing) thereby, greatly reducing stormwater runoff and pollutant loads. Trees are known to absorb and hold large quantities of rain water, both in the above ground mass and in the root systems. This characteristic can reduce erosive runoff and stabilize soils. Native vegetation offers many other environmental benefits such as air quality improvement, community ambiance, economic enhancement, and wildlife habitat.</p> <p>Currently, specifications for landscaping in the ROW are an integral part of a road improvement project. Specifications are detailed in the project contract, and require the use of self-sustaining vegetation. The County coordinates with the cities, landscape industries, nurseries, and others to develop recommendations for new design practices encouraging use of self-sustaining vegetation.</p> <p>Permit approval for a new use or change in use in a County designated Significant Environmental Concern (SEC) zone may require natural vegetative fringe along rivers, lakes, wetlands and streams to be “enhanced and protected to the maximum extent practicable to assure scenic quality and protection from erosion.” Flood plains, water courses and wetlands “shall be retained in their natural state to the maximum possible extent to preserve water quality and protect water retention, overflow and natural functions.”</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Review the current contract specifications for landscaping in the right-of-way, and update as needed. 2. Promote the use of native vegetation and develop contract specifications for landscaping. Condition plan approvals with invasive plants removal, if needed. 3. Ensure contract specifications are followed which require certain landscaping materials and placement.
<i>Measurable Goal</i>	Inspect 100% of project sites for landscaping specifications.
<i>Tracking measure</i>	Report compliance with landscaping specifications.

PM – Program Management

Overall Goal

Program Management BMPs ensure effective program management, coordination, and reporting.

BMP Overview

	<i>BMP</i>	<i>Area of BMP Application</i>			
		<i>Portland Area</i>		<i>Gresham Area</i>	
		<i>Willamette River Bridges</i>	<i>Unincorporated Multnomah County</i>	<i>Interlachen Residential Area</i>	<i>County Arterials in Fairview, Troutdale and Wood Village</i>
PM-1	Stormwater Program Management	✓	✓	✓	✓
PM-2	Assess and Evaluate the Stormwater BMP Program	✓	✓	✓	✓
PM-3	Maintain Environmental Management Database	✓	✓	✓	✓

See Table 1-1 for regulations addressed by BMPs

PM-1	Stormwater Program Management
<i>Application area</i>	County-wide
<i>Responsibility</i>	Program Management
<i>Description</i>	<p>The goals of this BMP are to develop and manage the County’s stormwater program to ensure compliance with the NPDES permit, and to develop and implement cost-effective, practical BMPs and activities that are designed to reduce stormwater pollution to the maximum extent practicable.</p> <p>Multnomah County participates in periodic NPDES MS4 coordination meetings and the Oregon Department of Environmental Quality (DEQ) meetings. The County conducts program management that includes implementation scheduling, budgeting and tracking. The County prepares the required Annual Compliance Reports for submittal to DEQ.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Continue to participate in the NPDES MS4 coordination meetings and any DEQ meetings. Continue to work with other NPDES MS4 permittees and DEQ to implement the stormwater management program. 2. Review each BMP file annually. Prepare an annual report to demonstrate the County’s compliance with requirements. Submit to DEQ.
<i>Measurable Goal</i>	Annually review BMP implementation data and submit annual report by November 1 each year.
<i>Tracking measure</i>	Submit annual report.

PM-2	Assess and Evaluate the Stormwater BMP Program
<i>Application area</i>	County-wide
<i>Responsibility</i>	Program Management
<i>Description</i>	<p>The County has continually assessed and evaluated progress on the BMPs. Work sessions each permit year occur to ensure progress of each BMP. Program updates and progress review regarding BMP implementation is also conducted via emails. BMP files demonstrate work done to date for each BMP. The implementation of the BMPs is summarized in each annual report.</p> <p>The County will assess and evaluate the program to ensure the best use of available resources, and make recommendations for improvements in program implementation tasks. An adaptive management approach will be developed to guide the program evaluation.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Evaluate progress of BMPs for annual report using adaptive management approach.
<i>Measurable Goal</i>	Develop an adaptive management approach by November 1, 2011.
<i>Tracking measure</i>	Provide results of the BMP evaluations in the annual reports and include any changes to the BMPs.

PM-3	Maintain Records of NPDES Activities
<i>Application area</i>	County-wide
<i>Responsibility</i>	Asset Management, Program Management
<i>Description</i>	<p>The County has previously maintained records of NPDES permit activities through the Environmental Management Database (Access Database). Data was entered by each functional group (except for Road Maintenance) and those data are summarized for the Annual Report. Because of the limited activities in the NPDES permit area, these data are now stored in email communications with Functional Group staff by the Program Management staff to reduce database maintenance.</p> <p>The County Road Maintenance is now moving away from an Access Database and moving towards integrating GIS mapping, GPS tracking in vehicles, onboard computers for data entry, and SAP database work order systems to streamline data entry and analysis of road maintenance activities.</p>
<i>Tasks</i>	<ol style="list-style-type: none"> 1. Pilot new GPS and onboard computer technology by July 2011. 2. Develop GIS or other mapping technology to sync with GPS system by July 2012. 3. Develop SAP work orders and tracking to integrate with GIS by July 2013.
<i>Measurable Goal</i>	Ensure tasks are completed by dates shown above.
<i>Tracking measure</i>	Update on progress with description of tasks.