

**Draft MS4 NPDES Permit  
Stormwater Management Plan  
for  
Clackamas County  
Department of Transportation and Development**

**October 7, 2010**



**SWMP Overview**

The 2010 revisions to the Stormwater Management Plan (SWMP) are intended to address new requirements in the MS4 NPDES permit (Permit) and to clarify permit responsibilities and the interdependency of departments involved in meeting the requirements for Clackamas County. These include Water Environment Services (WES) and the Department of Transportation and Development (CCDTD). WES administers and manages Clackamas County Service District No. 1 (CCSD#1) and the Surface Water Management District of Clackamas County (SWMACC), which are jointly identified as the “Districts” within this SWMP.

The Engineering and Transportation Maintenance Divisions perform most of the DTD SWMP Best Management Practices (BMPs) due to the nature of the services and activities they perform and frequent interfacing with the county’s waterways.

The Districts were created to meet the needs of the more urban areas of the county. Due to the level of development and urbanized character of their districts, CCSD#1 and SWMACC perform the vast majority of stormwater management activities within the county. These areas are determined to be of high priority and receive dedicated funding for stormwater management. Other high priority areas within the county include the jurisdictions of the permit (i.e., co-permittees) consisting of nine cities and the Oak Lodge Sanitary District (OLSD). *CCDTD supplements the Districts substantial efforts within county road rights of way only.*

The remaining areas within the MS4 NPDES Permit boundary are very small, rural pockets of agricultural and forested lands located largely in outlying portions of the County and are thus low priority stormwater management areas.

For ease of review, the organization of CCDTD’s SWMP is in alignment with Schedule A of the permit. The organization is outlined below including each of eight SWMP components followed by the BMPs that are implemented to address each component.

**Component #1  
Illicit Discharge Detection and Elimination**

- 1: Conduct Dry Weather Inspections
- 2: Implement the Spill Response Program
- 3: Legal Authority and Procedures to Respond to Reports of Illicit Discharges

**Component #2  
Industrial and Commercial Facilities**

- *Not Applicable to Clackamas County Department of Transportation and Development*

**Component #3  
Construction Site Runoff**

- 4: Provide Information/Training for Construction Site Operators
- 5: Conduct Procedures for Site Plan Reviews
- 6: Conduct Enforcement Activities
- 7: Conduct Site Inspections

**Component #4  
Education and Outreach**

- 8: Publish and Distribute News Letters
- 9: Continue Cooperative Educational and Outreach Efforts with Others
- 10: Participate in a Public Education Effectiveness Evaluation
- 11: Training for Employees

**Component #5  
Public Involvement and Participation**

- 12: Provide for Public Participation with SWMP and Benchmark Submittals

**Component #6  
Post-Construction Site Runoff Control**

- 13: Planning Procedures for New CIP Development
- 14: Update Procedures for New Development

**Component #7  
Pollution Prevention for Municipal Operations**

- 15: County Roadway Operations and Maintenance Program
- 16: Pesticide, Herbicide and Fertilizer Programs

**Component #8  
Structural Stormwater Facility Operations and Maintenance**

- 17: Maintenance of Structural Controls

- Component #1: Illicit Discharge Detection and Elimination
- Component #2: Industrial and Commercial Facilities
- Component #3: Construction Site Runoff Control
- Component #4: Education and Outreach
- Component #5: Public Involvement and Participation
- Component #6: Post-Construction Site Runoff
- Component #7: Pollution Prevention for Municipal Operations
- Component #8: Structural Stormwater Facility Operations and Maintenance

Summary descriptions of the best management practices (BMPs) implemented to address the permit requirements for each of these eight components are provided on the following pages.

## SWMP Component #1 Illicit Discharge Detection and Elimination

NPDES permit requirements are listed below followed by the Clackamas County Department of Transportation and Development (CCDTD) relevant BMPs that address the permit requirement within the high priority area county road rights of way. For this component of the SWMP, applicable provisions are outlined under Schedule A.4.a of the MS4 NPDES Permit. See **Table 1** for CCDTDs BMPs that address the permit requirements listed below.

SWMP Component #1: Illicit Discharge Detection and Elimination			
Schedule A.4.a Permit Requirement	Applicable BMPs		
	1: Conduct Dry Weather Inspections	2: Implement the Spill Response Program	3: Legal Authority and Procedures to Respond to Reports of Illicit Discharges
<i>i. Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the co-permittee's MS4.</i>			■
<i>ii. Include documentation in an enforcement response plan or similar document by November 1, 2011 describing the enforcement response procedures the permittee will implement when an illicit discharge investigation identifies a responsible party.</i>			■
<i>iii. Develop or identify pollutant parameter action levels that will be used as part of the field screening and analysis...</i>	■		
<i>iv. Conduct annual dry-weather inspection activities during the term of the permit. By June 30, 2012, the dry-weather inspection activities must include annual field screening of identified priority locations documented by the co-permittee... The dry-weather field screening activities must be documented and include: 1) General observation; 2) Field Screening; and 3) Laboratory Analysis.</i>	■		
<i>v. Identify response procedures to investigate portions of the MS4 that, based on the results of general investigations, field screening, laboratory analysis or other relevant information, such as a complaint or referral indicates the likely presence of an illicit discharge...</i>		■	

SWMP Component #1: Illicit Discharge Detection and Elimination			
Schedule A.4.a Permit Requirement	Applicable BMPs		
	1: Conduct Dry Weather Inspections	2: Implement the Spill Response Program	3: Legal Authority and Procedures to Respond to Reports of Illicit Discharges
vi. <i>Maintain a system for documenting illicit discharge complaints or referrals, and suspected illicit discharge investigation activities.</i>		■	■
vii. <i>Once the source of an illicit discharge is determined, the co-permittee must take appropriate action to eliminate the illicit discharges, including an initial evaluation of the feasibility to eliminate the discharge, within 5 working days. If the permittee determines that the elimination of the illicit discharge will take more than 15 working days... the permittee must develop an action plan... The action plan must include an appropriate timeframe for elimination.</i>		■	
viii. <i>The co-permittee must establish, document and implement a schedule by November 1, 2011 to resolve typical illicit discharges, such as, but not limited to cross connections and illegal washing activities...</i>		■	■
ix. <i>Require spill prevention measures, and upon notification, respond to, contain and mitigate spills that may discharge into the MS4...</i>		■	■
x. <i>In the case of a known illicit discharge that originates within the co-permittee's permitted area and that discharges directly to a storm sewer system or property under the jurisdiction of another municipality, the County must notify the affected municipality as soon as practicable, but no longer than one working day.</i>			■
xi. <i>In the case of a known illicit discharge that is identified within the co-permittee permitted area, but is determined to originate from a contributing storm sewer system or property under the jurisdiction of another municipality, the co-permittee must notify the contributing municipality or municipality with jurisdiction as soon as practicable, but no longer than one working day.</i>			■
xii. <i>Maintain maps identifying (major) MS4 outfalls discharging to waters of the State. The dry-weather screening locations must be specifically identified on maps by June 30, 2012...</i>	■		

**SWMP Component #1: Illicit Discharge Detection and Elimination**

	Applicable BMPs		
	1: Conduct Dry Weather Inspections	2: Implement the Spill Response Program	3: Legal Authority and Procedures to Respond to Reports of Illicit Discharges
<b>Schedule A.4.a Permit Requirement</b>			
<i>xiii. Unless the following non-stormwater discharges are identified in a particular case as a significant source of pollutants to waters of the State by the co-permittee or the Department, they are not considered illicit discharges and are authorized by this permit: ... (see Schedule A.4.a.xiii for list of discharges)... If any of these non-stormwater discharges under the co-permittee's jurisdiction is a significant source of pollutants, the permittee must develop and require implementation of appropriate BMPs to reduce the discharge of pollutants associated with the source.</i>	■	■	■

**TABLE 1 – Illicit Discharge Detection and Elimination BMPs**

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
	<p><b>NPDES Permit Requirement</b> – (i) Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the permittee’s MS4.</p> <p><b>NPDES Permit Requirement</b> – (ii) Include documentation in an enforcement response plan or similar document by November 1, 2011 describing the enforcement response procedures the permittee will implement when an illicit discharge investigation identifies a responsible party.</p> <p><b>NPDES Permit Requirement</b> – (iii) Develop or identify pollutant parameter action levels that will be used as part of the field screening and analysis. The action levels will identify concentrations for identified pollutants that, if exceeded, will require further investigation, including laboratory sample analyses, to identify the source of the illicit discharge. The pollutant parameter action levels and rationale for using the action levels must be documented in an enforcement response plan or similar document, and reported to the Department of November 1, 2011.</p> <p><b>NPDES Permit Requirement</b> – (iv) Conduct annual dry-weather inspection activities during the term of the permit. By June 30, 2012, the dry-weather inspection activities must include annual field screening of identified priority locations documented by the co-permittee. Priority locations must, where possible, be located at an accessible location downstream of any source of suspected illegal or illicit activity or other location as identified by the permittee. Priority locations must be based on a balanced consideration of hydrological conditions, total drainage area of the location, population density of the location, traffic density, age of the structures or buildings in the area, history of the area, land use types, personnel safety, accessibility, historical complaints or other appropriate factors as identified by the co-permittee. The dry-weather field screening activities must occur after an antecedent dry period of at least 72 hours. The dry-weather field screening activities must be documented and include: 1) General observation; 2) Field Screening; and 3) Laboratory Analysis.</p> <p><b>NPDES Permit Requirement</b> – (v) Identify response procedures to investigate portions of the MS4 that, based on the results of general observations, field screening, laboratory analysis or other relevant information, such as a complaint or referral, indicates the likely presence of an illicit discharge. The response procedures must reflect the goal to eliminate the illicit discharge and mitigate impacts from such discharges in a timely manner, as specified in subsections vii and viii below.</p> <p><b>NPDES Permit Requirement</b> – (xii) Maintain maps identifying major MS4 outfalls discharging to waters of the State. The dry-weather screening locations must be specifically identified on maps by June 30, 2012. If the permittee identifies the need to modify these maps, the maps must be updated in digital or hard-copy within six months of identification.</p> <p><b>NPDES Permit Requirement</b> – (xiii) Unless the following non-stormwater discharges are identified in a particular case as a significant source of pollutants to waters of the State by the co-permittee or the Department, they are not considered illicit discharges and are authorized by this permit: water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated groundwater infiltration; uncontaminated pumped ground water; discharges from potable water sources; start up flushing of groundwater wells; aquifer storage and recovery (ASR) wells; potable groundwater monitoring wells; draining and flushing of municipal potable water storage reservoirs; foundation drains; air conditioning 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 waters; discharges of treated water from investigation, removal and remedial actions selected or approved by the Department pursuant to Oregon Revised Statute (ORS) Chapter 465; and, discharges or flows from emergency fire fighting activities. If any of these non-stormwater discharges under the co-permittee’s jurisdiction is a significant source of pollutants, the permittee must develop and require implementation of appropriate BMPs to reduce the discharge of pollutants associated with the source.</p>	

<p><b>1: Conduct Dry Weather Inspections</b></p>	<p><b>Responsible for Implementation:</b> CCDTD</p> <p><b>Permit Year:</b> 2012</p> <p><b>BMP Description:</b> CCDTD will facilitate identifying the presence and location of any major outfalls in the county road rights of way within the high priority areas, and determine whether additional dry weather screening is warranted.</p> <p><b>Measurable Goals:</b></p> <p style="padding-left: 40px;">By June 30, 2012, facilitate a County resolution to identify the presence and location of major outfalls in the county road rights of way within the high priority areas, determine the need for a plan to address dry weather screening, and clarify the responsibilities.</p>	<p>(1) Number of major outfalls in county road rights of way within high priority areas.</p> <p>(2) Determine need for a dry weather screening plan for located outfalls.</p>
<p><b>NPDES Permit Requirement</b> – (vi) <i>Maintain a system for documenting illicit discharge complaints or referrals, and suspected illicit discharge investigation activities.</i></p> <p><b>NPDES Permit Requirement</b> – (vii) <i>Once the source of an illicit discharge is determined, the permittee must take appropriate action to eliminate the illicit discharges including an initial evaluation of the feasibility to eliminate the discharge, within 5 working days. If the permittee determines that the elimination of the illicit discharge will take more than 15 working days due to technical, logistical or other reasonable issues, the permittee must develop an action plan to eliminate the illicit discharge as soon as reasonably possible. The action plan must include an appropriate timeframe for elimination.</i></p> <p><b>NPDES Permit Requirement</b> – (viii) <i>The co-permittee must establish, document and implement a schedule by November 1, 2011 to resolve typical illicit discharges, such as, but not limited to cross connections and illegal washing activities. The schedule developed as part of this requirement may serve as the illicit discharge action plan required by Schedule D.4.a.vii for the applicable types of illicit discharge.</i></p> <p><b>NPDES Permit Requirement</b> – (ix) <i>Require spill prevention measures, and upon notification, respond to, contain and mitigate spills that may discharge into the MS4. Spills, or other similar illicit discharges, that may endanger human health or the environment must be reported in accordance with all applicable federal and state laws, including proper notification to the Oregon Emergency Response System.</i></p> <p><b>NPDES Permit Requirement</b> – (x) <i>In the case of a known illicit discharge that originates within the co-permittee’s MS4 regulated area and that discharges directly to a storm sewer system or property under the jurisdiction of another municipality, the co-permittee must notify the affected municipality as soon as practicable, and at least within one working day of identifying the illicit discharge</i></p> <p><b>NPDES Permit Requirement</b> – (xi) <i>In the case of a known illicit discharge that is identified within the co-permittee MS4 regulated area, but is determined to originate from a contributing storm sewer system or property under the jurisdiction of another municipality, the co-permittee must notify the contributing municipality or municipality with jurisdiction as soon as practicable, and at least within one working day of identifying the illicit discharge.</i></p>		

<p><b>2: Implement the Spill Response Program</b></p>	<p><b>Responsible for Implementation:</b> CCDTD</p> <p><b>Permit Year:</b> Ongoing</p> <p><b>BMP Description:</b> CCDTDs Transportation Maintenance Division follows with provisions the Oregon Department of Transportation’s <i>Routine Road Maintenance, Water Quality and Habitat Guide, Best Management Practices Guide</i>, which was revised in 2009 (ODOT Guide), for work within the county road rights of way. DTD is in the final approval stage with National Marine Fisheries Service (NMFS) to have this set of activities, described in Limit 10(i) under section 4(d) of the Endangered Species Act (ESA), as exempt from ESA take provisions when its best management practices (BMPs) are used. The stated stormwater management goal is “to reduce or eliminate pollutants of concern, to the maximum extent practicable, from entering the waters of the state.” These activities are compiled in the <i>CCDTD BMPs for Routine Road Maintenance</i> manual.</p> <p>“Accident Clean-up” is identified as Activity 149. The goal is to restore the transportation system following unforeseen incidents. Steps include:</p> <ul style="list-style-type: none"> <li>• Assess the situation for safety considerations.</li> <li>• Stop and contain any spill if appropriate.</li> <li>• Call County hazmat coordinator or environmental staff (including WES) for assistance as needed.</li> <li>• Provide traffic control as appropriate.</li> <li>• Notify Oregon Emergency Response System when applicable: <ul style="list-style-type: none"> <li>○ <u>Activating OERS:</u> <ul style="list-style-type: none"> <li>▪ Local public safety agencies such as law enforcement, fire and emergency medical services normally provide the first response to an incident. Access to this local assistance is through 9-1-1.</li> <li>▪ Once notified, local public safety agencies would call OERS at 800-452-0311 or Salem Area 503 378 6377. If necessary, responsible parties would then call the National Response Center at 800-424-8802.</li> </ul> </li> </ul> </li> </ul> <p>Larger spills are forwarded to WES, DEQ and/or the applicable fire district.</p> <p>A database maintained by the Transportation Maintenance Division documents illicit discharges within the county roads rights of way.</p> <p><b>Measurable Goal:</b></p> <ul style="list-style-type: none"> <li>• Implement the spill response program (Accident Clean-up, ODOT Guide Activity 149) and track the number of spills and illicit discharges within the county road rights of way in the high priority areas.</li> </ul>	<p>(1) Annual number and type of spills reported during road maintenance activities in the county road rights of way.</p> <p>(2) Annual number of illicit discharges reported to the CCDTD Transportation Maintenance Division within the county road rights of way.</p>
---	---	--

<p><b>3: Legal Authority and Procedures to Respond to Reports of Illicit Discharges</b></p>	<p><b>Responsible for Implementation:</b> CCDTD</p> <p><b>Permit Year:</b> Ongoing</p> <p><b>BMP Description:</b> Clackamas County has several regulatory mechanisms that prohibit release of illicit discharges into the MS4 permitted area and outline response and enforcement procedures. These include:</p> <ul style="list-style-type: none"> <li>• Surface Water Management Rules and Regulations for CCSD#1</li> <li>• Surface Water Management Rules and Regulations for SWMACC</li> <li>• General Clackamas County Code enforced according to the process developed and conducted by CCDTD’s Code Compliance Section.</li> <li>• Clackamas County Roadway Standards</li> <li>• CCDTD BMPs for Routine Road Maintenance Manual</li> </ul> <p>In the event an illicit discharge within a county road right of way is observed by county staff, other agencies, or reported by the public, CCDTD will attempt to confirm the allegation and determine a course of action in a timely manner. CCDTD relies on the regulatory mechanisms listed above, if illicit discharges are reported or encountered.</p> <p><b>Measurable Goals:</b></p> <ul style="list-style-type: none"> <li>• Respond to reports involving alleged illicit discharges within county road rights of way in a timely manner (ex. informing appropriate municipality, service district, DEQ, etc.).</li> <li>• Follow enforcement response procedures upon identification of illicit discharges as warranted and applicable.</li> </ul>	<p>(1) Status of any applicable regulatory updates or modification.</p> <p>(2) Annual number of reported alleged illicit discharges and un-authorized non-stormwater discharges.</p>
---	--	--

## SWMP Component #2 Industrial and Commercial Facilities

CCDTD does not own any facilities that are subject to a Department-issued industrial stormwater NPDES permit or have been identified as contributing a significant pollutant load to the MS4, nor are there any such facilities outside of the high priority areas (CCSD#1, SWMACC, and cities within the County). For this component of the SWMP, applicable provisions provided in Schedule A.4.b are therefore not applicable to CCDTD.

### SWMP Component #2: Industrial and Commercial Facilities

**NPDES Permit Requirement** – (i) *Screen existing and new industrial facilities to assess whether they have the potential to be subject to an industrial stormwater NPDES permit or have the potential to contribute a significant pollutant load to the MS4.*

**NPDES Permit Requirement** – (ii) *Within 30 days after the facility is identified, notify the industrial facility and the Department that an industrial facility is potentially subject to an industrial stormwater NPDES permit.*

**NPDES Permit Requirement** – (iii) *Implement a strategy that establishes the priorities and procedures for inspection of and implementation of stormwater control measures for discharges from industrial or commercial areas that have been identified as sources that contribute a significant pollutant load to the MS4.*

**Note:** The BMP “**Screen Existing and New Industrial Facilities**” is implemented by CCSD#1 and SWMACC for the Districts as outlined in their SWMPs. It does not apply to areas outside of the Districts within the UGB as industrial facilities are not located in these areas.

**Note:** The BMP “**Address Other Industrial Facilities**” is implemented by CCSD#1 and SWMACC for the Districts as outlined in their SWMPs. It does not apply to areas outside of the Districts within the UGB as industrial facilities are not located in these areas.

## SWMP Component #3 Construction Site Runoff Control

NPDES permit requirements are listed below followed by the Clackamas County Department of Transportation and Development (CCDTD) relevant BMPs that address the permit requirement within the high priority area county road rights of way. For this component of the SWMP, applicable provisions are outlined under Schedule A.4.c of the MS4 NPDES Permit. See **Table 3** for CCDTDs BMPs that address the permit requirements listed below.

SWMP Component #3: Construction Site Runoff Control				
Schedule A.4.c Permit Requirement	Applicable BMPs			
	4: Provide Information/Training for Construction Site Operators	5: Conduct Procedures for Site Plan Reviews	6: Conduct Enforcement Activities	7: Conduct site inspections
i. <i>Include ordinances or other enforceable regulatory mechanism that require erosion prevention and sediment controls be designed, implemented, and maintained to prevent adverse impacts to water quality and minimize the transport of contaminants to waters of the State. By January 1, 2014, the ... regulatory mechanism must apply to construction activities that result in a land disturbance of 1,000 feet or greater.</i>		■		
ii. <i>Require construction site operators to develop erosion prevention and sediment control site plans, and to implement and maintain effective erosion prevention and sediment control best management practices.</i>	■	■		
iii. <i>Require construction site operators to prevent or control non-stormwater waste that may cause adverse impacts to water quality such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste.</i>	■	■		
iv. <i>Describe site plan review procedures to ensure stormwater BMPs are appropriate and address the construction activities being proposed. At a minimum, construction site erosion prevention and sediment control plans for sites disturbing one acre or greater must be consistent with the substantive requirements of the State of Oregon's 1200-C permit.</i>		■		
v. <i>Perform on-site inspections in accordance with documented procedures and criteria to ensure the approved</i>				■

SWMP Component #3: Construction Site Runoff Control				
	Applicable BMPs			
	4: Provide Information/Training for Construction Site Operators	5: Conduct Procedures for Site Plan Reviews	6: Conduct Enforcement Activities	7: Conduct site inspections
<b>Schedule A.4.c Permit Requirement</b>				
<i>erosion prevention and sediment control plan is properly implemented.... Inspections must be documented, including photographs and monitoring results as appropriate.</i>				
vi. <i>Describe in an enforcement response plan or similar document the enforcement response procedures the permittee will implement. The enforcement response procedures must ensure construction activities are in compliance with the ordinances or other regulatory mechanisms.</i>			■	

**TABLE 3 – Construction Site Runoff Control BMPs**

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
<p><b>NPDES Permit Requirement</b> – (i) <i>Include ordinances or other enforceable regulatory mechanism that require erosion prevention and sediment controls be designed, implemented, and maintained to prevent adverse impacts to water quality and minimize the transport of contaminants to waters of the State. By January 1, 2014, the construction site runoff control program ordinances or other enforceable regulatory mechanism must apply to construction activities that result in a land disturbance of 1,000 feet or greater.</i></p> <p><b>NPDES Permit Requirement</b> – (ii) <i>Require construction site operators to develop erosion prevention and sediment control site plans, and to implement and maintain effective erosion prevention and sediment control best management practices.</i></p> <p><b>NPDES Permit Requirement</b> – (iii) <i>Require construction site operators to prevent or control non-stormwater waste that may cause adverse impacts to water quality such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste.</i></p> <p><b>NPDES Permit Requirement</b> – (iv) <i>Describe site plan review procedures to ensure stormwater BMPs are appropriate and address the construction activities being proposed. At a minimum, construction site erosion prevention and sediment control plans for sites disturbing one acre or greater must be consistent with the substantive requirements of the State of Oregon’s 1200-C permit site erosion prevention and sediment control plans.</i></p>		
<p><b>4: Provide Information/ Training to Construction Site Operators</b></p>	<p><b>Responsible for Implementation:</b> CCDTD</p> <p><b>Permit Year:</b> Ongoing</p> <p><b>BMP Description:</b> CCDTD participates in educational and training measures for construction site operators. These activities include the following:</p> <ul style="list-style-type: none"> <li>• CCDTD Engineering Division conducts preconstruction meetings with in-house and contracted construction staff prior to commencement of county roadway capital improvement construction projects. Regulatory requirements, site, stormwater, and environmental protection measures are highlighted.</li> <li>• Training of CCDTD Transportation Maintenance Division staff is a required component of its adopted <i>CCDTD Best Management Practices for Routine Road Maintenance</i> program. This training program is ongoing and includes such topics as erosion and sediment control, ESA/permitting awareness and understanding, and stormwater and sanitary collection system maintenance, etc.</li> <li>• CCDTD development and planning staff provides information to developers and contractors during plan review and in the development of County roadway capital improvement projects to address regulatory requirements, facilitate the identification and implementation of appropriate stormwater BMPs, and provide additional information and suggestions.</li> </ul>	<p>(1) Annual number of project-specific preconstruction conferences conducted by/for CCDTD Engineering and Transportation Maintenance Divisions.</p>

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
	<ul style="list-style-type: none"> <li>• CCDTD offers to the development community (in its Permits Lobby) flyers, brochures, and information on local training events and measures regarding responsible stormwater management, site preservation, recycling, and the reduction of pesticide and herbicide use.</li> <li>• The <i>Erosion Prevention and Sediment Control Planning and Design Manual</i> was developed in coordination with multiple regional jurisdictions. It is available online for contractors, citizens, or others involved with construction activities within the permit area. An additional recommended erosion control document is the DEQ <i>Best Management Practices for Storm Water Discharges Associated with Construction Activities</i>.</li> </ul> <p><b>Measurable Goal:</b></p> <ul style="list-style-type: none"> <li>• Conduct project-specific training for construction site operators.</li> </ul>	
<p><b>5: Conduct Procedures for Site Plan Review and Require Erosion Controls</b></p>	<p><b>Responsible for Implementation:</b> CCDTD</p> <p><b>Permit Year:</b> Ongoing</p> <p><b>BMP Description:</b> The County is provided the authority to require erosion control through the County’s Zoning and Development Ordinance (ZDO) Section 1008 – <i>Storm Drainage</i>. All reviews are conducted in accordance with the <i>Clackamas County Roadway Standards</i> which recently adopted by reference, with minor provisions, the Districts’ <i>Surface Water Management Rules and Regulations</i>. These regulations require submittal of an erosion prevention and sediment control (EPSC) plan containing structural and/or non-structural BMPs to be constructed or used concurrently with land development. Maintenance of all erosion control measures pursuant to an approved plan is the applicant’s responsibility.</p> <p>The <i>Erosion Prevention and Sediment Control Planning and Design Manual</i> (revised in 2009) is part of the EPSC requirements and is also suggested as an educational resource to the development community for preparation of plans for erosion prevention and sediment control. In addition to erosion prevention and sediment control, the document also includes measures related to good house-keeping and addressing non-stormwater related waste. The DEQ <i>Best Management Practices for Storm Water Discharges Associated with Construction Activities</i> guidance document is also recommended.</p> <p><b>Measurable Goal:</b></p> <ul style="list-style-type: none"> <li>• Review applicable plans and assess the need for structural and non-structural erosion and sediment control BMPs submitted as part of the building permit process.</li> </ul>	<p>(1) Annual number of site plan reviews and approved plans.</p>

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
<p><b>NPDES Permit Requirement</b> – (vi) Describe in an enforcement response plan or similar document of the enforcement response procedures the permittee will implement. The enforcement response procedures must ensure construction activities are in compliance with the ordinances or other regulatory mechanisms.</p>		
<p><b>6: Conduct Enforcement Activities</b></p>	<p><b>Responsible for Implementation:</b> CCDTD  <b>Permit Year:</b> Ongoing  <b>BMP Description:</b> Enforcement for noncompliance of approved erosion prevention and sediment control measures for disturbances of new construction or redevelopment projects are supplemented by Clackamas County through the CCDTD’s Code Compliance Section, allowed through General County Codes.            To provide a more expeditious cessation and remediation of noncompliant activities, CCDTD staff would likely inform Oregon State Police (503-731-3020), CCSD#1, SWMACC, DEQ, Department of State Lands, US Army Corps of Engineers, etc. as appropriate and applicable.  <b>Measurable Goal:</b></p> <ul style="list-style-type: none"> <li>Enforce noncompliance of applicable approved erosion prevention and sediment control measures per the allowed measures provided through the General County Code.</li> </ul>	<p>(1) Annual number of enforcement actions.</p>
<p><b>NPDES Permit Requirement</b> – (v) Perform on-site inspections in accordance with documented procedures and criteria to ensure the approved erosion prevention and sediment control plan is properly implemented. Inspections of construction sites must include disturbed areas of the site, material and waste storage areas, stockpile areas, construction site entrances and exits, sensitive areas, discharge locations to the MS4 and receiving waters. Inspections must be documented, including photographs and monitoring results as appropriate.</p>		
<p><b>7: Conduct Site Inspections</b></p>	<p><b>Responsible for Implementation:</b> CCDTD  <b>Permit Year:</b> Ongoing  <b>BMP Description:</b> Clackamas County’s Engineering and Transportation Maintenance Divisions conduct regular and ongoing site inspections as a component of roadway CIP and rehabilitation project construction within the county road rights-of way. These site inspections include conformance with the approved erosion control plans; recommendations for improvements are provided when warranted.  <b>Measurable Goal:</b></p> <ul style="list-style-type: none"> <li>During construction inspections of roadway CIP and rehabilitation projects, ensure conformance with the approved erosion control and sediment prevention plans.</li> </ul>	<p>(1) Annual number of CIP projects inspected for erosion prevention and sediment control plan compliance.</p>

## SWMP Component #4 Education and Outreach

NPDES permit requirements are listed below followed by the Clackamas County Department of Transportation and Development (CCDTD) relevant BMPs that address the permit requirement within the high priority area county road rights of way. For this SWMP component, applicable provisions are outlined under Schedule A.4.d of the MS4 NPDES Permit. See **Table 4** for CCDTDs BMPs that address the permit requirements listed below.

SWMP Component #4: Education and Outreach				
Schedule A.4.d Permit Requirement	Applicable BMPs			
	8: Publish and Distribute Newsletters	9: Continue Cooperative Educational and Outreach Efforts with Others	10: Participate in a Public Education Effectiveness Evaluation	11: Training for Employees
i. <i>Continue to implement a documented public education and outreach strategy that promotes pollutant source control and a reduction of pollutants in stormwater discharges...The public education and outreach strategy may incorporate cooperative efforts with other MS4 regulated permittees or efforts by other groups or organizations provided a mechanism is developed and implemented to track the public education and outreach efforts within the MS4 regulated area and the results of such efforts are reported annually.</i>	■	■		
ii. <i>Provide educational materials to the community or conduct equivalent outreach activities describing the impacts of stormwater discharges on water bodies and the steps or actions the public can take to reduce pollutants in stormwater runoff.</i>	■	■		
iii. <i>Provide public education on the proper use and disposal of pesticides, herbicides, fertilizers and other household chemicals if identified as a concern by the co-permittees.</i>	■	■		

SWMP Component #4: Education and Outreach				
Schedule A.4.d Permit Requirement	Applicable BMPs			
	8: Publish and Distribute Newsletters	9: Continue Cooperative Educational and Outreach Efforts with Others	10: Participate in a Public Education Effectiveness Evaluation	11: Training for Employees
iv. <i>As appropriate, provide public education on the proper operation and maintenance of privately-owned or operated stormwater quality management facilities.</i>	See BMP #17: Maintenance of Structural Controls			
v. <i>Provide notice to construction site operators concerning where education and training to meet erosion and sediment control requirements can be obtained.</i>	See BMP #4: Provide Information/Training for Construction Site Operators			
vi. <i>Conduct or participate in an effectiveness evaluation to measure the success of public education activities during the term of this permit. The effectiveness evaluation must focus on assessing changes in targeted behaviors. The results of the effectiveness evaluation must be used in the adaptive management of the education and outreach program, and reported to the Department no later than November 1, 2014.</i>			■	
vii. <i>Include training for municipal employees involved in MS4-related activities, as appropriate. The training should include stormwater pollution prevention and reduction from municipal operations, including, but not limited to, parks and open space maintenance, fleet and building maintenance, new municipal facility construction and related land disturbances, design and construction of street and storm drain systems, discharges from non-emergency fire fighting-related training activities, and stormwater system maintenance.</i>				■
viii. <i>Promote, publicize and facilitate public reporting of illicit discharges through the use of newspapers, newsletters, utility bills, door hangars, radio public service announcements, videos, televised council meetings, brochures, signs, posters or other effective methods.</i>	See BMP #8: Publish and Distribute Newsletters			

**TABLE 4 – Education and Outreach BMPs**

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
<p><b>NPDES Permit Requirement</b> – (i) Continue to implement a documented public education and outreach strategy that promotes pollutant source control and a reduction of pollutants in stormwater discharges....The public education and outreach strategy may incorporate cooperative efforts with other MS4 regulated permittees or efforts by other groups or organizations provided a mechanism is developed and implemented to track the public education and outreach efforts within the MS4 regulated area and the results of such efforts are reported annually.</p> <p><b>NPDES Permit Requirement</b> – (ii) Provide educational materials to the community or conduct equivalent outreach activities describing the impacts of stormwater discharges on water bodies and the steps or actions the public can take to reduce pollutants in stormwater runoff.</p> <p><b>NPDES Permit Requirement</b> – (iii) Provide public education on the proper use and disposal of pesticides, herbicides, fertilizers and other household chemicals if identified as a concern by the co-permittees.</p>		
<p><b>8: Publish and Distribute Newsletters</b></p>	<p><b>Responsible for Implementation:</b> CCDTD and Clackamas County Department of Public and Government Affairs</p> <p><b>Permit Year:</b> Ongoing</p> <p><b>BMP Description:</b> The county collaborates in the preparation and publication of two newsletters annually:</p> <ul style="list-style-type: none"> <li>• <i>Trash Talks</i> addresses safe recycling and disposal of hazardous materials, green alternatives for hazardous materials, and general solid waste issues. This effort is coordinated with Metro and other agencies across the metropolitan area. Published twice a year, <i>Trash Talks</i> is sent to every household and postal address in Clackamas County. Each issue includes public education materials on such topics as proper disposal of oil and toxic materials, the responsible use of pesticides and herbicides, etc. The CCDTD Code Compliance Section also responds to inquiries by the public to provide information regarding recycling and the disposal of hazardous materials.</li> <li>• Clackamas County Public and Government Affairs develops and distributes the newsletter, <i>Citizen News</i>. Published quarterly, <i>Citizen News</i> incorporates articles that inform the public and encourage behavioral changes to improve water quality.</li> <li>• Also, the Clackamas County Department of Public and Government Affairs collaborates with the Clackamas County Department of Emergency Management to develop and distribute annual <i>Emergency Preparedness Calendars</i>. These calendars are designed as an information source and provide approximately 65 helpful emergency and non-emergency contacts and telephone numbers, broken into five categories:</li> </ul>	<p>(1) Annual number of storm water quality-related articles published in <i>Trash Talk</i> and/or <i>Citizen News</i>.</p>

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
	<ul style="list-style-type: none"> <li>▪ <b>Emergencies</b> – including non-emergency contacts.</li> <li>▪ <b>Clackamas County</b> – including service-oriented contacts including Road Maintenance, WES, Emergency Management, Sustainability and Code Compliance Sections, Building Services, etc.</li> <li>▪ <b>Helpful Contacts</b> – including Abandoned Vehicles, Dump Stoppers, Household Hazardous Waste Collection, Natural Resource Conservation Service USDA Service Center, Poison Hotline, etc.</li> <li>▪ <b>Fire Districts</b> – including local, regional, and forestry contacts.</li> <li>▪ <b>Helpful Websites</b> – including DEQ, Metro, Oregon Dept. of Fish and Wildlife, SOLV, etc.</li> </ul> <p><b>Measurable Goals:</b></p> <ul style="list-style-type: none"> <li>• CCDTD will facilitate the inclusion of at least three articles each year with a storm water quality-related message to be published in the local newsletters, <i>Trash Talks</i> and <i>Citizen News</i>.</li> </ul>	

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
<p><b>9: Continue Cooperative Educational and Outreach Efforts with Others</b></p>	<p><b>Responsible for Implementation:</b> CCDTD and others</p> <p><b>Permit Year:</b> Ongoing</p> <p><b>BMP Description:</b> The following is one of the CCDTD programs that facilitates education and outreach:</p> <ul style="list-style-type: none"> <li>• CCDTD Engineering Division works closely and partners annually with watershed councils in the county to facilitate development of grant applications and, if awarded, to provide in-kind technical and construction services for projects that jointly improve county-maintained roadway systems and anadromous fish passage and habitat.</li> </ul> <p>The following are other programs and efforts within the county that facilitate education and outreach:</p> <ul style="list-style-type: none"> <li>• CCDTDs Office of Sustainability supports and coordinates sustainability activities within and throughout Clackamas County, and is a resource for the community. It also provides introductory training on sustainability to all employees. Several policies and plans inform the county’s approach to sustainability: <ul style="list-style-type: none"> <li>▪ Resolution for a Sustainable Clackamas County</li> <li>▪ Action Plan for a Sustainable Clackamas County</li> <li>▪ Clackamas County Policy on Sustainable Practices</li> <li>▪ Clackamas County Administrative Procedures for Implementing the Policy on Sustainable Practices</li> </ul> </li> <li>• As partners, CCSD#1, SWMACC and CCDTD continue to coordinate efforts to meet the storm water management requirements for the county. CCSD#1 and SWMACC provide the vast majority of educational and outreach efforts for the county for the high priority areas. CCDTD will continue to support the Districts to facilitate effective educational and outreach efforts and be an active participant in the County’s Storm Water Management Steering Committee.</li> <li>• The Clackamas County Soil and Water Conservation District (SWCD) focuses on making the county a place where communities, environments and economy thrive together. The SWCD provide services to landowners, organizations, agencies and local communities within Clackamas County. These services take the form of: technical assistance to individual landowners; projects involving multiple landowners and partners; income generating enterprises; and research and development activities that are replicable by other individuals and organizations at varying geographic scales.</li> </ul>	<p>(1) Annual number, type, and value of grant applications prepared with partners.</p> <p>(2) Annual number, type, and value of grants awarded with partners.</p>

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
	<ul style="list-style-type: none"> <li>CCDTD offers to the development community (in its Permits Lobby) flyers, brochures, and information on local training events and measures regarding responsible stormwater management, site preservation, recycling, and the reduction of pesticide and herbicide use.</li> </ul> <p><b>Measurable Goals:</b> Continue partnering with local watershed councils to apply for grants that jointly benefit county roadway infrastructure and anadromous fish passage and habitat.</p>	
<p><b>NPDES Permit Requirement</b> – ( viii) <i>Promote, publicize and facilitate public reporting of illicit discharges through the use of newspapers, newsletters, utility bills, door hangars, radio public service announcements, videos, televised council meetings, brochures, signs, posters or other effective methods.</i></p>		
<p><b>Note:</b> See BMP #8 – Publish and Distribute Newsletters and BMP #9 – Continue Cooperative Educational and Outreach Efforts with Others</p>		
<p><b>NPDES Permit Requirement</b> – (iv) <i>As appropriate, provide public education on the proper operation and maintenance of privately-owned or operated stormwater quality management facilities.</i></p>		
<p><b>Note:</b> See BMP #17 – Maintenance of Structural Controls</p>		
<p><b>NPDES Permit Requirement</b> – (v) <i>Provide notice to construction site operators concerning where education and training to meet erosion and sediment control requirements can be obtained.</i></p>		
<p><b>Note:</b> See BMP #4 – Provide Information/Training for Construction Site Operators</p>		
<p><b>NPDES Permit Requirement</b> – (vi) <i>Conduct or participate in an effectiveness evaluation to measure the success of public education activities during the term of this permit. The effectiveness evaluation must focus on assessing changes in targeted behaviors. The results of the effectiveness evaluation must be used in the adaptive management of the education and outreach program.</i></p>		
<p><b>10: Participate in a Public Education Effectiveness Evaluation</b></p>	<p><b>Responsible for Implementation:</b> CCDTD <b>Permit Year:</b> Ongoing <b>BMP Description:</b> As partners, CCSD#1, SWMACC and CCDTD continue to coordinate efforts to meet the stormwater management requirements for the County. CCSD#1 and SWMACC provide the vast majority of educational and outreach efforts for the County. The District’s SWMPs include a BMP to participate in a public education effectiveness evaluation. CCDTD will review results of the evaluation to identify whether results warrant changes to the SWMP.</p>	<p>(1) Report on review and response to the District’s public education effectiveness evaluation.</p>

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
	<p><b>Measurable Goals:</b></p> <ul style="list-style-type: none"> <li>Review outcomes of the District’s public education effectiveness evaluation and identify whether adaptive management changes to the SWMP are warranted based on results.</li> </ul>	
<p><b>NPDES Permit Requirement</b> – (vii) <i>Include training for municipal employees involved in MS4-related activities, as appropriate. The training should include stormwater pollution prevention and reduction from municipal operations, including, but not limited to, parks and open space maintenance, fleet and building maintenance, new municipal facility construction and related land disturbances, design and construction of street and storm drain systems, discharges from non-emergency fire fighting-related training activities, and stormwater system maintenance.</i></p>		
<p><b>11: Training for Employees</b></p>	<p><b>Responsible Department:</b> CCDTD</p> <p><b>Permit Year:</b> Ongoing</p> <p><b>BMP Description:</b> A variety of storm water management training opportunities are available to staff in the CCDTD Engineering and Transportation Maintenance Divisions that are involved in MS4-related activities. Training opportunities are available through agencies, trade associations, educational groups, and partners (such as Water Environment Services) involved with a broad range of water quality-related issues, including but not limited to:</p> <ul style="list-style-type: none"> <li>Oregon Association of Clean Water Agencies conferences</li> <li>ODOT Local Agency Training</li> <li>American Society of Civil Engineers</li> </ul> <p>Such training is provided based on need and availability.</p> <p><b>Measurable Goals:</b></p> <ul style="list-style-type: none"> <li>Attend relevant stormwater management related training based on need and availability.</li> </ul>	<p>(1) Annual number of staff in Engineering and Transportation Maintenance Divisions that receive stormwater management-related training. List type of training.</p>

## SWMP Component #5 Public Involvement and Participation

NPDES permit requirements are listed below followed by the Clackamas County Department of Transportation and Development (CCDTD) relevant BMPs that address the permit requirement within the high priority area county road rights of way. For this SWMP component, applicable provisions are outlined under Schedule A.4.e of the MS4 NPDES Permit. **See Table 5** for CCDTDs BMPs that address the permit requirements listed below.

SWMP Component #5: Public Involvement and Participation	
	Applicable BMPs
<p><b>Schedule A.4.e Permit Requirement</b></p>	<p><b>12: Provide for Public Participation with SWMP Submittal</b></p>
<p><i>e. Co-permittees must adopt a public participation approach that provides opportunities for the public to effectively participate in the development, implementation and modification of the co-permittee’s stormwater management program. The process must include provisions for receiving and considering public comments on the SWMP and the TMDL pollutant load reduction benchmark development. This public involvement does not apply to adding BMPs, and revisions or updates to existing BMPs that do not change the substance of the BMPs.</i></p>	<p>■</p>

**TABLE 5 –Public Involvement and Participation**

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
<p><b>NPDES Permit Requirement - (e)</b> <i>Co-permittees must adopt a public participation approach that provides opportunities for the public to effectively participate in the development, implementation and modification of the co-permittee’s stormwater management program. The process must include provisions for receiving and considering public comments on the SWMP and the TMDL pollutant load reduction benchmark development. This public involvement does not apply to adding BMPs, and revisions or updates to existing BMPs that do not change the substance of the BMPs.</i></p>		
<p><b>12: Provide for Public Participation with SWMP Submittal</b></p>	<p><b>Responsible Department:</b> CCDTD  <b>Permit Year:</b> Five  <b>BMP Description:</b>                      Schedule A.4.e of the MS4 NPDES permit requires the opportunity for public participation in the development and modification of the CCDTD Stormwater Management Plan (SWMP). TMDL pollutant load reduction benchmark development is conducted by CCSD#1 and SWMACC within their respective Districts; it is not being conducted for the low priority areas outside of the Districts.                       Prior to submittal, CCDTD will provide the public with an opportunity to comment on the revised draft SWMP for a minimum of 30 days. Comments on the document will be collected and considered.   <b>Measurable Goals:</b></p> <ul style="list-style-type: none"> <li>• Provide for public participation with the SWMP prior to the permit renewal application deadline.</li> </ul>	<p>N/A</p>

## SWMP Component #6 Post-Construction Site Runoff

NPDES permit requirements are listed below followed by the Clackamas County Department of Transportation and Development (CCDTD) relevant BMPs that address the permit requirement within the high priority area county road rights of way. For this component of the SWMP, applicable provisions are outlined under Schedule A.4.f of the MS4 NPDES Permit. See **Table 6** for CCDTDs BMPs that address the permit requirements listed below.

SWMP Component #6: Post-Construction Site Runoff		
	Applicable BMPs	
	13: Planning Procedures for New CIP Development	14: Update Procedures for New Development
<b>Schedule A.4.f Permit Requirement</b>		
i. <i>By January 1, 2014, the post-construction stormwater pollutant and runoff control program applicable to new development and redevelopment projects that create or replace impervious surface must meet the following conditions :1) Incorporate site-specific management practices that target natural surface or predevelopment hydrologic functions where practicable; 2) Reduce site specific post-development stormwater runoff volume and rates of discharges to the municipal separate storm sewer system (MS4)..; 3) Prioritize and include Low-Impact Development (LID), Green Infrastructure (GI) or equivalent design and construction approaches; and, 4) Capture and treat 80% of the annual average runoff volume, based on a documented local or regional rainfall frequency and intensity.</i>	■	■
ii. <i>Co-permittees must identify, and where practical, eliminate code and development standard barriers that inhibit design and implementation techniques intended to minimize impervious surfaces and reduce stormwater runoff (e.g., Low Impact Development, Green Infrastructure), and have been identified by and are within the jurisdiction of the permittee....Co-permittees must review code and development standards, and modify barriers, such as by policy, code, rules, ordinance or similar mechanism, as required within three years of identification.</i>		■

**SWMP Component #6: Post-Construction Site Runoff**

	Applicable BMPs	
	13: Planning Procedures for New CIP Development	14: Update Procedures for New Development
<b>Schedule A.4.f Permit Requirement</b>		
iii. <i>To reduce pollutants and mitigate the volume, duration, time of concentration and rate of stormwater runoff, the co-permittees must develop or reference an enforceable post-construction stormwater quality management manual or equivalent document by January 1, 2014 that, at a minimum, includes the following: 1) A minimum threshold for triggering the requirement for post-construction stormwater management control and the rationale for the threshold; 2) A defined design storm that allows for or identification of an acceptable continuous simulation method to address the capture and treatment of 80% of the annual average runoff volume; 3) Applicable LID, GI or similar stormwater runoff reduction approaches, including the practical use of these approaches; 4) Conditions where the implementation of LID, GI or equivalent approaches may be impracticable; and, 5) Best Management Practices.</i>	■	■
iv. <i>Co-permittees must review, approve and verify proper implementation of post-construction site plans for new development and redevelopment projects applicable to this section.</i>	■	
v. <i>Where a new development or redevelopment project site is characterized by factors limiting use of on-site stormwater management methods to achieve the post-construction site runoff performance standards, ...the Post-Construction Stormwater Management program must require equivalent measures, such as off-site stormwater quality management. Offsite stormwater quality management may include off-site mitigation, a stormwater quality structural facility mitigation bank, or a payment-in-lieu program.</i>		■
vi. <i>A description of the enforcement response procedures the co-permittee will follow when addressing project compliance issues with the enforceable post-construction stormwater management performance standards.</i>	See BMP #6: Conduct Enforcement Activities	

**TABLE 6 – Post-Construction Site Runoff BMPs**

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
	<p><b>NPDES Permit Requirement – (i)</b> <i>By January 1 2014, the post-construction stormwater pollutant and runoff control program applicable to new development and redevelopment projects that create or replace impervious surface must meet conditions described in this subsection. The minimum project threshold applicablke to the co-permittees post-construction stormwater pollutant and runoff control program is identified in Table A-1. The post-construction stormwater site runoff conditions are as follows: 1) Incorporate site-specific management practices that target natural surface or predevelopment hydrologic functions where practicable. The site-specific management practices should optimize on-site retention based on the site conditions; 2) Reduce site-specific post-development stormwater runoff volume and rates of discharges to the municipal separate storm sewer system (MS4) to minimize hydrological and water quality impacts from impervious surfaces; 3) Prioritize and implement Low-Impact Development (LID), Green Infrastructure (GI) or equivalent design and construction approaches; and, 4) Capture and treat 80% of the annual average runoff volume, based on a documented local or regional rainfall frequency and intensity.</i></p> <p><b>NPDES Permit Requirement – (ii)</b> <i>Co-permittees must identify, and where practicable, minimize or eliminate code and development standard barriers that inhibit design and implementation techniques intended to minimize impervious surfaces and reduce stormwater runoff (e.g., Low Impact Development, Green Infrastructure), and have been identified by and are within the jurisdiction of the permittee. If the minimization or elimination of a code and development standard barrier conflicts with public and environmental health and safety standards, the co-permittee may modify the code and development standard accordingly to address such conflicts. Co-permittees must review code and development standards for minimization or elimination, and appropriately modify within three years of identification of the code or development standard as a barrier.</i></p> <p><b>NPDES Permit Requirement – (iii)</b> <i>To reduce pollutants and mitigate the volume, duration, time of concentration and rate of stormwater runoff, the co-permittees must develop or reference an enforceable post-construction stormwater quality management manual or equivalent document by January 1, 2014 that,, at a minimum, includes the following: 1) A minimum threshold for triggering the requirement for post-construction stormwater management control and the rationale for the threshold; 2) A defined design storm that allows for or identification of an acceptable continuous simulation method to address the capture and treatment of 80% of the annual average runoff volume; 3) Applicable LID, GI or similar stormwater runoff reduction approaches, including the practical use of these approaches; 4) Conditions where the implementation of LID, GI or equivalent approaches may be impracticable; and, 5) Best Management Practices, including a description of the following: a) Site-specific design requirements; b) Design requirements that do not inhibit maintenance; c) Conditions where the BMP applies; and, d) Pollutant removal efficiency performance goals that maximize the reduction in discharge of pollutants.</i></p> <p><b>NPDES Permit Requirement – (iv)</b> <i>Co-permittees must review, approve and verify proper implementation of post-construction site plans for new development and redevelopment projects applicable to this section.</i></p> <p><b>NPDES Permit Requirement – (v)</b> <i>Where a new development or redevelopment project site is characterized by factors limiting use of on-site stormwater management methods to achieve the post-construction site runoff performance standards, such as high water table...the Post-Construction Stormwater Management program must require equivalent measures, such as off-site stormwater quality management. Off-site stormwater quality management may include off-site mitigation, such as construction of a structural stormwater facility within the sub-watershed, a stormwater quality structural facility mitigation bank or a payment-in-lieu program.</i></p> <p><b>NPDES Permit Requirement – (vi)</b> <i>A description of the enforcement response procedures the co-permittee will follow when addressing project compliance issues with the enforceable post-construction stormwater management performance standards.</i></p>	

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
<p><b>13: Planning Procedures for New Public CIP Development</b></p>	<p><b>Responsible for Implementation:</b> CCDTD</p> <p><b>Permit Year:</b> 2013</p> <p><b>BMP Description:</b> This BMP addresses the planning procedures for developing, implementing, and tracking controls to reduce the discharge of pollutants from storm sewers collecting runoff from proposed CCDTD transportation capital improvement program (CIP) projects.</p> <p>CCDTD constructs new water quality structural controls and treatment facilities wherever feasible as a component of its new development and significant rehabilitation projects, given the funding source and budget available, state and federal requirements, and CCDTD policy (CCDTD recently adopted, with minor provisions, the Surface Water Management Rules and Regulations of CCSD#1 and SWMACC). As Low Impact Development (LID) approaches to address stormwater management become more prevalent, proven, and deemed acceptable by project constituents (including state and federal agencies), it is anticipated that incorporating the planning, design, and implementation of these facilities into the CCDTD CIP projects will become standard practice.</p> <p>The location of these stormwater management facilities are currently identified in a database and maintained along with other roadway-related structures.</p> <p><b>Measurable Goals:</b></p> <ul style="list-style-type: none"> <li>• Actively participate in the planning, design, and implementation of stormwater quality treatment for new and significant rehabilitation of roadway CIP projects.</li> <li>• Track the location, type, and drainage area of new roadway CIP project water quality facilities.</li> </ul>	<p>(1) Number, type, location, and drainage area of flow control, water quality treatment or infiltration facilities installed.</p> <p>(2) Map the location of the applicable stormwater management facilities.</p>

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
<p><b>14: Update Procedures for New Development</b></p>	<p><b>Responsible for Implementation:</b> CCDTD</p> <p><b>Permit Year:</b> 2013</p> <p><b>BMP Description:</b> To encourage and support sustainable land use practices throughout the county, CCDTD staff are proposing a first phase of amendments to County land use codes that would result in more sustainable development and promote innovative concepts; low impact development (LID) approaches are included. The standards would apply to new development applications and would be administered throughout the current development review process. Public hearings are expected to be held in fall 2010.</p> <p>The <i>Clackamas County Roadway Standards</i> adopt by reference, with minor provisions, the CCSD#1 stormwater standards. CCSD#1 has embarked on a process to revise and update their development standards in late 2009 and is currently continuing to work on those revisions in 2010; several CCDTD staff are active participants in this effort. Updated standards will include new thresholds for meeting standards and increased emphasis on infiltration, on-site retention, and the duration of peak flows in order to address impacts associated with hydromodification. In addition, the design storm is being evaluated to ensure it will address the capture and treatment of 80% of average annual runoff. CCSD#1 anticipates adoption of the standards and development of a guidance manual to meet new permit requirements by January 1, 2014.</p> <p><b>Measurable Goals:</b></p> <ul style="list-style-type: none"> <li>• Adopt amendments to county land use codes facilitating sustainable development.</li> <li>• Facilitate development of the CCSD#1 standards revisions through active participation in the Stormwater Management Steering Committee, and if acceptable, create and implement a process to adopt said revisions by reference to the county <i>Roadway Standards</i>.</li> </ul>	<ol style="list-style-type: none"> <li>(1) Track status of county zoning amendments.</li> <li>(2) Adopt county zoning amendments.</li> <li>(3) Track status of CCSD#1 standards revision.</li> <li>(4) Adopt CCSD#1 standards revision by reference to the county <i>Roadway Standards</i>.</li> </ol>

## SWMP Component #7 Pollution Prevention for Municipal Operations

NPDES permit requirements are listed below followed by the Clackamas County Department of Transportation and Development (CCDTD) relevant BMPs that address the permit requirement within the high priority area county rights of way. Applicable provisions are outlined under Schedule A.4.g of the MS4 NPDES Permit. See **Table 7** for CCDTDs BMPs that address the permit requirements listed below.

SWMP Component #7: Pollution Prevention for Municipal Operations		
	Applicable BMPs	
	15: County Roadway Operations and Maintenance Program	16: Pesticide, Herbicide and Fertilizer Management
<b>Schedule A.4.g Permit Requirement</b>		
<i>i. Operate and maintain public streets, roads and highways over which the permittee has authority in a manner designed to minimize the discharge of stormwater pollutants to the MS4, including pollutants discharged as a result of deicing activities and yard debris reduction and disposal programs;</i>	■	
<i>ii. Implement a management program to control the use and application of pesticides, herbicides and fertilizers on municipally-owned properties;</i>		■
<i>iii. By January 1, 2013, inventory, assess, and implement a strategy to reduce the impact of stormwater runoff from municipal facilities that treat, store or transport municipal waste, such as yard waste or other municipal waste not already covered under a 1200 series NPDES permit;</i>	Not applicable.	
<i>iv. Implement controls to limit infiltration of seepage from the municipal sanitary sewer system to the MS4 where necessary;</i>	Addressed by Districts in High Priority areas.	

**SWMP Component #7: Pollution Prevention for Municipal Operations**

	Applicable BMPs	
	15: County Roadway Operations and Maintenance Program	16: Pesticide, Herbicide and Fertilizer Management
<b>Schedule A.4.g Permit Requirement</b>		
v. <i>Implement a program to control the release of materials related to fire-fighting training activities; and,</i>		Not applicable.
vi. <i>Assess co-permittee flood control projects to identify potential impacts on the water quality of receiving water bodies and determine the feasibility of retrofitting structural flood control devices for additional stormwater pollutant removal. The results of this assessment must be incorporated and considered along with the results of the Stormwater Retrofit Assessment required by this permit.</i>		Addressed by Districts in High Priority areas.

**TABLE 7 – Pollution Prevention for Municipal Operations BMPs**

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
<p><b>NPDES Permit Requirement</b> – (i) Operate and maintain public streets, roads and highways over which the permittee has authority in a manner designed to minimize the discharge of stormwater pollutants to the MS4, including pollutants discharged as a result of deicing activities and yard debris reduction and disposal programs;</p>		
<p><b>15: County Roadway Operations and Maintenance Program</b></p>	<p><b>Responsibility for Implementation:</b> CCDTD  <b>Permit Year:</b> Ongoing  <b>BMP Description:</b> Designated Clackamas County road rights-of-way within the UGB incorporate stormwater conveyance system components including ditches, inlets, storm sewer pipelines, catch basins, and culverts. CCDTD’s Transportation Maintenance Division oversees the operation and maintenance of this system on a daily basis.</p> <p>CCDTDs Transportation Maintenance Division follows with provisions the Oregon Department of Transportation’s <i>Routine Road Maintenance, Water Quality and Habitat Guide, Best Management Practices Guide</i>, which was revised in 2009 (ODOT Guide), for work within the county roads rights-of-way. The County is in the final approval stage with National Marine Fisheries Service (NMFS) to have this set of activities described in Limit 10(i) under section 4(d) of the Endangered Species Act (ESA) as exempt from ESA take provisions when its best management practices (BMPs) are used. The stated stormwater management goal is “to reduce or eliminate pollutants of concern, to the maximum extent practicable, from entering the waters of the state.” These activities are compiled in the <i>CCDTD BMPs for Routine Road Maintenance</i> manual. It is anticipated that this current program will be approved by NMFS and formally adopted by the County in 2011. Typical maintenance activities include:</p> <ul style="list-style-type: none"> <li>• Ditch cleaning – Ditches are cleaned on a prioritized basis depending largely on upcoming scheduled road work.</li> <li>• Catch-basin cleaning – Vactor waste is taken to a decant facility (near SE Evelyn St. and Jennifer St.) where liquid waste is drained into the CCSD#1 sanitary sewer system.</li> <li>• Street sweeping – Major arterial curbed county roadways are swept on a regular basis (depending on traffic volumes, presence of deciduous trees, season, etc.). Two street sweepers are in continual use on the estimated 400 miles of subject roadways. Sweeping is also conducted to collect sand that has been applied to address icy roadways.</li> </ul>	<ol style="list-style-type: none"> <li>(1) Formally adopt the 2009 ODOT Guide.</li> <li>(2) Number of miles of ditches cleaned.</li> <li>(3) Percent and/or number of public catch basins cleaned and volume and/or weight of debris captured.</li> <li>(4) Number of miles of streets swept and volume and/or weight of debris captured.</li> </ol>

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
	<p>Hazardous material collected during maintenance activities is properly disposed of in approved areas.</p> <p><b>Measurable Goals:</b></p> <ul style="list-style-type: none"> <li>Formally adopt the 2009 ODOT Guide.</li> <li>Track the county roadway operations and maintenance program.</li> </ul>	
<p><b>NPDES Permit Requirement – (ii) Implement a management program to control the use and application of pesticides, herbicides and fertilizers on municipally-owned properties;</b></p>		
<p><b>16: Pesticide, Herbicide and Fertilizer Programs</b></p>	<p><b>Responsibility for Implementation:</b> CCDTD</p> <p><b>Permit Year:</b> 2012</p> <p><b>BMP Description:</b> CCDTD’s Transportation Maintenance Division and Parks staff implement a pesticide, herbicide and fertilizer program within the county for their respective facilities. They oversee an Integrated Vegetation Management Plan (IVM) that addresses proper vegetation removal, mechanical use, and appropriate chemical application. Chemical products are applied by trained personnel only within specific areas and are used in a manner consistent with product labeling. Spot spraying is used along road shoulders and for foliage in the road rights of way. At least one trained applicator is licensed, and is recertified annually.</p> <p>CCDTD is sensitive to “no spraying” requests by the public and maintains offset areas limiting spraying near waterways and riparian areas.</p> <p>The IVM program is slated to be reviewed and updated in the near future; opportunities to minimize and avoid the use of chemicals will be a major consideration.</p> <p><b>Measurable Goal:</b></p> <ul style="list-style-type: none"> <li>Track the existing CCDTD IVM program.</li> <li>Review the existing IVM program and provide recommendations to minimize the use of chemicals by January 1, 2013.</li> </ul>	<p>(1) Track policy and/or procedural changes associated with IVM program.</p> <p>(2) Track quantity of herbicide use per zip code and/or sub-watershed basin.</p>
<p><b>NPDES Permit Requirement – (iii) By January 1, 2013, inventory, assess, and implement a strategy to reduce the impact of stormwater runoff from municipal facilities that treat, store or transport municipal waste, such as yard waste or other municipal waste not already covered under a 1200 series NPDES permit;</b></p>		

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
	<p><b>Note:</b> During the first year of the permit, CCDTD will inventory municipal facilities to ensure this requirement is not applicable. It is not anticipated to be applicable given that street wastes are taken to, and temporarily stored at a decant facility where runoff drains to the sanitary system.</p>	
	<p><b>NPDES Permit Requirement – (iv) Implement controls to limit infiltration of seepage from the municipal sanitary sewer system to the MS4 where necessary</b></p>	
	<p><b>Note:</b> This requirement is being met by the Districts for the high priority areas within the permit boundary. See the District’s SWMPs.</p>	
	<p><b>NPDES Permit Requirement – (v) Implement a program to control the release of materials related to fire-fighting training activities;</b></p>	
	<p><b>Note:</b> If any fire fighting training activities are conducted in CCDTD, they are conducted by Clackamas County Fire District #1 or the Tualatin Valley Fire District. The Districts have a BMP in their SWMPs to check in with the fire departments regarding stormwater issues.</p>	
	<p><b>NPDES Permit Requirement – (vi) Assess co-permittee flood control projects to identify potential impacts on the water quality of receiving water bodies and determine the feasibility of retrofitting structural flood control devices for additional stormwater pollutant removal. The results of this assessment must be incorporated and considered along with the results of the Stormwater Retrofit Assessment required by this permit;</b></p>	
	<p><b>Note:</b> Flood control projects and water quality retrofits are identified through watershed action planning conducted by the Districts for the high priority areas within the permit boundary.</p>	

## SWMP Component #8 Structural Stormwater Facility Operations and Maintenance

NPDES permit requirements are listed below followed by the Clackamas County Department of Transportation and Development (CCDTD) relevant BMPs that address the permit requirement within the high priority area county road rights of way. For this component of the SWMP, applicable provisions are outlined under Schedule A.4.h of the MS4 NPDES Permit. See **Table 8** for CCDTDs BMPs that address the permit requirements listed below.

SWMP Component #8: Structural Stormwater Facility Operations and Maintenance	
	Applicable BMPs
Schedule A.4.h Permit Requirement	17: Maintenance of Structural Controls
<p>i. <i>Co-permittees must implement a program by January 1, 2013 to verify that stormwater structural facilities and controls are inventoried, mapped, inspected, operated and maintained for effective pollutant removal, infiltration and/or flow control. At a minimum, the program must include the following: 1) Legal authority to inspect and require effective operation and maintenance; 2) A program to inventory and map public and private stormwater treatment facilities as provided under Schedule A.4.h.ii.; and, 3) Public and private stormwater facility inspection and maintenance requirements for stormwater facilities that have been inventoried and mapped as provided under Schedule A.4.h.ii.</i></p>	■
<p>ii. <i>As part of the Stormwater Structural Facilities and Controls Inspection and Maintenance program, co-permittees must develop and implement a strategy that guides the long-term maintenance and management of all publicly-owned and identified privately-owned stormwater structural facilities and controls. At a minimum, the plan or approach must describe the following:</i></p> <ol style="list-style-type: none"> <li>1. <i>Publicly-owned or operated stormwater quality facilities inventory and mapping process, inspection and maintenance schedule, inspection, operation and maintenance criteria and priorities, description of inspector type and staff position or title, and, inspection and maintenance tracking mechanisms; and</i></li> <li>2. <i>Privately-owned or operated stormwater quality facilities procedures for and types of stormwater facilities that will be inventoried and mapped, inspection criteria, rationale, priorities, inspection frequency and procedures, required training or qualifications to inspect private stormwater facilities, reporting requirements, and, inspection and maintenance tracking mechanism.</i></li> </ol>	■

**TABLE 8 – Structural Stormwater Facilities Operations and Maintenance BMPs**

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
	<p><b>NPDES Permit Requirement</b> – (i) <i>Co-permittees must implement a program by January 1, 2013 to verify that stormwater structural facilities and controls are inventoried, mapped, inspected, operated and maintained for effective pollutant removal, infiltration and/or flow control. At a minimum, the program must include the following: 1) Legal authority to inspect and require effective operation and maintenance; 2) A program to inventory and map public and private stormwater treatment facilities as provided under Schedule A.4.h.ii.; and, 3) Public and private stormwater facility inspection and maintenance requirements for stormwater facilities that have been inventoried and mapped as provided under Schedule A.4.h.ii.</i></p> <p><b>NPDES Permit Requirement</b> – (ii) <i>As part of the Stormwater Structural Facilities and Controls Inspection and Maintenance program, co-permittees must develop and implement a strategy that guides the long-term maintenance and management of all publicly-owned and identified privately-owned stormwater structural facilities and controls. At a minimum, the plan or approach must describe the following:</i></p> <ol style="list-style-type: none"> <li>1) <i>Publicly-owned or operated stormwater quality facilities inventory and mapping process; inspection and maintenance schedule; inspection, operation and maintenance criteria and priorities; description of inspector type and staff position or title; and, inspection and maintenance tracking mechanisms; and</i></li> <li>2) <i>Privately-owned or operated stormwater quality facilities procedures for and types of stormwater facilities that will be inventoried and mapped, including the rationale and criteria used...; inspection criteria, rationale, priorities, inspection frequency and procedures; required training or qualifications to inspect private stormwater facilities; reporting requirements; and, inspection and maintenance tracking mechanism.</i></li> </ol>	

CCDTD BMP Descriptions	BMP Implementation	Tracking Measures
<p><b>17: Maintenance of Structural Controls</b></p>	<p><b>Responsibility for Implementation:</b> CCDTD</p> <p><b>Permit Year:</b> Ongoing</p> <p><b>BMP Description:</b> CCDTD constructs new public water quality structural controls and treatment facilities wherever feasible as a component of the capital improvement program (CIP) development and significant rehabilitation projects, given the funding source and budget available and state and federal requirements.</p> <p>Public stormwater management facilities located within county transportation rights of way are identified in a database maintained by the Transportation Maintenance Division. The conveyance components may include culverts, storm sewer lines and inlets. The stormwater treatment components may include aboveground stormwater facilities, sedimentation manholes, and underground proprietary pollution control systems.</p> <p>These public stormwater facilities are maintained along with other roadway-related structures (see BMP #15 – County Roadway Operations and Maintenance Program). Facilities are inspected for indications of illegal dumping and disposal and any damaged or nonfunctioning components. Maintenance is typically conducted during inspection and generally includes the removal of sediment, trash and debris, the replacement of proprietary system components (i.e., filter cartridges), and the removal and/or replacement of vegetation.</p> <p>The Districts address maintenance of private water quality facilities in the high priority areas.</p> <p><b>Measureable Goals:</b></p> <ul style="list-style-type: none"> <li>• Continue to verify that CIP stormwater structural facilities and controls are inventoried, mapped, inspected, operated and maintained.</li> <li>• By January 1, 2013, develop a strategy that guides the long-term maintenance and management of CIP stormwater structural facilities and controls.</li> </ul>	<p>(1) Develop long-term structural control maintenance and management strategy</p>