

**MS4 NPDES Permit
Stormwater Management Plan
for
Clackamas County Service District No. 1
and the City of Happy Valley**

September 21, 2010



SWMP Overview

Component #1 Illicit Discharge Detection and Elimination

- 1: Conduct Dry Weather Inspections
- 2: Implement the Spill Response Program
- 3: Respond to Reports Involving Illicit Discharges

Component #2 Industrial and Commercial Facilities
--

- 4: Screen Existing and New Industrial Facilities
- 5: Address Other Industrial Facilities

Component #3 Construction Site Runoff
--

- 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 Actions

Component #4 Education and Outreach
--

- 10: Public Education to Reduce Discharges of Pesticides, Herbicides and Fertilizers
- 11: Proper Disposal Practices to Reduce Discharges of Pesticides, Herbicides and Fertilizers
- 12: Facilitate Public Reporting of Illicit Discharges and Spills and Other Types of Improper Disposal of Materials
- 13: Participate in a Public Education Effectiveness Evaluation
- 14: Training for Employees

Component #5 Public Involvement and Participation
--

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

Component #6 Post-Construction Site Runoff

- 16: Planning Procedures for New Development and Significant Redevelopment
- 17: Updated Procedures for New Development and Significant Redevelopment
- 18: BMP Sizing Tool Development to address Hydromodification

Component #7
Pollution Prevention for Municipal Operations BMPs

- 19: Street Sweeping
- 20: Operations & Maintenance for Public Streets
- 21: Proper Road Maintenance Practices to Reduce the Discharge of Pesticides, Herbicides and Fertilizers
- 22: Landscape Maintenance Practices to Reduce the Discharge of Pesticides, Herbicides and Fertilizers
- 23: Control Infiltration and Cross Connections to the District's Stormwater System
- 24: Flood Management Projects and Water Quality
- 25: Detention Pond Retrofit Program

Component #8
Structural Stormwater Facility Operations and Maintenance

- 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

- Component #1: Illicit Discharge Detection and Elimination
- Component #2: Industrial and Commercial Facilities
- Component #3: Construction Site Runoff
- Component #4: Education and Outreach
- Component #5: Public Involvement and Participation
- Component #6: Post-Construction Site Runoff
- Component #7: Pollution Prevention for Municipal Operations BMPs
- 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 CCSD #1' 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 District's MS4 NPDES Permit. See **Table 1** for CCSD #1' BMPs that address the permit requirements that are listed below.

SWMP Component #1: Illicit Discharge Detection and Elimination			
Schedule A.4.a Permit Requirement	Applicable BMPs		
	1: Conduct Dry Weather Inspections	2: Implement the Spill Response Program	3: Respond to Reports of Illicit Discharges
i. <i>Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the permittee's MS4.</i>	■		
ii. <i>Describe enforcement response procedures.</i>	■		
iii. <i>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 30, 2011.</i>	■		
iv. <i>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.</i>	■		
v. <i>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.</i>	■		■

SWMP Component #1: Illicit Discharge Detection and Elimination

	Applicable BMPs		
	1: Conduct Dry Weather Inspections	2: Implement the Spill Response Program	3: Respond to Reports of Illicit Discharges
Schedule A.4.a Permit Requirement			
vi. <i>Require spill preventative measures, and upon notification, respond to, contain and mitigate spills that may discharge into the MS4....</i>		■	■
vii. <i>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.</i>	■		
viii. <i>Maintain a system for documenting and procedures for responding to known or suspected illicit discharges or public complaints relating to illicit discharges.</i>	■		■
ix. <i>In the case of a known illicit discharge that originates within the District's permitted area and that discharges directly to a storm sewer system or property under the jurisdiction of another municipality, the City must notify the affected municipality as soon as practicable, but no longer than one working day.</i>	■		
x. <i>In the case of a known illicit discharge that is identified within the District's permitted area, but is determined to originate from a contributing storm sewer system or property under the jurisdiction of another municipality, the City must notify the contributing municipality or municipality with jurisdiction as soon as practicable, but no longer than one working day.</i>	■		
xi. <i>Maintain maps identifying major MS4 outfalls discharging to waters of the State. The dry-weather screening locations must be uniquely identified.</i>	■		
xii. <i>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.</i>	■		

TABLE 1 – Illicit Discharge Detection and Elimination BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>NPDES Permit Requirement – (i) Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the permittee’s MS4.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>NPDES Permit Requirement – (ix) In the case of a known illicit discharge that originates within the District’s permitted area and that discharges directly to a storm sewer system or property under the jurisdiction of another municipality, the City must notify the affected municipality as soon as practicable, but no longer than one working day.</p> <p>NPDES Permit Requirement – (x) In the case of a known illicit discharge that is identified within the District’s permitted area, but is determined to originate from a contributing storm sewer system or property under the jurisdiction of another municipality, the City must notify the contributing municipality or municipality with jurisdiction as soon as practicable, but no longer than one working day.</p> <p>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.</p>	

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (xii) <i>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.</i></p>		
<p>1: Conduct Dry Weather Inspections</p>	<p>Responsible for Implementation: CCSD #1 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.</p> <p>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:</p> <ul style="list-style-type: none"> • 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. <p>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</p>	<ol style="list-style-type: none"> (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.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>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:</p> <ul style="list-style-type: none"> • 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. <p>See BMP #12 for a description of how CCSD #1 facilitates public reporting of illicit discharges.</p> <p>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 NorthCCSD #1t 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.</p> <p>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:</p> <ul style="list-style-type: none"> • 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 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. • With the necessary permits, discharge the wastewater to CCSD#1's sanitary sewer system. 	

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>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, CCSD #1 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.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • 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. 	

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (vi) <i>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.</i></p>		
<p>2: Implement the Spill Response Program</p>	<p>Responsible for Implementation: CCSD #1 and DTD</p> <p>Permit Year: Ongoing</p> <p>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 CCSD#1. 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 Clackamas County Fire District No. 1 (and for certain incidents involving hazardous materials, the Gresham HazMat Team), DEQ, Oregon State Police, Clackamas County’s Road Department (DTD), and Oregon’s Department of Transportation.</p> <p>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:</p> <ul style="list-style-type: none"> • 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 Clackamas Fire District No. 1. • 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. • Documenting the release incident. • Incident follow-up activities. 	<p>(1) Number of reported spills to the MS4 system.</p> <p>(2) Number and type of response to the reported spills.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>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:</p> <ul style="list-style-type: none"> • 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. <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Implement the spill response program and associated protocols. 	

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>3: Respond to reports involving illicit discharges</p>	<p>Responsible for Implementation: CCSD #1</p> <p>Permit Year: Ongoing</p> <p>BMP Description: Reports are often received from Oregon’s DEQ, Oregon’s ODOT, Water Districts, Fire Districts, cities, citizens, CCSD #1 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, CCSD #1 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:</p> <ul style="list-style-type: none"> • 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 CCSD#1’s sanitary sewer system. <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Respond to reports involving alleged illicit discharges within two weeks. 	<p>(1) Number of alleged illicit discharges and non-stormwater discharges which were reported each year</p> <p>(2) Number of illicit discharges that were controlled.</p>

SWMP Component #2 Industrial and Commercial Facilities

NPDES permit requirements are listed below, followed by CCSD #1' 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 CCSD #1' BMPs that address the requirements that are listed below.

SWMP Component #2: Industrial and Commercial Facilities		
	Applicable BMP	
	4: Screen existing and New Industrial Facilities	5: Address Other Industrial Facilities
Schedule A.4.b Permit Requirement		
<i>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.</i>	■	
<i>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.</i>	■	
<i>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.</i>		■

TABLE 2 – Industrial and Commercial Facility BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>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.</p> <p>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.</p>		
<p>4: Screen Existing and New Industrial Facilities</p>	<p>BMP Owner: CCSD #1 Permit Year: Ongoing BMP Description: Once during the permit term, CCSD #1 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-series 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:</p> <ul style="list-style-type: none"> Review new industrial development applications once during the permit term to identify additional facilities needing to obtain 1200-Z permits. 	<p>1) Track the number of existing or new industrial facilities subject to a stormwater industrial NPDES permit during the permit term.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (iii) <i>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.</i></p>		
<p>5: Address Other Industrial Facilities</p>	<p>Responsible for Implementation: CCSD #1</p> <p>Permit Year: Ongoing</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Industrial users permitted under the pretreatment program 40CFR403 have an annual facility inspection which includes a review of storm water facilities. As of 2010, this includes 29 industries.</p> <p>In addition, the District has implemented a Storm Drain Cleaning Assistance Program. See BMP #28.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Notify and work with industries to improve stormwater management if an inspection is conducted that indicates improvement is needed. 	<p>(1) The number of inspections performed, and where applicable, monitoring data collected.</p> <p>(2) The number of letters, enforcement actions, or other contacts made.</p> <p>(3) Number of pretreatment inspections performed.</p>

SWMP Component #3 Construction Site Runoff Control

NPDES permit requirements are listed below, followed by CCSD #1' 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 CCSD #1' BMPs that address the requirements that are listed below.

SWMP Component #3: Construction Site Runoff Control				
Schedule A.4.c Permit Requirement	Applicable BMPs			
	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. <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.</i>	■	■		
ii. <i>Require construction site operators to develop site plans and implement and maintain effective erosion and sediment control best management practices.</i>	■	■	■	
iii. <i>Require construction site operators to prevent or control non-stormwater waste that may cause adverse impacts to water quality such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste.</i>	■	■	■	
iv. <i>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.</i>	■	■		

SWMP Component #3: Construction Site Runoff Control

Schedule A.4.c Permit Requirement	Applicable BMPs			
	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. <i>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.</i>				■
vi. <i>Describe in an enforcement response plan or similar document the enforcement response procedures the permittee will implement. The enforcement response procedures must use all means necessary to ensure construction activities are in compliance with the ordinances or other regulatory mechanisms.</i>				■

TABLE 3 – Construction Site Runoff Control BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>NPDES Permit Requirement – (i) <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.</i></p> <p>NPDES Permit Requirement – (ii) <i>Require construction site operators to develop site plans and implement and maintain effective erosion and sediment control best management practices.</i></p> <p>NPDES Permit Requirement – (iii) <i>Require construction site operators to prevent or control non-stormwater waste that may cause adverse impacts to water quality such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste.</i></p> <p>NPDES Permit Requirement – (iv) <i>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.</i></p>	

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>6: Conduct Procedures for Site Planning</p>	<p>Responsible for Implementation: CCSD #1 and Happy Valley</p> <p>Permit Year: Ongoing</p> <p>BMP Description:</p> <p><i>CCSD#1 Service Area Development Review</i></p> <p>The District reviews all development plans for new construction or redevelopment projects in the District’s service area (disturbing sites of 800 ft² or greater) through the building permit process. All reviews are conducted in accordance with the Surface Water Management Rules and Regulations for CCSD#1. 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.</p> <p>The District also administers the 1200-C permitting program for the areas inside Clackamas County and outside the incorporated cities (with the exception of Gladstone as the District administers the program for that City).</p> <p><i>City of Happy Valley Service Area Development Review</i></p> <p>The City of Happy Valley reviews all development plans for new construction or redevelopment projects in the District’s service area, through the land use and building permit processes. The pertinent regulations are in Sections 8 and 15 of the Happy Valley Municipal Code. These regulations require submittal of an erosion prevention and sediment control plan, which contains 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. 1200-C permits in the City of Happy Valley are administered by DEQ.</p> <p>The <i>Erosion Prevention and Sediment Control Planning and Design Manual</i> 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 both the City of Happy Valley and 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.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> Review all applicable erosion and sediment control plans submitted as part of the building permit 	<p>(1) Annual number of permitted, active construction projects (i.e., those projects disturbing 800 s.f. or more).</p> <p>(2) Annual number of site plan reviews and approved plans.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	process.	
<p>7: Implement Requirements for Structural and Non-Structural Best Management Practices</p>	<p>Responsible for Implementation: CCSD #1 and Happy Valley</p> <p>Permit Year: Ongoing</p> <p>BMP Description:</p> <p><i>CCSD#1 Service Area</i></p> <p>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.</p> <p><i>City of Happy Valley Service Area</i></p> <p>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 control 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.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • District: Require structural and non-structural BMPs for erosion prevention and sediment control on all construction sites disturbing 800 s.f. of land or more. • City of Happy Valley: Require structural and non-structural BMPs for erosion prevention and sediment control on all construction sites disturbing 800 s.f. of land or more. 	<p>See tracking measure for the previous BMP.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>8: Conduct Training for Construction Site Operators</p>	<p>Responsible for Implementation: CCSD #1 and Happy Valley</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The District and the City of Happy Valley participate in the same activities regarding educational and training measures for construction site operators. These activities include the following:</p> <ul style="list-style-type: none"> • The <i>Erosion Prevention and Sediment Control Planning and Design Manual</i> 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 and the City provide information to contractors during the permit review process, including pre-construction review meetings. District and City staff meet with developers and contractors to discuss requirements and to visit sites to review specific requirements. • The District and the City have 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 and the City have 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 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. From 2007–2008 participants included over 28 jurisdictions in 5 counties in Oregon and southern Washington. <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Conduct training for new employees as appropriate and whenever there is a significant update to the <i>Erosion Prevention and Sediment Control Planning and Design Manual</i>. 	<p>(1) Track the number and type of educational and training events the District conducts and/or participates in annually.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (v) <i>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.</i></p> <p>NPDES Permit Requirement – (vi) <i>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.</i></p>		
<p>9: Identify Priorities for Inspecting Sites and Conducting Enforcement Actions</p>	<p>Responsible for Implementation: CCSD #1 and Happy Valley</p> <p>Permit Year: Ongoing</p> <p>BMP Description: <i>CCSD#1 Service Area</i></p> <p>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.</p> <p>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 inspection resources are allocated based on priority.</p> <p>Note: CCSD #1 Asset management and stormwater staff have developed a protocol for identifying high priority erosion control sites based on a number of criteria related to: site location, stage of development; and adjacency to sensitive features and other factors. A preliminary ranking scheme was developed and several CCSD #1 staff were trained on the protocol and sent out into the field to perform an initial ranking of all existing erosion control sites. These data have been collected and compiled in the District’s Permits database. This database will be used to refine the ranking process and track all future erosion control inspections. The prioritization ranking scheme and inspection records will be used to allocate future erosion</p>	<ol style="list-style-type: none"> (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.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>control resources based on priority.</p> <p>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.</p> <p>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.</p> <p><i>City of Happy Valley Service Area</i></p> <p>The City 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. The DEQ issues and administers NPDES 1200-C permits for developments disturbing areas one acre or larger inside the city limits. City staff inspects construction sites a minimum of twice during construction to verify proper implementation of required BMPs. Additional inspections are performed as necessary.</p> <p>The City monitors compliance with the erosion 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.</p> <p>Records of activities are maintained on file at the Happy Valley City Hall. Erosion control plans are filed as well as inspection reports that describe non-compliance/enforcement actions.</p> <p>Enforcement procedures are documented in the District’s rules and regulations.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • District: Inspect construction sites disturbing 800 s.f. of land or more a minimum of twice during construction to verify proper implementation of required BMPs. • District: 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. • Happy Valley: Inspect construction sites disturbing 800 s.f. of land or more a minimum of twice during construction to verify proper implementation of required BMPs. • Happy Valley: Monitor compliance with the erosion control regulations for sites disturbing 800 s.f. 	

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	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 CCSD #1' 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 CCSD #1' BMPs that address the requirements that are listed below.

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
i. <i>Continue to implement a documented public education and outreach strategy that promotes pollutant source control and a reduction of pollutants in stormwater discharges....The public education and outreach strategy may incorporate cooperative efforts with other MS4 regulated permittees or efforts by other groups or organizations provided a mechanism is developed and implemented to track the public education and outreach efforts within the MS4 regulated area and the results of such efforts are reported annually.</i>	■				
ii. <i>Provide educational materials to the community or conduct equivalent outreach activities describing the impacts of stormwater discharges on water bodies and the steps or actions the public can take to reduce pollutants in stormwater runoff.</i>	■		■		
iii. <i>Provide public education on the proper use and disposal of pesticides, herbicides, fertilizers and other household chemicals if identified as a concern by the co-permittees.</i>	■	■	■		

SWMP Component #4: Education and Outreach

Schedule A.4.d Permit Requirement	Applicable BMPs				
	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. <i>As appropriate, provide public education on the proper operation and maintenance of privately-owned or operated stormwater quality management facilities.</i>	See Component #8: Structural Stormwater Facility Maintenance Program BMP : Private Water Quality Facility Maintenance Program				
v. <i>Provide notice to construction site operators concerning where education and training to meet erosion and sediment control requirements can be obtained.</i>	See Component #3: Construction Site Runoff Control BMP: Conduct training for Construction Site Operators				
vi. <i>Conduct or participate in an effectiveness evaluation to measure the success of public education activities during the term of this permit. The effectiveness evaluation must focus on assessing changes in targeted behaviors. The results of the effectiveness evaluation must be used in the adaptive management of the education and outreach program.</i>				■	
vii. <i>Include training for municipal employees involved in MS4-related activities, as appropriate. The training should include stormwater pollution prevention and reduction from municipal operations, including, but not limited to, parks and open space maintenance, fleet and building maintenance, new municipal facility construction and related land disturbances, design and construction of street and storm drain systems, discharges from non-emergency fire fighting-related training activities, and stormwater system maintenance.</i>					■

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. <i>Promote, publicize and facilitate public reporting of illicit discharges through the use of newspapers, newsletters, utility bills, door hangars, radio public service announcements, videos, televised council meetings, brochures, signs, posters or other effective methods.</i>	■		■		

TABLE 4 – Education and Outreach BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	
<p>10: Public Education to Reduce Discharges of Pesticides, Herbicides and Fertilizers</p>	<p>Responsible for Implementation: CCSD #1</p> <p>Permit Year: Ongoing</p> <p>BMP Description: CCSD #1 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:</p> <ul style="list-style-type: none"> • Articles in CCSD #1 newsletters • CCSD #1' website. <p>U.S. Geological Survey publications. CCSD #1 funds have been contributed towards the generation and publication of several relevant reports that help to educate the public and staff, including Report 2003-4145, titled “Pesticides in the Lower Clackamas River Basin, Oregon, 2000-2001”: Report 2004-5061, titled “Organochlorine Pesticides in the Johnson Creek Basin, Oregon, 1988-2002”; and “Scientific Investigations Report 2008-5027: Pesticide occurrence and distribution in the Lower Clackamas River Basin, Oregon, 2000-2005”.</p> <ul style="list-style-type: none"> • 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 	<p>(1) Track programs messages delivered, type of communication piece, and where appropriate, the number of people affected.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>throughout the Portland Metro area by many municipal partners, including the Districts. This group is called the Regional Coalition for Clean Rivers and Streams.</p> <ul style="list-style-type: none"> • Brochures (disseminated at the CCSD #1 booth at fairs, for example) <p>Common topics that are addressed by this program include:</p> <ul style="list-style-type: none"> • Less harmful alternatives to the use of pesticides, herbicides, and fertilizers are provided. 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. <p>Note: CCSD #1 is collaborating with high schools within the watersheds to create a public outreach campaign project asking watershed residents to take a watershed “pledge”. CCSD #1 also schedules speaking engagements with watershed councils and neighborhood groups in order to get information about how they can become involved in CCSD #1-led activities related to improving the health of their watersheds.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Continue to maintain relevant public education materials on the County’s website. • Prepare a minimum of one relevant article per year for inclusion with Clackamas County customer billing statements. • Pursue additional relevant USGS studies if the opportunity presents itself. 	

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>11: Proper Disposal Practices to Reduce Discharges of Pesticides, Herbicides and Fertilizers</p>	<p>Responsible for Implementation: CCSD #1</p> <p>Permit Year: Ongoing</p> <p>BMP Description: When the District receives inquiries from the public about the proper disposal method for empty containers that once held pesticides/herbicides <u>or</u> for disposal of unwanted quantities of these products, citizens are promptly forwarded to Metro’s informational phone number (503-234-3000).</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Refer all pesticide/herbicide disposal related calls to Metro. 	<p>(1) Number of calls that CCSD#1 receives and refers to Metro annually.</p>
<p>12: Facilitate Public Reporting of Illicit Discharges and Spills and Other Types of Improper Disposal of Materials</p>	<p>Responsible for Implementation: CCSD #1 and Public & Government Relations</p> <p>Permit Year: Ongoing</p> <p>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 have received a report which relates to one of these discharges, they investigate and, if appropriate, apply control measures. See BMP #3.</p> <p><u>Illicit Discharges and Spills:</u> Through the periodic publication of articles in the District’s newsletter, ratepayers are encouraged to promptly report illicit discharges and spills. This newsletter is mailed to every ratepayer in the District along with each billing statement. In a recent article, ratepayers were:</p> <ul style="list-style-type: none"> • 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 <p>After citizens become aware of an illicit discharge or spill, they can contact District staff in person, by phone, or by email.</p> <p><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.</p> <p>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</p>	<p>(1) Describe news articles reported per year when appropriate.</p> <p>(2) Describe type of public complaints received. Resulting follow up actions per year will be kept in a database.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>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.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Include a relevant article in <i>The Citizen News</i> (for the County) once a permit term. • Continue to include area for public complaints on the County's website and track number of complaints for reporting. 	
<p>NPDES Permit Requirement – (iv) <i>As appropriate, provide public education on the proper operation and maintenance of privately-owned or operated stormwater quality management facilities.</i></p>		
<p>See Component #8: Structural Stormwater Facility Operations and Maintenance BMP: Private Water Quality Facility Maintenance Program (Table 8)</p>		
<p>NPDES Permit Requirement – (v) <i>Provide notice to construction site operators concerning where education and training to meet erosion and sediment control requirements can be obtained.</i></p>		
<p>See Component #3: Construction Site Runoff Control BMP: Conduct Training for Construction Site Operators (Table 3)</p>		

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>NPDES Permit Requirement – (vi) <i>Conduct or participate in an effectiveness evaluation to measure the success of public education activities during the term of this permit. The effectiveness evaluation must focus on assessing changes in targeted behaviors. The results of the effectiveness evaluation must be used in the adaptive management of the education and outreach program.</i></p>		
<p>13: Participate in a Public Education Effectiveness Evaluation</p>	<p>Responsible Department: CCSD #1</p> <p>Permit Year: Ongoing</p> <p>BMP Description: Over the permit term, CCSD #1 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 CCSD #1’ education and outreach strategy.</p> <p>Measurable Goal:</p> <ul style="list-style-type: none"> • Provide/compile information regarding a public education effectiveness evaluation over the permit term. 	<p>(1) Report on activities annually.</p>
<p>NPDES Permit Requirement – (vii) <i>Include training for municipal employees involved in MS4-related activities, as appropriate. The training should include stormwater pollution prevention and reduction from municipal operations, including, but not limited to, parks and open space maintenance, fleet and building maintenance, new municipal facility construction and related land disturbances, design and construction of street and storm drain systems, discharges from non-emergency fire fighting-related training activities, and stormwater system maintenance</i></p>		
<p>14: Training for Employees</p>	<p>Responsible Department: CCSD #1</p> <p>Permit Year: Ongoing</p> <p>BMP Description: A variety of training is provided to CCSD #1 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.</p> <p>With respect to fire fighting-related training activities, fire fighting is conducted within the permit area by Clackamas County Fire Department #1. They have a training center at SE 130th in Clackamas County. The training center includes a valve that is used to divert training flows into the sanitary system. CCSD #1 will check-in with the Fire Department during the permit term to ensure they are using the valve. Check-ins will include discussion related to training and the potential for</p>	<p>(2) Track the number of employees receiving training in stormwater management annually.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>other waste waters to enter the system.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Attend relevant stormwater management related training based on need and availability. • Check-in with the Fire Department regarding stormwater issues 	

SWMP Component #5 Public Involvement and Participation

NPDES permit requirements are listed below, followed by CCSD #1' 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 CCSD #1' BMPs that address the requirements that are 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
<p><i>e. Co-permittees must adopt a public participation approach that provides opportunities for the public to effectively participate in the development, implementation and modification of the co-permittee's stormwater management program. The process must include provisions for receiving and considering public comments on the SWMP and the TMDL pollutant load reduction benchmark development. This public involvement does not apply to adding BMPs, and revisions or updates to existing BMPs that do not change the substance of the BMPs.</i></p>	■

TABLE 5 –Public Involvement and Participation

CCSD #1 BMP Descriptions	BMP Implementation	Performance Measures
<p>NPDES Permit Requirement - (e) <i>Co-permittees must adopt a public participation approach that provides opportunities for the public to effectively participate in the development, implementation and modification of the co-permittee’s stormwater management program. The process must include provisions for receiving and considering public comments on the SWMP and the TMDL pollutant load reduction benchmark development. This public involvement does not apply to adding BMPs, and revisions or updates to existing BMPs that do not change the substance of the BMPs.</i></p>		
<p>15: Provide for Public Participation with SWMP and Benchmark Submittals</p>	<p>Responsible Department: CCSD #1 Permit Year: Five BMP Description: Schedule A.4.e of the District’s MS4 NPDES permit requires CCSD #1 to provide opportunity for public participation in the development, implementation, and modification of the CCSD #1’ 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, CCSD #1 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:</p> <ul style="list-style-type: none"> • Provide for public participation with the SWMP and pollutant load reduction benchmarks prior to the permit renewal application deadline. 	<p>N/A</p>

SWMP Component #6 Post-Construction Site Runoff

NPDES permit requirements are listed below, followed by CCSD #1' 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 CCSD #1' BMPs that address the requirements that are listed below.

SWMP Component #6: Post-Construction Site Runoff			
Schedule A.4.f Permit Requirement	Applicable BMPs		
	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
<p>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 ft² 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.</p>	■	■	■
<p>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.</p>	■	■	

SWMP Component #6: Post-Construction Site Runoff

Schedule A.4.f Permit Requirement	Applicable BMPs		
	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
<p>iii. <i>To reduce pollutants and mitigate the volume, duration, time of concentration and rate of stormwater runoff, the co-permittees must develop or reference an enforceable post-construction stormwater quality management manual or equivalent document by 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.</i></p>	■	■	■
<p>iv. <i>Co-permittees must review, approve and verify proper implementation of post-construction site plans for new development and redevelopment projects applicable to this section.</i></p>	■	■	
<p>v. <i>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.</i></p>	■	■	

TABLE 6 – Post-Construction Site Runoff BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>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 ft² 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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	
<p>16: Planning Procedures for New Development and Significant Redevelopment</p>	<p>Responsible for Implementation: CCSD #1</p> <p>Permit Year: Ongoing</p> <p>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</p>	<p>(1) The number and type of flow control, water quality treatment or infiltration facilities installed in accordance with the requirements.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>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:</p> <p><i>Private Residential Storm System Maintenance (e.g. subdivisions)</i> 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.</p> <p><i>Private Non-Residential Storm System Maintenance (e.g. commercial, industrial, etc)</i> 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.</p> <p>Maps are updated to include the location, type and drainage area of new facilities resulting from CCSD #1' post-construction standards.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • 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. 	<p>(2) Narrative to describe the status of the private facility database.</p> <p>(3) Narrative to describe results of tracking compliance with private facility maintenance agreements.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>17: Update Procedures for New Development and Significant Redevelopment</p>	<p>Responsible for Implementation: CCSD #1</p> <p>Permit Year: 2012</p> <p>BMP Description: The County conducted watershed evaluations and developed watershed action plans for the Kellogg Creek and Rock Creek watersheds in 2009. Recommendations in the action plans included proposed changes to the District’s stormwater standards for new and re-development. As a result, CCSD #1 embarked on a process to revise and update their standards in late 2009 and is currently continuing to work on those revisions in 2010. Updated standards will include new thresholds for meeting standards and increased emphasis on infiltration, on-site retention, and the duration of peak flows in order to address impacts associated with hydromodification. In addition, the design storm is being evaluated to ensure it will address the capture and treatment of 80% of average annual runoff. During the process to update the standards, updates have been checked against draft permit requirements included in the April 30th draft from DEQ. CCSD #1 anticipates adoption of the standards and development of a guidance manual to meet new permit requirements by June 30, 2011.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Complete updates to standards to meet new permit requirements by June 30, 2011. • Complete guidance manual for developers to facilitate the implementation of the new standards by June 30, 2011. 	<p>(1) Track Status of Adopting</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>18: BMP Sizing Tool Development to Address Hydromodification</p>	<p>Responsible for Implementation: CCSD #1</p> <p>Permit Year: Ongoing.</p> <p>BMP Description: Develop 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. Use of the tool in designing LID BMPS is expected to ultimately address the long-term impacts of increased runoff from development. To address flow durations, a long-term continuous simulation of hydrology is required. As a result, designing and sizing BMPs becomes more complicated than traditional design practices focused on a single design event. In order to make the BMP design process easier for the development community, neighboring states have developed a sizing tool. Currently, there are no BMP design/sizing tools to address the impacts of hydromodification that are applicable to local conditions such as rainfall patterns and critical channel forming flows. This tool will provide a simple, consistent and defensible methodology for designing/sizing LID throughout Clackamas County and the region to address hydromodification impacts.</p> <p>Measurable Goal:</p> <ul style="list-style-type: none"> The primary goal is to develop, by June 30, 2011, a tool to assist development engineers with the design/sizing of stormwater management facilities in order to reduce target pollutants and stream degradation impacts (i.e., hydromodification) associated with the development of impervious surfaces. 	<p>(1) Net impervious area treated by LID.</p> <p>(2) Number of applications submitted using tool.</p> <p>(3) Customer Feedback/Community Relations.</p>

SWMP Component #7 Pollution Prevention for Municipal Operations

NPDES permit requirements are listed below, followed by CCSD #1' 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 CCSD #1' BMPs that address the requirements that are listed below.

SWMP Component #7: Pollution Prevention for Municipal Operations							
Schedule A.4.g Permit Requirement	Applicable BMPs						
	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 District's Stormwater System	24: Flood Management Projects and Water Quality	25: Detention Pond Retrofit Program
i. <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;</i>	■	■					
ii. <i>Implement a management program to control the use and application of pesticides, herbicides and fertilizers on municipally-owned properties;</i>			■	■			
iii. <i>Inventory, assess, and implement a strategy to reduce the impact of stormwater runoff from municipal facilities that treat, store or transport municipal waste, such as yard waste or other municipal waste not already covered under a 1200 series NPDES permit;</i>							

SWMP Component #7: Pollution Prevention for Municipal Operations

Schedule A.4.g Permit Requirement	Applicable BMPs						
	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 District's Stormwater System	24: Flood Management Projects and Water Quality	25: Detention Pond Retrofit Program
iv. <i>Implement controls to limit infiltration of seepage from the municipal sanitary sewer system to the MS4 where necessary;</i>					■		
v. <i>Implement a program to control the release of materials related to fire-fighting training activities; and,</i>	See BMP #14: Employee Training						
vi. <i>Assess co-permittee flood control projects to identify potential impacts on the water quality of receiving water bodies and determine the feasibility of retrofitting structural flood control devices for additional stormwater pollutant removal. The results of this assessment must be incorporated and considered along with the results of the Stormwater Retrofit Assessment required by this permit;</i>						■	■

TABLE 7 – Pollution Prevention for Municipal Operations BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>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;</p>		
<p>19: Street Sweeping</p>	<p>Responsibility for Implementation: DTD Roads and City of Happy Valley</p> <p>Permit Year: Ongoing</p> <p>BMP Description: Major arterial curbed streets within the DTD service area (which includes CCSD#1) 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.</p> <p>Major arterial curbed streets within the City of Happy Valley service area are swept on a regular basis by the City. The frequency varies depending on a variety of factors (for example, traffic volumes).</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • DTD Roads: See DTD’s MS4 NPDES SWMP. • City of Happy Valley Roads: Sweep approximately 100 lane miles of curbed streets per year on average. 	<p>(1) Number of miles that were swept in Happy Valley, and</p> <p>(2) Mass or volume of material removed during sweeping in Happy Valley.</p> <p>For DTD roads, see tracking measures in the DTD MS4 NPDES SWMP.</p>
<p>20: Operations & Maintenance for Public Streets</p>	<p>Responsibility for Implementation: DTD Roads and City of Happy Valley</p> <p>Permit Year: Ongoing</p> <p>BMP Description: Operations and maintenance of public streets within the DTD service area (which includes CCSD#1) is the responsibility of DTD. For information on their activities, refer to the DTD MS4 NPDES SWMP.</p> <p>Public streets within the City of Happy Valley are carried out by the City as follows:</p> <ul style="list-style-type: none"> • <u>Road repair activities:</u> These are conducted by Happy Valley as needed in a manner that minimizes or prevents erosion. When possible, this work is scheduled during the dry season. • <u>Litter control:</u> This involves 1) the removal of large dead animals from roadways, 2) preventing illegal solid waste dumping through signage and enforcement actions against offenders, 3) removal of illegal solid waste dumps, and 4) the District’s “Adopt A Road” program, which enlists the support for litter removal on specific road segments from individuals, families, community groups and businesses. 	<p>(1) Mass or volume of material removed by the City of Happy Valley “Adopt A Road” program.</p> <p>(2) Number of illegal solid waste dumps that are removed in the City of Happy Valley.</p> <p>(3) Mass or volume of material that is removed by the</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<ul style="list-style-type: none"> • <u>Ice removal work</u>: This is performed by Happy Valley on certain paved streets on an as-needed basis. The frequency varies depending on a range of factors, including personnel availability, air temperature, road surface temperature, humidity, and precipitation. • <u>Road sanding</u>: This enhances traction during ice/snow events. After the ice/snow event, when practical, the sand is removed from the roadway with mechanical sweeping machines. <p>Measurable Goals:</p> <ul style="list-style-type: none"> • DTD Roads: See DTD’s MS4 NPDES SWMP. • Remove illegal solid waste dumps as they are discovered. • Collect sand applied for ice/snow events within 10 days of the end of the event. 	<p>elimination of illegal solid waste dumping sites in the City of Happy Valley.</p> <p>(4) Amount of sand applied and then removed by Happy Valley as a result of a snow/ice event and time of removal after the event.</p>
<p>NPDES Permit Requirement – (ii) Implement a management program to control the use and application of pesticides, herbicides and fertilizers on municipally-owned properties;</p>		
<p>21: Proper Road Maintenance Practices to Reduce the Discharge of Pesticides, Herbicides and Fertilizers</p>	<p>Responsible for Implementation: Happy Valley and DTD Roads</p> <p>Permit Year: Ongoing</p> <p>BMP Description: Proper road maintenance practices to reduce the discharge of pesticides, herbicides, and fertilizers within the DTD service area (which includes CCSD#1 and County roads in Happy Valley) is the responsibility of DTD. For information on their activities, refer to the DTD NPDES SWMP.</p> <p><i>Proper road maintenance practices within the City of Happy Valley are carried out by the City as follows:</i></p> <p>Herbicides are occasionally but rarely used in road maintenance operations in the MS4-permitted area. In fact, in many years, no herbicides have been applied for roadside vegetation control in the District’s area. This is due to the facts that: a) most roads in the MS4-permitted area are paved, have curbs, and are served by piped storm sewer systems, and b) any vegetation present in the road right-of-way is usually part of a landscape maintained by the property’s owner. In most of the instances that involve Road Department roadside vegetation management activity within the MS4-permitted area, mowing is the preferred vegetation control system. When herbicides are used, these products are always used in a manner consistent with the product’s label.</p>	<p>(1) Happy Valley - The quantity of herbicide products used per zip code. This is the same data that will be reported to Oregon's Department of Agriculture per the Pesticide Use Reporting System.</p> <p>For DTD roads see tracking measures in the DTD MS4 NPDES SWMP.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>Happy Valley has adopted the Oregon Department of Transportation Routine Road Maintenance Manual which includes integrated pest management. The manual governs the manner in which maintenance crews proceed on a wide variety of routine maintenance activities. The ODOT manual received approval from the National Marine Fisheries Service (NOAA Fisheries) as being exempt from “takings” with respect to salmonids listed as endangered. In other words, the practices in the manual have been designed to eliminate the adverse impacts of road maintenance activities on salmonid habitat while preserving the ability to maintain the functional integrity of the road system.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • For DTD Roads: See DTD’s MS4 NPDES SWMP for measurable goals. • For Happy Valley Roads: Continue to implement the integrated pest management portion of the ODOT Road Maintenance Manual. 	
<p>22: Landscape Maintenance Practices to Reduce the Discharge of Pesticides, Herbicides and Fertilizers</p>	<p>Responsible for Implementation: CCSD #1, City of Happy Valley and DTD</p> <p>Permit Year: See the measurable goals portion of this BMP.</p> <p>BMP Description: Herbicides, pesticides and fertilizers are used by Clackamas County and the City of Happy Valley in landscape maintenance applications around County and City owned buildings and facilities. When herbicides and pesticides are used, these products are used in a manner consistent with the product’s label.</p> <p>During the previous permit term (2004 – 2009), the County and City conducted the following tasks in an attempt to reduce the discharge of pollutants associated with landscape maintenance activities:</p> <ul style="list-style-type: none"> • Assembled a list of all County and City of Happy Valley buildings and facilities in the District’s MS4 permit area, • Met with the proper County facilities and building maintenance personnel to inform them that herbicides, pesticides and fertilizers must be used with care in landscape maintenance applications around County-owned buildings and facilities in the District. These personnel were encouraged to: <ul style="list-style-type: none"> 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. 	<p>(1) The number of meetings conducted.</p> <p>(2) The results and follow-up activities conducted as a result of the meetings.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>For this permit term, this BMP will include:</p> <ul style="list-style-type: none"> • 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 the City of Happy Valley and Clackamas County (i.e. the library at Clackamas Town Center) are not included in this BMP, for lease terms do not, or tend to not, provide the City or County with the authority to make landscaping decisions. • Assembling a list of lands in CCSD#1's MS4 permit area that are not owned by Clackamas County, CCSD#1, or the City of Happy Valley, 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 Sunrise Water Authority, Clackamas River Water, Clackamas County Fire District No. 1, and the North Clackamas School 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). <p>Measurable Goal:</p> <ul style="list-style-type: none"> • Check back in with all County & City of Happy Valley buildings and facilities that were visited (during the last permit cycle) at least once during this permit cycle. 	
<p>NPDES Permit Requirement – (iii) <i>Inventory, assess, and implement a strategy to reduce the impact of stormwater runoff from municipal facilities that treat, store or transport municipal waste, such as yard waste or other municipal waste not already covered under a 1200 series NPDES permit;</i></p>		
<p>A BMP is not needed to address this requirement as catch basin cleanings are taken to and temporarily stored at a decant facility. Runoff from the decant facility drains to the sanitary system.</p>		
<p>NPDES Permit Requirement – (iv) <i>Implement controls to limit infiltration of seepage from the municipal sanitary sewer system to the MS4 where necessary</i></p>		
<p>23: Control Infiltration and Cross Connections to the District's Stormwater System</p>	<p>Responsible for Implementation: CCSD #1</p> <p>Permit Year: Ongoing</p> <p>BMP Description: The District prevents exfiltration of flows from municipal sanitary sewers in the following ways:</p> <ul style="list-style-type: none"> • Through ownership of a relatively new sanitary sewer system. Most of the infrastructure in CCSD#1-UGB's sanitary sewer system has been constructed since 1974 and its condition is 	<p>(1) Number of cross-connections/sanitary discharges identified.</p> <p>(2) The number and type of</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>generally sound and free of cracks and leaks.</p> <ul style="list-style-type: none"> Through the presence of a rigorous maintenance program involving routine cleaning and inspection of lines to ensure that there are very few leaks. Lines are inspected with a television camera on a periodic basis. Tree roots, which could cause leakage, are removed whenever identified. <p>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 field inspections by certified plumbing inspectors, ensures that fixtures that need to be plumbed into CCSD#1's sanitary sewer system or a private septic system are actually plumbed into those systems, preventing hundreds of illicit discharges per year. The District is able to identify and control the exfiltration of flows from municipal sanitary sewers when it occurs by:</p> <ul style="list-style-type: none"> 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. <p>Measurable Goals:</p> <ul style="list-style-type: none"> Eliminate any identified sanitary discharges to the storm system. 	<p>inspections performed, abatement actions and enforcement actions taken.</p>
<p>NPDES Permit Requirement – (v) <i>Implement a program to control the release of materials related to fire-fighting training activities;</i></p>		
<p>This requirement is addressed under BMP #14.</p>		
<p>NPDES Permit Requirement – (vi) <i>Assess co-permittee flood control projects to identify potential impacts on the water quality of receiving water bodies and determine the feasibility of retrofitting structural flood control devices for additional stormwater pollutant removal. The results of this assessment must be incorporated and considered along with the results of the Stormwater Retrofit Assessment required by this permit;</i></p>		
<p>24: Flood Management Projects and Water Quality</p>	<p>Responsible for Implementation: CCSD #1 Planning and Maintenance Staff</p> <p>Permit Year: Ongoing</p> <p>BMP Description: There are two Components to this BMP. The first is to ensure that water quality is assessed and addressed when developing capital improvement projects (CIPs) for flooding. The second is to examine the existing system to determine whether water quality retrofits would be beneficial and feasible.</p> <p>CIPs: The District hired a consultant for the development of Watershed Action Plans which were completed in July 2009. These Action Plans were based on watershed assessments which identified, prioritized and scheduled projects and actions necessary to address factors limiting watershed health.</p>	<p>(1) Number of retrofits constructed that address water quality treatment.</p> <p>(2) Number of flood management projects implemented or constructed and the percentage of those</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>The Action Plans include recommendations for site specific and reach oriented solutions and management programs for the significant, and often, interrelated, problems related to flooding, erosion and deposition, water quality, and habitat. One of the main goals and outcomes of the Action Plans was to prioritize what stormwater management actions and activities should be conducted in specific sub-basin areas, such as where to assist the operations and maintenance program in targeting specific activities in various locales. Another main goal of the Watershed Action Plans is to protect, restore, and enhance the health and function of a watershed. Action Plans are currently being utilized to:</p> <ol style="list-style-type: none"> 1) Identify key problems and opportunities; 2) Identify areas where efforts should be focused both in terms of protection and restoration efforts and asset management activities; 3) Implement policies, programs, and standards in specific areas; 4) Build support for implementation and serve as a tool for funding. <p>As a result, the stormwater CIP process includes consideration of water quality benefits.</p> <p><u>Retrofits:</u> As structural facility inspections occur under BMP #26, sediment and debris from the facilities are removed. In the process of conducting this maintenance, facilities are sometimes found to be dysfunctional due to design flaws. As a result, facilities are sometimes retrofitted or reconstructed. In addition, projects resulting from the Watershed Action Plans described above include retrofits in addition to proposed new CIP facilities. A specific program to retrofit detection facilities is also described under BMP #25.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> • Ensure all planned stormwater CIPs include consideration of water quality. 	<p>projects that include water quality Components.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>25: Detention Pond Retrofit Program</p>	<p>Responsible for Implementation: CCSD #1</p> <p>Permit Year: Ongoing.</p> <p>BMP Description: One recommendation from the Watershed Action Plans is to upgrade and enhance the performance of older detention facilities in the watershed. Since 1993, when the first stormwater requirements were adopted, the stormwater management standards have been changed four times. Facilities constructed prior to 1995, are generally thought to be in the greatest need of updating to more current performance standards. A retrofit program has been initiated to design specific modifications for selected facilities (or collection of facilities). Facilities built before 1995 are targeted, but additional facilities constructed prior to using the current standards may also be considered. A test basin will be selected to focus initial retrofit activities and will consider a) the number of older facilities; b) the potential or need for protection or improvement in the subbasin; c) the location of a monitoring station that could be used to evaluate before and after conditions (to show improvements and value); and d) the ease and opportunity to make immediate improvements.</p> <p>The facility improvements will consider changes to outlet structures; expansion or optimization of available storage; increasing flow control for small storms in exchange for flood control; modifying flow paths or changing the water quality treatment method; improving the aesthetics, landscape, or access control; and major expansion (e. g. acquire additional land), consolidation, or replacement. The evaluation will be conducted in two phases – Phase 1 will be an assessment phase where existing systems will be reviewed, a test subbasin will be selected, alternatives and preferences will be identified, opportunities will be considered, the remaining subbasins will be evaluated, and a plan will be devised for consideration by CCSD #1. Phase 2, will be preparing the design documents to implement the proposed changes for CCSD #1 crews or contract bids. CCSD #1 plans to begin the facility upgrades in 2010.</p> <p>Measurable Goal:</p> <ul style="list-style-type: none"> The primary goal of the retrofit program is to retrofit existing ponds to improve their function to better meet watershed health goals. The goal will be to conduct 2 to 5 retrofits per year. 	<p>(1) Track pilot testing activities.</p> <p>(2) Number, type, and location of retrofits.</p>

SWMP Component #8 Structural Stormwater Facility Operations and Maintenance

NPDES permit requirements are listed below, followed by CCSD #1' 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 CCSD #1' BMPs that address the requirements that are listed below.

SWMP Component #8: Structural Stormwater Facility Operations and Maintenance				
Schedule A.4.h Permit Requirement	Applicable BMPs			
	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
<p>i. <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.</i></p>	■	■		■
<p>ii. <i>As part of the Stormwater Structural Facilities and Controls Inspection and Maintenance program, co-permittees must develop and implement a 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:</i></p> <ol style="list-style-type: none"> 1. <i>Publicly-owned or operated stormwater quality facilities inventory and mapping process, inspection and maintenance schedule, inspection, operation and maintenance criteria and priorities, description of inspector type and staff position or title, and, inspection and maintenance tracking mechanisms; and</i> 2. <i>Privately-owned or operated stormwater quality facilities procedures for and types of stormwater facilities that will be inventoried and mapped, inspection criteria, rationale, priorities, inspection frequency and procedures, required training or qualifications to inspect private stormwater facilities, reporting requirements, and, inspection and maintenance tracking mechanism.</i> 	■		■	■

TABLE 8 – Structural Stormwater Facilities Operations and Maintenance BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<p>NPDES Permit Requirement – (i) <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.</i></p> <p>NPDES Permit Requirement – (ii) <i>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:</i></p> <ol style="list-style-type: none"> 1) <i>Publicly-owned or operated stormwater quality facilities inventory and mapping process, inspection and maintenance schedule, inspection, operation and maintenance criteria and priorities, description of inspector type and staff position or title, and, inspection and maintenance tracking mechanisms; and</i> 2) <i>Privately-owned or operated stormwater quality facilities procedures for and types of stormwater facilities that will be inventoried and mapped, inspection criteria, rationale, priorities, inspection frequency and procedures, required training or qualifications to inspect private stormwater facilities, reporting requirements, and, inspection and maintenance tracking mechanism.</i> 	

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>26: Maintenance of Conveyance System Components and Structural Controls</p>	<p>Responsibility for Implementation: CCSD #1 Maintenance Staff</p> <p>Permit Year: Ongoing</p> <p>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.</p> <p>The District and DTD are working on the development of an intergovernmental agreement to clarify and coordinate maintenance activities. Based on the growing needs of the District for stormwater maintenance, the District purchased a vehicle for conveyance system and structural controls maintenance. Additionally, there is one full time equivalent (FTE) dedicated to inspection of structures in a specified area prior to assigning a maintenance vehicle to that area. The District currently utilizes Clackamas County Correction crews for maintenance of stormwater detention/water quality ponds.</p> <p>Note: CCSD #1 is currently conducting Watershed Action Plans (WAPs) that are projected to be completed by the end of the permit term which is currently anticipated to be 2016. The WAPs 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.</p> <p>Measurable Goals (The following measurable goals apply to the storm system for which CCSD#1 has responsibility as described above.):</p> <ul style="list-style-type: none"> • Clean storm lines and ditches on an as-needed basis. • Maintain structural water quality facilities on a 3-year cycle. 	<ol style="list-style-type: none"> (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

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
<p>27: Conduct Catch basin Cleaning and Maintenance</p>	<p>BMP Owner: CCSD #1 Permit Year: Ongoing BMP Description: CCSD #1 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:</p> <ul style="list-style-type: none"> • Clean 50% of District owned or District operated/maintained public catch basins each year. • Schedule repair or replacement of catch basins based on inspection results. 	<p>(1) Track the percent of District owned or District operated/maintained catch basins cleaned per year. (2) Track the volume of debris removed during cleaning activities.</p>
<p>28: Storm Drain Cleaning Assistance Program</p>	<p>BMP Owner: CCSD #1 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:</p> <ul style="list-style-type: none"> • 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. <p>Measurable Goals:</p>	<p>(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.</p>

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	<ul style="list-style-type: none"> Continue to provide assistance to commercial and industrial facilities to support their water quality facility maintenance. 	
<p>29: Private Water Quality Facility Maintenance Program</p>	<p>BMP Owner: CCSD #1 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.</p> <p>Measurable Goals:</p> <ul style="list-style-type: none"> 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. 	<p>(1) Number of structures inspected and cleaned.</p>