MS4 NPDES Permit
Stormwater Management Plan
for
Surface Water Management Agency of Clackamas County
and the City of Rivergrove

September 21, 2010

WATER ENVIRONMENT SERVICES
A Department of Clackamas County

SWMP Overview

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Component #1:	Illicit Discharge Detection and Elimination
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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 SWMACC's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.a of the SWMACC's MS4 NPDES Permit. **See Table 1** for SWMACC' BMPs that address the permit requirements listed below.

SWMP Component #1: Illicit Discharge Detection and Elimination			
	Applicable BMPs		
Schedule A.4.a Permit Requirement	1: Conduct Dry Weather Inspections	2: Implement the Spill Response Program	3: Respond to Reports of Illicit Discharges
i. Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the permittee's MS4.	■		
ii. Describe enforcement response procedures.	■		
iii. Develop or identify dry-weather field screening pollutant parameter action levels that will be used as part of the field analysis to identify the source of an illicit discharge or other type of discharge….by November 1, 2011.	■		
iv. Conduct annual dry-weather inspection activities during the term of the permit. The dry-weather field screening activities must be documented and include: 1) General observation; 2) Field Screening; and 3) Laboratory Analysis.	■		
v. Require investigations of portions of the MS4 that, based on the results of general observations, field screening, laboratory analysis or other relevant information, indicates the presence of illicit discharges or non-stormwater discharges.	■		■

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: Respond to Reports of Illicit Discharges
vi. Require spill preventative measures, and upon notification, respond to, contain and mitigate spills that may discharge into the MS4….		■	■
vii. Take appropriate action to remove illicit discharges from the MS4 within 5 working days of detection…. The co-permittee must develop an action plan to eliminate the illicit discharge and submit the action plan to the Department within 15 working days of detection. The action plan must include an appropriate timeframe for elimination.	■		
viii. Maintain a system for documenting and procedures for responding to known or suspected illicit discharges or public complaints relating to illicit discharges.	■		■
ix. In the case of a known illicit discharge that originates within the SWMACC's permitted area and that discharges directly to a storm sewer system or property under the jurisdiction of another municipality, the SWMACC must notify the affected municipality as soon as practicable, but no longer than one working day.	■		
x. In the case of a known illicit discharge that is identified within the SWMACC's permitted area, but is determined to originate from a contributing storm sewer system or property under the jurisdiction of another municipality, the SWMACC must notify the contributing municipality or municipality with jurisdiction as soon as practicable, but no longer than one working day.	■		
xi. Maintain maps identifying major MS4 outfalls discharging to waters of the State. The dry-weather screening locations must be uniquely identified.	■		
xii. Unless identified as a significant source of pollutants to waters of the State by a co-permittee or the Department, the following non-stormwater discharges are not considered illicit discharges: (see Schedule A.4.a.xi for list of discharges). If a non-stormwater discharge is identified as a significant source of pollutants, the co-permittees must develop and require implementation of appropriate BMPs to reduce the discharge of pollutants associated with the source.	■		

TABLE 1 – Illicit Discharge Detection and Elimination BMPs

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(i) Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the permittee's MS4.*		
NPDES Permit Requirement – *(ii) Describe in an enforcement response plan or similar document the enforcement response procedures the permittee will implement when an illicit discharge investigation identifies a responsible party.*		
NPDES Permit Requirement – *(iii) Develop or identify dry-weather field screening pollutant parameter action levels that will be used as part of the field analysis to identify the source of an illicit discharge or other type of discharge. The pollutant parameter action level and rationale for using the action level must be documented and reported to the Department by November 1, 2011.*		
NPDES Permit Requirement – *(iv) Conduct annual dry-weather inspection activities during the term of the permit. The dry-weather inspection activities must include annual field screening of all priority locations identified and 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 co-permittee. Priority locations must be based on a consideration of hydrological conditions, total drainage area of the location, population density of the location, traffic density, age of the structures or building 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 at least 72-hours after a precipitation event. The dry-weather field screening activities must be documented and include: 1) General observation; 2) Field Screening; and 3) Laboratory Analysis.*		
NPDES Permit Requirement – *(v) Require investigations of portions of the MS4 that, based on the results of general observations, field screening, laboratory analysis or other relevant information, indicates the presence of illicit discharges or non-stormwater discharges not exempted under the provisions of 4.a.xii of this section.*		
NPDES Permit Requirement – *(vii) Take appropriate action to remove illicit discharges from the MS4 within 5 working days of detection. If it has been determined that removal of the illicit discharge will take more than 5 working days due to technical or other reasonable issues, the co-permittee must notify the Department within 5 working days of detection. The co-permittee must develop an action plan to eliminate the illicit discharge and submit the action plan to the Department within 15 working days of detection. The action plan must include an appropriate timeframe for elimination.*		
NPDES Permit Requirement – *(viii) Maintain a system for documenting and procedures for responding to known or suspected illicit discharges or public complaints relating to illicit discharges.*		
NPDES Permit Requirement – *(ix) In the case of a known illicit discharge that originates within the SWMACC's permitted area and that discharges directly to a storm sewer system or property under the jurisdiction of another municipality, the SWMACC must notify the affected municipality as soon as practicable, but no longer than one working day.*		
NPDES Permit Requirement – *(x) In the case of a known illicit discharge that is identified within the SWMACC's permitted area, but is determined to originate from a contributing storm sewer system or property under the jurisdiction of another municipality, the SWMACC must notify the contributing municipality or municipality with jurisdiction as soon as practicable, but no longer than one working day.*		

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(xi) Maintain maps identifying major MS4 outfalls discharging to waters of the State. The dry-weather screening locations must be uniquely identified.* **NPDES Permit Requirement** – *(xii) Unless identified as a significant source of pollutants to waters of the State by a co-permittee or the Department, the following non-stormwater discharges are not considered illicit discharges: 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, the state's environmental cleanup law; and discharges or flows from emergency fire fighting activities where discharges or flows from fire fighting activities are identified as not a significant source of pollutants to waters of the state. If a non-stormwater discharge is identified as a significant source of pollutants, the co-permittees must develop and require implementation of appropriate BMPs to reduce the discharge of pollutants associated with the source.*		
1: Conduct Dry Weather Inspections	**Responsible for Implementation:** SWMACC **Permit Year:** Ongoing **BMP Description:** The purpose of dry-weather outfall inspections is to detect an illicit discharge at the outfall or confirm that they are not present. If flow is detected during dry weather, District staff track it upstream through the storm sewer system to the source, and then address, or if necessary, control the discharge. Illicit discharges are detected during dry-weather inspections through the use of hand-held water quality measuring equipment and through visual inspections by the inspector. When a visual inspection or a pollutant level measured at an outfall indicates that an illicit discharge may be present, an upstream investigation through the storm sewer system is performed. When the discharge's source is located, District staff work with the property owner and/or business owner to evaluate, and if necessary, control the discharge. Storm sewer outfalls in the MS4-permitted area that are owned by Clackamas County DTD and/or the District are divided into two categories: major and minor outfalls. According to the MS4 permit and EPA, a major outfall is an outfall which: • is a large pipe (≥36" inside diameter), or • is a conveyance other than circular pipe that serves a drainage area of more than 50 acres, or • is a single pipe (≥12" inside diameter) if it also receives any drainage from lands zoned for industrial activity, or • is a single conveyance other than a circular pipe which receives drainage from more than two acres of land zoned for industrial activity.	(1) Number of outfalls inspected during dry-weather. (2) Number and type of illicit discharges that were encountered and controlled. (3) Status of updating procedures to address new permit requirements.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
	Major or priority outfalls are inspected by District staff for the presence of illicit discharges at least once per year (for a list of outfalls current at the time of the permit renewal application. The inspections are performed during the Willamette Valley's seasonal dry period (summer and early fall) and are not performed if measurable rain has fallen within the previous 24 hours. These guidelines have been set to aid in the detection of illicit discharges by avoiding rainfall and by minimizing the presence of groundwater which commonly seeps into storm sewer systems, for these relatively clean waters will dilute any illicit discharges that may be within the storm sewer system, making their detection difficult or impossible. A DEQ-approved inspection form is completed during each site visit. Data collected includes, but is not limited to, the following: • Inspector(s) name(s) • Date and time of visit • Water flow (present or absent) • If flow is present, unusual odors, colors, and floating/suspended solids are noted if they're observed. If unusual odors, colors, and/or solids are observed, an upstream investigation for the possible presence of an illicit discharge is promptly conducted. • If flow is present, water quality data are collected with portable, hand-held meters. Parameters monitored for usually include pH, conductivity, temperature, total residual chlorine, and total dissolved solids. If excessive levels of any pollutant are detected (based on a list of pollutant parameter action levels), an upstream investigation for the possible presence of an illicit discharge is promptly conducted. See BMP #12 for a description of how SWMACC facilitates public reporting of illicit discharges. All wastewaters that are suspected of being an illicit discharge are investigated and documented by District staff. Copies of important documents which pertain to each investigation are often referred to DEQ's Northwest Region for review, as DEQ continues to reserve the right to assume a direct role in any case involving the discharge of waste to public water bodies. When an illicit discharge is identified, control options may be required. Control options that may be applied or recommended by the District include, but are not limited to: • The removal of certain pollutants from the wastewater prior to discharge to the storm sewer system (i.e. cease usage of soap when washing).	

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
	• Issuance of the proper discharge permit from the State of Oregon's Department of Environmental Quality (DEQ). A discharge that has been authorized and controlled by a DEQ water quality permit is not an illicit discharge. • Application of the wastewater to dry land with no discharge to surface waters or storm sewers. This option is inappropriate for certain types of wastewaters, discharge rates, and soil types and may require the issuance of a WPCF permit from DEQ. • Wastewater reuse without any discharge. • Hauling the wastewater off-site for proper disposal. Other jurisdictions are notified if illicit discharges are found draining either into another jurisdiction or draining from another jurisdiction. During the first two years of the permit, SWMACC will document timeframes for removal of illicit discharges in accordance with permit requirements. Enforcement procedures are documented in the rules and regulations for the District. **Measurable Goals:** • Inspect major or priority outfalls for the presence of illicit discharges at least once per year. • Update maps of major outfalls on an annual basis. • Update dry weather field screening program to address new permit requirements by June 30, 2016.	

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(vi) Require spill preventative measures, and upon notification, respond to, contain and mitigate spills that may discharge into the MS4. Spills that may endanger 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.*		
2: Implement the Spill Response Program	**Responsible for Implementation:** SWMACC and DTD **Permit Year:** Ongoing **BMP Description:** The District's Spill Response Program prevents, contains, and responds to spills of dangerous, hazardous and other materials in the MS4-permitted areas of SWMACC. The District's Spill Response Program ensures that the actual or possible release of dangerous/hazardous materials to the MS4 is properly addressed. Except for minor incidents, The District's Spill Response Program personnel always coordinate closely with other agencies and departments, including Tualatin Valley Fire and Rescue, DEQ, Oregon State Police, Clackamas County's Road Department (DTD), and Oregon's Department of Transportation (ODOT). The District created a draft Standard Operating Procedure (SOP) in 1999 for addressing and responding to spills of dangerous and/or hazardous materials. This SOP was revised and finalized in 2004. The 2004 SOP provides guidance to District employees who administer the Spill Response Program. Specific guidance is provided by the SOP in the following areas: • Determining if the incident needs to be reported to Oregon Emergency Response System (OERS - see the next paragraph in this section). • Determining if a site visit needs to be performed by District personnel. If a site visit is not to be performed, guidance on providing a proper referral of the incident to another government agency is provided. • How to conduct a safe and effective site inspection as a first responder to an incident. • How to prioritize activities at the site of a release. Heavy emphasis is placed on maintaining the personal safety of all persons, including the District's Spill Response Program representative. In addition, all District responders are obligated to call for support, if warranted, from agencies which may also have jurisdiction for the incident, including DEQ and Tualatin Valley Fire & Rescue. • Protecting the environment through deployment of certain spill response tools, such as granular absorbents, absorbent booms, and pads. Guidance on obtaining the assistance of environmental services companies which specialize in spill response support is also included.	(1) Number of reported spills to the MS4 system. (2) Number and type of response to the reported spills.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
	• Documenting the release incident. • Incident follow-up activities. Certain incidents involving the release of pollutants in the State of Oregon must be promptly reported to the Oregon Emergency Response System (OERS) at 800-452-0311. Incidents that must be reported to OERS, as contained in OAR 340-108-0010(1), involve the release of materials in amounts greater than or equal to the following: • If spilled into waters of the state, or escape into waters of the state is likely, any quantity of oil (or other petroleum-based fuel or lubricant) that would produce a visible oily slick, oily solids, or coat aquatic life, habitat or property with oil, but excluding normal discharges from properly operating marine engines. • If spilled on the surface of the land, any quantity of oil over one barrel (42 gallons). • An amount equal to or greater than the quantity listed in 40 CFR Part 302-Table 302.4. This is a list of hazardous substances and their reportable quantities; see The District's 2004 SOP for this large and detailed document. • One (1) pound of pesticide residue as defined by 340-101-0033(5)(a). • Virtually any quantity of nerve agents (such as Sarin, VX, etc.). • Any quantity of radioactive material, or radioactive waste. **Measurable Goals:** • Implement the spill response program and associated protocols.	

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
3: Respond to reports involving illicit discharges	**Responsible for Implementation:** SWMACC **Permit Year:** Ongoing **BMP Description:** Reports are often received from Oregon's DEQ, Oregon's ODOT, Water Districts, Fire Districts, cities, citizens, SWMACC co-workers, DTD employees and others which allege that an illicit discharge has occurred or is occurring. When reports are received which allege that an illicit discharge has occurred or is occurring, SWMACC will attempt to confirm the allegation in a timely manner. If it can be confirmed that an illicit discharge has occurred or is occurring, District staff will cooperate with the property owner and/or business owner to evaluate, and if necessary, control the discharge. Control options that may be applied or recommended by the District include, but are not limited to: • The removal of certain pollutants from the wastewater prior to discharge to the storm sewer system (i.e. cease usage of soap when washing). • Issuance of the proper discharge permit from DEQ. A discharge that has been authorized and controlled by a DEQ water quality permit is not an illicit discharge. • Application of the wastewater to dry land with no discharge to surface waters or storm sewers. This option is inappropriate for certain types of wastewaters, discharge rates, and soil types and may require the issuance of a WPCF permit from DEQ. • Wastewater reuse without any discharge. • Hauling the wastewater off-site for proper disposal. • With the necessary permits, discharge the wastewater to appropriate sanitary sewer system. **Measurable Goals:** • Respond to reports involving alleged illicit discharges within two weeks.	(1) Number of alleged illicit discharges and non-stormwater discharges which were reported each year (2) Number of illicit discharges that were controlled.

SWMP Component #2
Industrial and Commercial Facilities

NPDES permit requirements are listed below, followed by SWMACC's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.b. **See Table 2** for SWMACC's BMPs that address the requirements listed below.

SWMP Component #2: Industrial and Commercial Facilities		
	Applicable BMP	
Schedule A.4.b Permit Requirement	4: Screen existing and New Industrial Facilities	5: Address Other Industrial Facilities
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.	■	
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.	■	
iii. Implement a program 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.		■

TABLE 2 – Industrial and Commercial Facility BMPs

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
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.*		
4: Screen Existing and New Industrial Facilities	**BMP Owner:** SWMACC **Permit Year:** Ongoing **BMP Description:** Once during the permit term, SWMACC will review their new industrial development applications to determine whether any existing or new facilities would be subject to an industrial stormwater NPDES permit. This determination will occur based on a review of the facilities proposed activities and the applicable SIC codes related to the 1200-Z NPDES permit. If a facility is identified that would be subject to an industrial stormwater NPDES permit, the facility and DEQ will be notified within 30 days. **Measurable Goals:** • Review new industrial development applications once during the permit term to identify additional facilities needing to obtain 1200-Z permits.	1) Track the number of existing or new industrial facilities subject to a stormwater industrial NPDES permit during the permit term.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(iii) Implement a program 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.*		
5: Address Other Industrial/Commerical Facilities	**Responsible for Implementation:** SWMACC **Permit Year:** Ongoing **BMP Description:** The facilities that are addressed by the District for this BMP are those that are not required to obtain a 1200Z permit, and/or are anticipated to contribute a substantial load of pollutants to the MS4. Facilities will primarily be inspected on a complaint-driven basis, but it is possible that some inspections will be conducted by the District during source tracking activities if the District's storm event monitoring work or routine monitoring work shows that excessive levels of one or more pollutants are present. All facilities that are the subject of a complaint will be inspected in a timely manner by District staff. The implementation of control measures for stormwater discharges from these facilities will be deemed necessary by the District if the presence of excess levels of stormwater pollution can be confirmed by the District. For instances where the presence of excess levels of pollution in stormwater has been confirmed by the District, and in the event that the discharger's initial attempts to improve stormwater quality do not produce the required improvement, then District personnel will continue to provide guidance and technical assistance until the facility's stormwater quality improves. The presence of excess levels of pollution in stormwater can generally be confirmed by two general methods: visual and analytical. Analytical methodologies include hand-held meters, and those performed by an environmental laboratory. The District will use visual or analytical methods at the District's discretion. In addition, the District has implemented a Storm Drain Cleaning Assistance Program. See BMP #28. **Measurable Goals:** • Notify and work with industries to improve stormwater management if an inspection is conducted that indicates improvement is needed.	(1) The number of inspections performed, and where applicable, monitoring data collected. (2) The number of letters, enforcement actions, or other contacts made.

SWMP Component #3
Construction Site Runoff Control

NPDES permit requirements are listed below, followed by SWMACC's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.c. **See Table 3** for SWMACC's BMPs that address the requirements listed below.

SWMP Component #3: Construction Site Runoff Control				
	Applicable BMPs			
Schedule A.4.c Permit Requirement	6: Conduct Procedures for Site Planning	7: Implement Requirements for Structural and Non-Structural Best Management Practices	8: Conduct Training for Construction Site Operators	9: Identify Priorities for Inspecting Sites and Conducting Enforcement Activities
i. Include ordinances or other enforceable regulatory mechanism that requires erosion and sediment controls designed, implemented, and maintained to prevent adverse impacts to water quality and minimize the transport of contaminants to waters of the State.	■	■		
ii. Require construction site operators to develop site plans and implement and maintain effective erosion and sediment control best management practices.	■	■	■	
iii. 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.	■	■	■	
iv. Establish site plan review procedures to ensure stormwater BMPs are appropriate and address the construction activities being proposed. At a minimum, construction site erosion and sediment control plans for sites disturbing one acre or greater must be developed in accordance with the State of Oregon's 1200-C permit requirements.	■	■		

SWMP Component #3: Construction Site Runoff Control				
	Applicable BMPs			
Schedule A.4.c Permit Requirement	6: Conduct Procedures for Site Planning	7: Implement Requirements for Structural and Non-Structural Best Management Practices	8: Conduct Training for Construction Site Operators	9: Identify Priorities for Inspecting Sites and Conducting Enforcement Activities
v. *Perform on-site inspections in accordance with documented procedures and criteria to ensure the approved erosion and sediment control plan is properly implemented…. Inspections must be documented, including photographs and monitoring results as appropriate.*				■
vi. *Describe in an enforcement response plan or similar document the enforcement response procedures the permittee will implement. The enforcement response procedures must use all means necessary to ensure construction activities are in compliance with the ordinances or other regulatory mechanisms.*				■

TABLE 3 – Construction Site Runoff Control BMPs

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(i) Include ordinances or other enforceable regulatory mechanism that requires erosion and sediment controls designed, implemented, and maintained to prevent adverse impacts to water quality and minimize the transport of contaminants to waters of the State.* **NPDES Permit Requirement** – *(ii) Require construction site operators to develop site plans and implement and maintain effective erosion and sediment control best management practices.* **NPDES Permit Requirement** – *(iii) 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.* **NPDES Permit Requirement** – *(iv) Establish site plan review procedures to ensure stormwater BMPs are appropriate and address the construction activities being proposed. At a minimum, construction site erosion and sediment control plans for sites disturbing one acre or greater must be developed in accordance with the State of Oregon's 1200-C permit requirements.*		
6: Conduct Procedures for Site Planning	**Responsible for Implementation:** SWMACC **Permit Year:** Ongoing **BMP Description:** The District reviews all development plans for new construction or redevelopment projects in the District's service area (disturbing sites of 800 ft^2 or greater) through the building permit process. All reviews are done in accordance with the Surface Water Management Rules and Regulations for SWMACC. These regulations require submittal of an erosion prevention and sediment control plan containing methods and/or interim facilities to be constructed or used concurrently with land development. Plan submittals are required to provide details of erosion control measures, schedules for construction, and a maintenance schedule for erosion control activities. The District also administers the 1200-C permitting program for the areas inside Clackamas County and outside the incorporated cities (with the exception of the City of Rivergrove as the District administers the program for that City). The *Erosion Prevention and Sediment Control Planning and Design Manual* is part of the EPSC requirements and is also offered as an educational resource to the development community for preparation of plans for erosion prevention and sediment control by the District. In addition to erosion prevention and sediment control, the document also includes measures related to good house-keeping and addressing non-stormwater related waste. A multi-jurisdictional team revised this manual in December 2009. **Measurable Goal:** • Review all applicable erosion and sediment control plans submitted as part of the building permit process.	(1) Annual number of permitted, active construction projects (i.e., those projects disturbing 800 s.f. or more). (2) Annual number of site plan reviews and approved plans.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
7: Implement Requirements for Structural and Non-Structural Best Management Practices	**Responsible for Implementation:** SWMACC **Permit Year:** Ongoing **BMP Description:** Structural and non-structural BMPs are required for all construction disturbing 800 s.f. of land or more by the District's erosion prevention and sediment control regulations. Erosion control plans require specific descriptions of erosion prevention measures, and implementation of control measures for any erosion identified prior to and concurrent with construction activities. Maintenance of all erosion control measures pursuant to an approved plan is the applicant's responsibility. **Measurable Goal:** • Require structural and non-structural BMPs for erosion prevention and sediment control on all construction sites disturbing 800 s.f. of land or more**.**	See tracking measures for the previous BMP #6
8: Conduct Training for Construction Site Operators	**Responsible for Implementation:** SWMACC **Permit Year:** Ongoing **BMP Description:** The District participates in educational and training measures for construction site operators. These activities include the following: • The *Erosion Prevention and Sediment Control Planning and Design Manual* was developed in coordination with multiple regional jurisdictions. It is available for contractors, citizens, or others involved with construction activities within the permit area. • The District provides information to contractors during the permit review process, including pre-construction review meetings. District staff meet with developers and contractors to discuss requirements and to visit sites to review specific requirements. • The District has initiated a voluntary certification program for erosion control through Clackamas Community College. The certification process and procedure are coordinated with other jurisdictions in Clackamas County. • The District has partnered with regional jurisdictions, the Oregon Association of General Contractors, the Homebuilders Association of Metropolitan Portland and vendors of erosion control products to create and promote the Annual Regional Erosion Prevention Awards Program. Developed to provide recognition for contractors and developers with outstanding achievements in exceeding local erosion control requirements, the program provides recipients with media recognition, peer recognition and prizes donated by vendors of erosion prevention and sediment control products and services. The annual Regional Erosion Prevention Awards Program provides the development community with	(1) Track the number and type of educational and training events the District conducts and/or participates in annually.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
	incentives to seek education regarding erosion prevention BMPs, improve BMP selection and installation, and to better monitor and maintain the BMPs used in their projects. Additional benefits of the program are to provide education for jurisdiction's inspection staff, help standardize erosion prevention requirements and reduce noncompliance with erosion control requirements. As of 2007, participants include over 28 jurisdictions in 5 counties in Oregon and southern Washington. **Measurable Goal:** • Conduct training for new employees, as applicable, and whenever there is a significant update to the Erosion Prevention and Sediment Control Planning and Design Manual.	

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(v) Perform on-site inspections in accordance with documented procedures and criteria to ensure the approved erosion 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.* **NPDES Permit Requirement** – *(vi) Describe in an enforcement response plan or similar document the enforcement response procedures the permittee will implement. The enforcement response procedures must use all means necessary to ensure construction activities are in compliance with the ordinances or other regulatory mechanisms.*		
9: Identify Priorities for Inspecting Sites and Conducting Enforcement Actions	**Responsible for Implementation:** SWMACC **Permit Year:** Ongoing **BMP Description:** The District inspects all construction project sites disturbing 800 s.f. of land or more for implementation of erosion prevention and sediment control BMPs within the District's service area. Additionally, Water Environment Services is an Agent of DEQ in the issuance and administration of NPDES 1200-C permits for developments disturbing areas one acre or larger throughout unincorporated Clackamas County and, by agreement, within the Oak Lodge Sanitary District and the cities of Gladstone and Rivergrove. District staff inspects construction sites a minimum of twice (initial and final) during construction to verify proper implementation of required BMPs. Additional monitoring inspections are performed as necessary. Priorities for monitoring inspections are based on site-specific characteristics (i.e., watershed, grade, percent of soil cover to be removed, construction practices, season, and proximity to sensitive areas.) Based on the recommendations from the WAPs, the prioritization process has been formally codified and incorporated into the inspection database. Inspection resources are allocated based on this prioritization. The District monitors compliance with the erosion prevention and sediment control regulations and has the authority to issue deficiency notices, charge re-inspection fees, issue fines and stop land-disturbing development work at the site until provisions of the regulations are met. Records of activities are maintained on file at the District. Erosion control plans are filed as well as inspection reports that describe non-compliance/enforcement actions. **Measurable Goals:** • Inspect construction sites disturbing 800 s.f. of land or more a minimum of twice during construction to verify proper implementation of required BMPs	(1) Annual number of permitted sites and percentage of sites inspected. (2) Annual number of erosion control inspections conducted. (3) Annual number of enforcement actions.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
	• Monitor compliance with the erosion control regulations for sites disturbing 800 s.f. of land or more and, when necessary, issue deficiency notices, charge re-inspection fees, issue fines and stop land-disturbing development work at the site until provisions of the regulations are met.	

SWMP Component #4
Education and Outreach

NPDES permit requirements are listed below, followed by SWMACC's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.d. **See Table 4** for SWMACC's BMPs that address the requirements listed below.

SWMP Component #4: Education and Outreach						
	Applicable BMPs					
Schedule A.4.d Permit Requirement	10: Public Education to Reduce Discharges of Pesticides, Herbicides, and Fertilizers	11: Proper Disposal to Reduce Discharges of Pesticides, Herbicides, and Fertilizers	12: Facilitate Public Reporting of Illicit Discharges, Spills, and Other Types of Improper Disposal Materials	13: Participate in a Public Education Effectiveness Evaluation	14: Training for Employees
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.	■				
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.	■		■		
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.	■	■	■		

SWMP Component #4: Education and Outreach					
Schedule A.4.d Permit Requirement	Applicable BMPs				
	10: Public Education to Reduce Discharges of Pesticides, Herbicides, and Fertilizers	11: Proper Disposal to Reduce Discharges of Pesticides, Herbicides, and Fertilizers	12: Facilitate Public Reporting of Illicit Discharges, Spills, and Other Types of Improper Disposal Materials	13: Participate in a Public Education Effectiveness Evaluation	14: Training for Employees
iv. As appropriate, provide public education on the proper operation and maintenance of privately-owned or operated stormwater quality management facilities.	See Component #8: Structural Stormwater Facility Maintenance Program BMP : Private Water Quality Facility Maintenance Program				
v. Provide notice to construction site operators concerning where education and training to meet erosion and sediment control requirements can be obtained.	See Component #3: Construction Site Runoff Control BMP: Conduct training for Construction Site Operators				
vi. 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.				■	
vii. 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.					■

SWMP Component #4: Education and Outreach					
Schedule A.4.d Permit Requirement	Applicable BMPs				
	10: Public Education to Reduce Discharges of Pesticides, Herbicides, and Fertilizers	11: Proper Disposal to Reduce Discharges of Pesticides, Herbicides, and Fertilizers	12: Facilitate Public Reporting of Illicit Discharges, Spills, and Other Types of Improper Disposal Materials	13: Participate in a Public Education Effectiveness Evaluation	14: Training for Employees
viii. 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.	■		■		

TABLE 4 – Education and Outreach BMPs

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(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.* **NPDES Permit Requirement** – *(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.* **NPDES Permit Requirement** – *(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.* **NPDES Permit Requirement** – *(viii) 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.*		
10: Public Education to Reduce Discharges of Pesticides, Herbicides and Fertilizers	**Responsible for Implementation:** SWMACC **Permit Year:** Ongoing **BMP Description:** SWMACC administers a public education program which provides information that attempts to motivate workers and residents to reduce stormwater pollution that is caused by the application of pesticides, herbicides, and fertilizers in the District. Educational information is shared with the public through the use of: • Articles in newsletters • Water Environment Services's website • Billing inserts or notices • Through local public involvement campaigns. A recent example of a relevant public involvement campaign is one that has been launched annually over the past several years throughout the Portland Metro area by many municipal partners, including the Districts. This group is called the Regional Coalition for Clean Rivers and Streams. • Brochures (disseminated at fairs, for example) Common topics that are addressed by this program include: • Less harmful alternatives to the use of pesticides, herbicides, and fertilizers are provided.	(1) Track programs messages delivered, type of communication piece, and where appropriate, the number of people affected.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
	For example, use of ladybugs to eat insect pests is encouraged as an alternative to pesticide application. • Information about the potential hazards to water quality, public health, and aquatic life associated with the misuse of pesticides, herbicides, and fertilizers in the District. • Users are reminded that pesticide and herbicide products need to be used in a manner consistent with the product's label. • Offering speaking engagements with watershed councils and neighborhood groups in order to get information about how they can become involved in SWMACC-led activities related to improving the health of their watersheds. **Measurable Goals:** • Continue to maintain relevant public education materials on the WES' website. • Conduct Watershed Action Plan to help guide District Activities • Pursue relevant USGS studies if the opportunity presents itself.	

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
11: Proper Disposal Practices to Reduce Discharges of Pesticides, Herbicides and Fertilizers	**Responsible for Implementation:** SWMACC **Permit Year:** Ongoing **BMP Description:** When the District receives inquiries from the public about the proper disposal method for empty containers that once held pesticides/herbicides or for disposal of unwanted quantities of these products, citizens are promptly forwarded to Metro's informational phone number (503-234-3000). **Measurable Goals:** • Refer all pesticide/herbicide disposal related calls to Metro.	(1) Number of calls that SWMACC receives and refers to Metro annually.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
12: Facilitate Public Reporting of Illicit Discharges and Spills and Other Types of Improper Disposal of Materials	**Responsible for Implementation:** SWMACC and Public & Government Relations **Permit Year:** Ongoing **BMP Description:** The District implements a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges and other types of improper disposal of materials into the MS4. After District staff has received a report which relates to one of these discharges, they investigate and, if appropriate, apply control measures. See BMP #3. <u>Illicit Discharges and Spills</u>**:** Through the periodic publication of articles in various WES and County newsletters, ratepayers are encouraged to promptly report illicit discharges and spills. Newsletters reach a broad group within the County. In addition, articles maybe mailed to every ratepayer in the District with their billing statements. In a recent article, ratepayers were: • provided with guidance on determining what an illicit discharge is • told to keep at a safe distance and in an upwind direction from all spills • call 911 for certain high-priority incidents After citizens become aware of an illicit discharge or spill, they can contact District staff in person, by phone, or by email. <u>Other types of improper disposal of materials:</u> Information is transmitted to the public through the District's newsletter. On a periodic basis, articles on various relevant topics (for example, proper pet waste disposal and proper yard debris management) are published. In these news letter articles and in the direct conversations with the ratepayers that contact the District for guidance, citizens are encouraged to contact Metro for guidance on the proper disposal of used oil and toxic materials. Metro provides its services throughout the Portland metropolitan area, including all portions of the District. When customers contact the District about disposal of these items, they're usually referred to Metro's hotline (503-234-3000) or encouraged to visit the nearest household hazardous waste facility located at Metro's South Transfer Station in Oregon City. **Measurable Goals:** • Include a relevant article in County newsletter once a permit term. • Continue to include area for public complaints on the WES' website and track number of complaints for reporting.	(1) Describe news articles reported per year when appropriate. (2) Describe type of public complaints received. Resulting follow up actions per year will be kept in a database.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(iv) As appropriate, provide public education on the proper operation and maintenance of privately-owned or operated stormwater quality management facilities.*		
See Component #8: Structural Stormwater Facility Operations and Maintenance **BMP:** Private Water Quality Facility Maintenance Program (Table 8)		
NPDES Permit Requirement – *(v) Provide notice to construction site operators concerning where education and training to meet erosion and sediment control requirements can be obtained.*		
See Component #3: Construction Site Runoff Control **BMP:** Conduct Training for Construction Site Operators (Table 3)		
NPDES Permit Requirement – *(vi) 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.*		
13: Participate in a Public Education Effectiveness Evaluation	**Responsible Department:** SWMACC **Permit Year:** Ongoing **BMP Description:** Over the permit term, SWMACC will provide information related to an effectiveness evaluation. This may be conducted in coordination with other local Phase 1 jurisdictions. The effectiveness evaluation information will focus on assessing changes in targeted behaviors and will allow for additional information that can be used in adaptive management of the SWMACC's education and outreach strategy. **Measurable Goal:** • Provide/compile information regarding a public education effectiveness evaluation over the permit term.	(1) Report on activities annually.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(vii) 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*		
14: Training for Employees	**Responsible Department:** SWMACC **Permit Year:** Ongoing **BMP Description:** A variety of training is provided to District staff associated with stormwater management. Training and advisory committee opportunities are made available through local agencies and groups involved with a broad range of water quality issues including stormwater (e.g., Oregon Association of Clean Water Agencies conferences). Such training is provided based on need and availability. **Measurable Goals:** • Attend relevant stormwater management related training based on need and availability. • Check-in with the Tualatin Valley Fire and Rescue regarding stormwater issues	(1)Track the number of employees receiving training in stormwater management annually.

SWMP Component #5
Public Involvement and Participation

NPDES permit requirements are listed below, followed by SWMACC's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.e. **See Table 5** for SWMACC's BMPs that address the requirements listed below.

SWMP Component #5: Public Involvement and Participation	
	Applicable BMPs
Schedule A.4.e Permit Requirement	15: Provide for Public Participation with SWMP and Benchmark Submittals
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.*	■

TABLE 5 –Public Involvement and Participation

SWMACC BMP Descriptions	BMP Implementation	Performance Measures
NPDES Permit Requirement - (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.*		
15: Provide for Public Participation with SWMP and Benchmark Submittals	**Responsible Department:** SWMACC **Permit Year:** Five **BMP Description:** Schedule A.4.e of the SWMACC's MS4 NPDES permit requires SWMACC to provide opportunity for public participation in the development, implementation, and modification of the SWMACC's Stormwater Management Plan (SWMP) and pollutant load reduction benchmark development. SWMP revisions and pollutant load reduction benchmarks are required for submittal to DEQ at the permit renewal submittal (180-days prior to permit expiration). Prior to submittal of these items, SWMACC will provide the public with an opportunity to comment on the revised draft SWMP and proposed pollutant load reduction benchmarks for a minimum of 30 days. Comments on the documents will be collected and considered and response to comments will be publically provided. **Measurable Goals:** • Provide for public participation with the SWMP and pollutant load reduction benchmarks prior to the permit renewal application deadline.	N/A

SWMP Component #6
Post-Construction Site Runoff

NPDES permit requirements are listed below, followed by SWMACC's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.f. **See Table 6** for SWMACC's BMPs that address the requirements listed below.

SWMP Component #6: Post-Construction Site Runoff			
	Applicable BMPs		
Schedule A.4.f Permit Requirement	16: Planning Procedures for New Development and Significant Redevelopment	17: Update Procedures for New Development and Redevelopment	18: BMP Sizing Tool Development to Address Hydromodification
i. *By June 30, 2011, the post-construction stormwater pollutant and runoff control program applicable to new development and redevelopment projects that create or replace 5,000X ft^2 of impervious surface must meet the following conditions :1) Incorporate site-specific management practices that target natural surface or predevelopment hydrologic functions where practicable; 2) Minimize site specific post-development stormwater runoff volume and rates of discharges to the municipal separate storm sewer system (MS4)..; 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.*	■	■	■
ii. *Co-permittees must 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.*	■	■	

SWMP Component #6: Post-Construction Site Runoff			
	Applicable BMPs		
Schedule A.4.f Permit Requirement	16: Planning Procedures for New Development and Significant Redevelopment	17: Update Procedures for New Development and Redevelopment	18: BMP Sizing Tool Development to Address Hydromodification
iii. 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 June 30, 2011 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.	■	■	■
iv. Co-permittees must review, approve and verify proper implementation of post-construction site plans for new development and redevelopment projects applicable to this section.	■	■	
v. Where a project site is characterized by factors limiting on-site stormwater capture and treatment or flow reduction… the Post-Construction Stormwater Management program must require equivalent measures, such as off-site stormwater quality management. Surface Water Management Plan. Offsite stormwater quality management may include off-site mitigation, a stormwater quality structural facility mitigation bank, or a payment-in-lieu program.	■	■	

TABLE 6 – Post-Construction Site Runoff BMPs

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(i) By June 30, 2011, the post-construction stormwater pollutant and runoff control program applicable to new development and redevelopment projects that create or replace 5,000 ft^2 of impervious surface must meet the following conditions :1) Incorporate site-specific management practices that target natural surface or predevelopment hydrologic functions where practicable; 2) Minimize site specific post-development stormwater runoff volume and rates of discharges to the municipal separate storm sewer system (MS4) to lessen 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.* **NPDES Permit Requirement –** *(ii) Co-permittees must 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. The co-permittees must minimize the applicable code and development standard barriers if a co-permittee identifies that the elimination of a code and development standard barrier conflicts with public and environmental health and safety standards. 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.* **NPDES Permit Requirement –** *(iii) 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 June 30, 2011 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.* **NPDES Permit Requirement –** *(iv) Co-permittees must review, approve and verify proper implementation of post-construction site plans for new development and redevelopment projects applicable to this section.* **NPDES Permit Requirement –** *(v) Where a project site is characterized by factors limiting on-site stormwater capture and treatment or flow reduction… 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, a stormwater quality structural facility mitigation bank or a payment-in-lieu program.*		
16: Planning Procedures for New Development and Significant Redevelopment	**Responsible for Implementation:** SWMACC **Permit Year:** Ongoing **BMP Description:** This BMP covers the planning procedures for developing, implementing, and enforcing controls to reduce the discharge of pollutants from storm sewers collecting runoff from areas of significant development or redevelopment. These controls include county-funded capital improvement projects to provide new stormwater treatment facilities in previously developed areas and regulations requiring such facilities with all new land development or redevelopment projects. For residential subdivisions and partitions of parcels with the potential to create more than two additional	(1) The number and type of flow control, water quality treatment or infiltration facilities installed in accordance with the requirements.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
	lots as currently zoned, and for developments having more than 5,000 square feet of impervious surface, on-site stormwater flow control, water quality treatment, and infiltration facilities are required. For 2 and 3 lot partitions that cannot be further partitioned under current zoning, flow control is not required if there are no downstream impacts. All subdivisions and partitions must include a storm water management plan. Infiltration facilities are required where soil conditions permit. With respect to maintenance of the private facilities that are constructed, the following applies: *Private Residential Storm System Maintenance (e.g. subdivisions)* Properties with private storm systems for new residential developments are required as part of the development approval process to inspect and maintain their storm systems themselves (e.g. through a Homeowners Association) or to sign an agreement that they will have the District staff maintain their systems on their behalf in exchange for a monthly on-site management fee. *Private Non-Residential Storm System Maintenance (e.g. commercial, industrial, etc)* Private storm systems for new non-residential development and redevelopment are required as part of the development approval process to sign an agreement to inspect, maintain and, if needed, clean their storm systems annually. Further, they must report on these activities to the District annually. The District is compiling a database of these private facilities to allow for tracking of compliance with the terms of the agreements. In addition, the District has implemented a Storm Drain Cleaning Assistance Program. See BMP #28. Maps are updated to include the location, type and drainage area of new facilities resulting from SWMACC's post-construction standards. **Measurable Goals:** • Continue to implement and enforce controls for stormwater quality treatment from new and re-development. • Track the location, type, and drainage area of new water quality facilities using GIS. • Continue with work to compile a database of private facilities. • Annually, check in on compliance with terms of private facility maintenance agreements.	(2) Narrative to describe the status of the private facility database. (3) Narrative to describe results of tracking compliance with private facility maintenance agreements.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
17: Update Procedures for New Development and Significant Redevelopment	**Responsible for Implementation:** SWMACC **Permit Year:** 2012 **BMP Description:** SWMACC is currently developing a Watershed Action Plan (WAP) that is projected to be completed in 2011. The WAP will identify high priority areas based on a watershed assessment, set and focus maintenance responsibilities and priorities, and develop performance metrics to assess overall effectiveness. If one of the recommendations from the WAP is to revise and update the District's stormwater standards for new and re-development, a public process and schedule shall to do so will be created and implemented accordingly. **Measurable Goals:** • Complete WAP June 30, 2011. • If WAP recommends revisions to standards, create and implement a process to do so by June 30, 2012.	(1) Track Status WAP
18: BMP Sizing Tool Development to Address Hydromodification	**Responsible for Implementation:** SWMACC **Permit Year:** Ongoing. **BMP Description:** A simplified tool for development engineers to easily size LID BMPs to address the duration of elevated flow levels in addition to addressing flow volumes and peaks is currently being designed by CCSD#1. If the SWMACC WAP recommends adoption of this tool, a public process and schedule to do so will be created and implemented accordingly. **Measurable Goal:** • Complete WAP June 30, 2011. • If WAP recommends use of a hydromodification tool, create and implement a process to do so by June 30, 2012.	(1) Track Status WAP

SWMP Component #7
Pollution Prevention for Municipal Operations

NPDES permit requirements are listed below, followed by SWMACC's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.g. **See Table 7** for SWMACC's BMPs that address the requirements listed below.

SWMP Component #7: Pollution Prevention for Municipal Operations							
	Applicable BMPs						
Schedule A.4.g Permit Requirement	19: Street Sweeping	20: Operations and Maintenance for Public Streets	21: Proper Road Maintenance to Reduce the Discharge of Pesticides, Herbicides, and Fertilizer	22: Landscape Maintenance Practices to Reduce the Discharge of Pesticides, Herbicides, and Fertilizer	23: Control Infiltration and Cross Connections to the SWMACC's Stormwater System	24: Flood Management Projects and Water Quality	25: Detention Pond Retrofit Program
i. Operate and maintain public streets, roads and highways for 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;	■	■					
ii. Implement a management program to control the use and application of pesticides, herbicides and fertilizers on municipally-owned properties;			■	■			
iii. 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;							

SWMP Component #7: Pollution Prevention for Municipal Operations							
	Applicable BMPs						
Schedule A.4.g Permit Requirement	19: Street Sweeping	20: Operations and Maintenance for Public Streets	21: Proper Road Maintenance to Reduce the Discharge of Pesticides, Herbicides, and Fertilizer	22: Landscape Maintenance Practices to Reduce the Discharge of Pesticides, Herbicides, and Fertilizer	23: Control Infiltration and Cross Connections to the SWMACC's Stormwater System	24: Flood Management Projects and Water Quality	25: Detention Pond Retrofit Program
iv. *Implement controls to limit infiltration of seepage from the municipal sanitary sewer system to the MS4 where necessary;*					■		
v. *Implement a program to control the release of materials related to fire-fighting training activities; and,*	See BMP #14: Employee Training						
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;*						■	■

TABLE 7 – Pollution Prevention for Municipal Operations BMPs

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(i) Operate and maintain public streets, roads and highways for 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;*		
19: Street Sweeping	**Responsibility for Implementation:** DTD Roads **Permit Year:** Ongoing **BMP Description:** Major arterial curbed streets within the DTD service area (which includes SWMACC) are swept on a regular basis by DTD. The frequency varies depending on a variety of factors (for example, traffic volumes). For information on their street sweeping activities, refer to the DTD MS4 NPDES SWMP. **Measurable Goal:** • See DTD's MS4 NPDES SWMP.	See DTD's MS4 NPDES SWMP
20: Operations & Maintenance for Public Streets	**Responsibility for Implementation:** DTD Roads **Permit Year:** Ongoing **BMP Description:** Operations and maintenance of public streets within the DTD service area (which includes SWMACC) is the responsibility of DTD. For information on their activities, refer to the DTD MS4 NPDES SWMP. **Measurable Goal:** • See DTD's MS4 NPDES SWMP.	See DTD's MS4 NPDES SWMP.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(ii) Implement a management program to control the use and application of pesticides, herbicides and fertilizers on municipally-owned properties;*		
21: Proper Road Maintenance Practices to Reduce the Discharge of Pesticides, Herbicides and Fertilizers	**Responsible for Implementation:** DTD roads **Permit Year:** Ongoing **BMP Description:** Proper road maintenance practices to reduce the discharge of pesticides, herbicides, and fertilizers within the DTD service area (which includes SWMACC) is the responsibility of DTD. For information on their activities, refer to the DTD NPDES SWMP. **Measurable Goal:** • See DTD's MS4 NPDES SWMP.	See DTD's MS4 NPDES SWMP.
22: Landscape Maintenance Practices to Reduce the Discharge of Pesticides, Herbicides and Fertilizers	**Responsible for Implementation:** SWMACC and DTD **Permit Year:** See the measurable goals portion of this BMP. **BMP Description:** Herbicides, pesticides and fertilizers used by Clackamas County in landscape maintenance applications around County-owned buildings, facilities and lands. When herbicides and pesticides are used, these products are used in a manner consistent with the product's label. During the previous permit term (2004 – 2009), the County conducted the following tasks in an attempt to reduce the discharge of pollutants associated with landscape maintenance activities: • Assembled a list of all County and City of Rivergrove's buildings, facilities and lands in the District's MS4 permit area. • Met with the proper County and City's facilities and building maintenance personnel to inform them that herbicides, pesticides and fertilizers must be used with care in landscape maintenance applications around County and City-owned buildings and facilities in the District. These personnel were encouraged to: a) substitute the use of these products for other, less harmful ones, b) use less herbicide, pesticide and fertilizer, if possible, when they are used, and c) naturescape with native plants, which are likely to need less herbicides, pesticides and fertilizers, whenever possible. For this permit term, this BMP will include: • Going back to these personnel to check in on progress and to continue to encourage activities which reduce landscape maintenance related discharges of pesticides/herbicides/fertilizers. Please note that lands and buildings which have been leased by Clackamas County (i.e. the library at Clackamas Town	(1) The number of meetings conducted. (2) The results and follow-up activities conducted as a result of the meetings.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
	Center) are not included in this BMP, for lease terms do not, or tend to not, provide the SWMACC with the authority to make landscaping decisions. • Assembling a list of lands in SWMACC's MS4 permit area that are not owned by Clackamas County, The City of Rivergrove or SWMACC, but are owned by other local governments. These local governments have their own board of directors. These local governmental agencies, which include but aren't limited to Tigard-Tualatin School District, Tualatin Valley Fire and Rescue and Rivergrove Water District are not MS4 permit holders. After this list has been assembled, we will meet with each local government during this permit term to request that they consider taking the same steps that County and City employees were asked to take (i.e. use less toxic herbicides if herbicides must be used). **Measurable Goal:** • Check back in with all City and County buildings, facilities and lands that were visited (during the last permit cycle) at least once during this permit cycle.	
NPDES Permit Requirement – *(iii) 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;*		
A BMP is not needed to address this requirement as catch basin cleanings are taken to and temporarily stored at a decant facility.		

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(iv) Implement controls to limit infiltration of seepage from the municipal sanitary sewer system to the MS4 where necessary*		
23: Control Infiltration and Cross Connections to the District's Stormwater System	**Responsible for Implementation:** SWMACC **Permit Year:** Ongoing **BMP Description:** There are no District-owned sanitary sewers in SWMACC. Municipal sanitary sewers within SWMACC's MS4-permitted area are owned by the City of Lake Oswego, which serves a portion of City of Rivergrove. The District prohibits cross-connections in new/redevelopments through the development and building permit review and issuance process. This system, which features plan review in the office and inspections by certified plumbing inspectors, ensures that fixtures which need to be plumbed into a private septic system are actually plumbed into those systems, preventing illicit discharges. The District is able to identify and control the exfiltration of flows from municipal sanitary sewers systems when it occurs by: • Performing dry-weather inspections at all major or priority outfalls on an annual basis to detect non-stormwater flows, and • Receiving and promptly responding to reports from citizens of unusual colors, odors and solids. **Measurable Goal:** • Identify and eliminate any identified sanitary discharges to the storm system.	(1) Number of cross-connections/sanitary discharges identified. (2) The number and type of inspections performed, abatement actions and enforcement actions taken.
NPDES Permit Requirement – *(v) Implement a program to control the release of materials related to fire-fighting training activities;*		
This requirement is addressed under BMP #14.		
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;*		

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
24: Flood Management Projects and Water Quality	**Responsible for Implementation:** SWMACC **Permit Year:** 2012 **BMP Description:** SWMACC is currently developing a Watershed Action Plan (WAP) that is projected to be completed in 2011. The WAP will identify high priority areas based on a watershed assessment, set and focus maintenance responsibilities and priorities, and develop performance metrics to assess overall effectiveness. If one of the recommendations from the WAP is to revise and update the District's stormwater standards for new and re-development, a public process and schedule shall to do so will be created and implemented accordingly. **Measurable Goals:** • Complete WAP June 30, 2011. • If WAP recommends revisions to standards, create and implement a process to do so by June 30,	(1) Track Status of Watershed Action Planning efforts.
25: Detention Pond Retrofit Program	**Responsible for Implementation:** SWMACC **Permit Year:** 2012 **BMP Description:** SWMACC is currently developing a Watershed Action Plan (WAP) that is projected to be completed in 2011. The WAP will identify high priority areas based on a watershed assessment, set and focus maintenance responsibilities and priorities, and develop performance metrics to assess overall effectiveness. If one of the recommendations from the WAP is to revise and update the District's stormwater standards for new and re-development, a public process and schedule shall to do so will be created and implemented accordingly. **Measurable Goals:** • Complete WAP June 30, 2011. • If WAP recommends revisions to standards, create and implement a process to do so by June 30, 2012.	(1)Track Status of Watershed Action Planning efforts.

SWMP Component #8
Structural Stormwater Facility Operations and Maintenance

NPDES permit requirements are listed below, followed by SWMACC's relevant BMPs that address the permit requirement. In some cases, language for the listed permit requirements has been condensed. Applicable provisions are outlined under Schedule A.4.h. **See Table 8** for SWMACC's BMPs that address the requirements listed below.

SWMP Component #8: Structural Stormwater Facility Operations and Maintenance				
	Applicable BMPs			
Schedule A.4.h Permit Requirement	26: Maintenance of Conveyance System Components and Structural Controls	27: Conduct Catch basin Cleaning and Maintenance	28: Storm Drain Cleaning Assistance Program	29: Private Water quality Facility Maintenance Program
i. Co-permittees must implement a program by June 30, 2016 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.	■	■		■
ii. As part of the Stormwater Structural Facilities and Controls Inspection and Maintenance program, co-permittees must develop and implement a plan or approach by June 30, 2016 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: *1. 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* *2. 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.*	■		■	■

TABLE 8 – Structural Stormwater Facilities Operations and Maintenance BMPs

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(i) Co-permittees must implement a program by June 30, 2016 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.* **NPDES Permit Requirement –** *(ii) As part of the Stormwater Structural Facilities and Controls Inspection and Maintenance program, co-permittees must develop and implement a plan or approach by June 30, 2016 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:* 1) *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* 2) *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.*		

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
26: Maintenance of Conveyance System Components and Structural Controls	**Responsibility for Implementation:** SWMACC Maintenance Staff **Permit Year:** Ongoing **BMP Description:** The District maintains conveyance and treatment components of the storm water system that are located outside the rights-of-way of publicly owned roads in maintenance agreement subdivisions or that are owned by the District. The conveyance components include, but are not limited to, culverts, storm sewer lines (8" or greater in diameter) and inlets. The stormwater treatment components of the system include, but are not limited to, vegetated aboveground stormwater detention facilities, sedimentation manholes, and various types of underground proprietary pollution control systems. Maintenance records are kept by both DTD and the District. The District and DTD are working on the development of an intergovernmental agreement to clarify and coordinate maintenance activities. The District currently utilizes Clackamas County Correction crews for maintenance of stormwater detention/water quality ponds. **Note:** SWMACC is currently developing a Watershed Action Plan (WAP) that is projected to be completed in 2011. The WAP will identify high priority areas based on a watershed assessment, set and focus maintenance responsibilities and priorities, and develop performance metrics to assess overall effectiveness. The WAP outcomes may result in new or revised Measurable Goals related to frequency and prioritization of maintenance activities in SWMACC. **Measurable Goals (**The following measurable goals apply to the storm system for which SWMACC has responsibility as described above.): • Clean storm lines and ditches on an as-needed basis. • Maintain structural water quality facilities on a 3-year cycle.	(1) Miles of ditches and storm lines maintained (2) Number and type of components inspected and/or cleaned, and (3) Mass or volume of material removed during cleaning

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
27: Conduct Catch Basin Cleaning and Maintenance	**BMP Owner:** SWMACC **Permit Year:** Ongoing **BMP Description:** SWMACC cleans all District owned or District operated/maintained catch basins once every two years, cleaning approximately 50% of the catch basins each year. Catch basin cleaning activities primarily occur during the dry weather season, but during the fall, certain catch basins may be cleaned more frequently if needed. Utility crews utilize a database to document inspection and maintenance activities for the annual reports. Repair or replacement of public catch basins is scheduled following inspection. **Measurable Goals:** • Clean 50% of District owned or District operated/maintained catch basins each year. • Schedule repair or replacement of catch basins based on inspection results.	(1) Track the percent of total District owned or District operated/maintained catch basins cleaned per year. (2) Track the volume of debris removed during cleaning activities.
28: Storm Drain Cleaning Assistance Program	**BMP Owner:** SWMACC **Permit Year:** Ongoing **BMP Description:** Storm Drain Cleaning Assistance Program Industrial, commercial, and multi-family residential subdivisions have signed stormwater facility maintenance agreements with the District that obligate the signee to inspect and maintain their stormwater facilities and to report on their activities annually to the District. To assist commercial and industrial facilities with maintaining their devices and reporting on their activities, the district implemented a Stormdrain Cleaning Assistance Program which consists of the following Components: • Obtaining the lowest price quote from vendors for the cleaning of stormwater devices. • Send notification to agreement holders as well as other commercial and industrial facilities of their obligation to maintain their devices and to report on their activities. The notification also includes an invitation to participate in a program to have their stormwater devices inspected and cleaned for a low price. • Providing a list of businesses that wish to have their stormwater devices cleaned to the vendor. • Tracking the number of annual reports submitted. • Obtaining a summary from the vendor, the number of facilities visited as well as the number and types of structures maintained.	(1) Number of agreement holders compared with the number of annual reports received and the number devices being serviced by the vendor. (2) Total number of businesses serviced by the vendor with total number of devices maintained and volume of debris removed.

SWMACC BMP Descriptions	BMP Implementation	Tracking Measures
	Measurable Goals: • Continue to provide assistance to commercial and industrial facilities to support their water quality facility maintenance.	
29: Private Water Quality Facility Maintenance Program	**BMP Owner:** SWMACC **Permit Year:** Ongoing **BMP Description:** This BMP includes maintenance agreements for stormwater quality and detention structures in residential areas. Since approximately 1996, developers of nearly all newly constructed single-family residential subdivisions have elected to voluntarily sign an agreement that requires, for a monthly fee, District staff to maintain, clean and/or repair their privately owned stormwater quality and/or detention infrastructure. This infrastructure varies from subdivision to subdivision, but may include two or more of the following: catch basins, below-ground stormwater detention tanks, above-ground stormwater detention and/or water quality ponds, below-ground vortex separators, and swales. On a periodic basis, pollution is removed from these structures and properly disposed of. **Measurable Goals:** • Inspect 70% of our maintenance agreement sub-divisions annually. • Cleaning and repair schedules will be developed based on inspection outcomes. • All non-maintenance agreement cleaning and repairs will be request or service driven. • Emergency driven cleaning and maintenance will be addressed within 24 hours of the call being received. • All non-emergency requests for service will be addressed within 72 hours of the call received.	(1) Number of structures inspected and cleaned.