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MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) COMPLIANCE INSPECTION

CLACKAMAS COUNTY SERVICE DISTRICT #1 AND THE CITY OF HAPPY VALLEY, OR

INSPECTION REPORT

Inspection Dates:
December 17–18, 2014

Report Date:
March 19, 2015

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1.0 Introduction

On December 17–18, 2014, the U.S. Environmental Protection Agency (EPA), Region 10 and an EPA contractor, PG Environmental, LLC, (hereinafter, collectively, the EPA Inspection Team) conducted an inspection of the municipal separate storm sewer system (MS4) program for the Clackamas County Service District No. 1 (hereinafter, CCSD#1) and the City of Happy Valley, Oregon (City). Discharges from both the CCSD#1 and City's MS4 are regulated under the *National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Discharge Permit No. ORS108016*, reissued by the State of Oregon Department of Environmental Quality (ORDEQ) on March 16, 2012 (hereinafter, the Permit; see Appendix A). The Permit was issued to 13 co-permittees within Clackamas County, including CCSD#1 and the City. The Permit was originally issued by ORDEQ on December 15, 1995, renewed on March 3, 2004, and reissued on March 16, 2012.

The Permit authorizes CCSD#1 and the City to discharge stormwater and certain non-stormwater flows to surface waters and to ground waters of the state from the MS4 owned or operated by each co-permittee in the permitted area. Schedule A.3 of the Permit requires the co-permittees to "continue to implement and assess the effectiveness of its Department [ORDEQ]-approved Stormwater Management Plan (SWMP)." Further, Schedule A.4 of the Permit requires the co-permittees to implement a SWMP plan that outlines practices, techniques, or provisions associated with protecting water quality and satisfying requirements of the Permit. At the time of the inspection, both CCSD#1 and the City were operating under the *MS4 NPDES Permit Stormwater Management Plan for Clackamas County Service District No. 1 and the City of Happy Valley*, originally submitted to ORDEQ on October 6, 2010, and revised on April 27, 2012 (hereinafter, SWMP; see Appendix B).

The City of Happy Valley is located about 8 miles southeast of Portland, Oregon. The U.S. Census Bureau estimated the City's population at 16,321 as of 2013. The City's primary land use is residential, with smaller percentages of commercial, industrial, and forested/undeveloped land. According to City staff, the City is included within the CCSD#1 service area, which services both the residents of the City as well as surrounding residents located in parts of unincorporated Clackamas County.

The co-permittee representatives present during the MS4 inspection explained that CCSD#1 services approximately 65,000 residents. As stated on the CCSD#1 Web page, "CCSD#1 provides wastewater collection to the unincorporated areas of Clackamas County, the City of Happy Valley, the western edges of Damascus, and communities of Hoodland, Boring and Fischer's Forest Park…The district also provides surface water management services within the City of Happy Valley and in unincorporated Clackamas County."

Both CCSD#1 and the City fall within the Willamette River Basin. The co-permittees have identified three major tributaries to the Willamette River that receive flow from the CCSD#1 and City's MS4 systems: Johnson Creek, Kellogg Creek, and Clackamas River.

The three major tributaries receive flow from other small order streams that flow through both co-permittees service areas. These small order streams are listed in the co-permittees' joint 2013–2014 annual report.

As stated in the CCSD#1 and City of Happy Valley 2013–2014 Annual Report (hereinafter, Annual Report), CCSD#1 is composed of four geographic subunits:

- Fischer's Forest Park, in the Redland area.
- Hoodland, in and near Welches, Wemme, and Rhododendron.
- Boring, in the hamlet of Boring.
- Portland metropolitan area.

The Portland metropolitan area subunit within CCSD#1 is the only subunit located within the urban growth boundary (UGB). This subunit is known as CCSD#1-UGB and includes a portion of the City of Happy Valley. The Annual Report states that the remainder of the City will be serviced under CCSD#1 as it is developed.

The Surface Water Management Division of the Clackamas County Water Environment Services (hereinafter, WES) is responsible for administering and implementing the MS4 program in its entirety on behalf of CCSD#1, as specified in the Intergovernmental Agreement between CCSD#1 and Clackamas County, dated June 5, 2003. In addition, a majority of the MS4 compliance activities conducted by WES on behalf of CCSD#1 (e.g., dry-weather outfall screening; public education and outreach; post-construction control planning, approval, and enforcement procedures) are also conducted by WES on behalf of the City. The City implements certain stormwater program components that are not administered or managed by WES City-wide in a manner that fulfills Permit requirements. For example the following activities are performed by the City: street and culvert maintenance; erosion and sediment control regulation and inspection; and implementation of pollution prevention and good housekeeping procedures for the City's Department of Public Works facility. Furthermore, the Clackamas County Department of Transportation and Development (DTD) implements certain components of the MS4 program for both co-permittees, including County-owned roadway and right-of-way maintenance and repair and litter control, also specified in the Intergovernmental Agreement between CCSD#1 and Clackamas County, dated June 5, 2003 .

The EPA MS4 program compliance inspection evaluated facilities, activities, and projects within the co-permittees' service area. The inspection focused on the following four SWMP components, described in Schedule A.4 of the Permit:

- Illicit Discharge Detection and Elimination (IDDE).
- Post-Construction Site Runoff.
- Pollution Prevention for Municipal Operations.
- Stormwater Management Facilities Operation and Maintenance Activities.

The City relies on WES for the implementation of both the IDDE program and post-construction site runoff program. However, the City implements its own pollution

prevention for municipal operations portion of the stormwater program to comply with Permit requirements.

The purpose of the inspection was to obtain information that will assist EPA in assessing the CCSD#1's and the City's compliance with the requirements of the Permit and associated SWMP, as well as the implementation status of the current MS4 program. The inspection schedule is presented as Appendix C.

The EPA Inspection Team obtained information through interviews with representatives from the Clackamas County WES and DTD, and the City, along with a series of site visits, record reviews, and field verification activities within both co-permittees' permitted areas. The office sessions were held to obtain information regarding overall program management, program evaluation, and oversight. In addition, on December 18, 2014, the EPA Inspection Team held a closing conference with representatives from WES, DTD, and the City to review the EPA Inspection Team's preliminary observations.

The following primary representatives were involved in the inspection:

CCSD#1 and City of Happy Valley MS4 Program Compliance Inspection: December 17–18, 2014	
Water Environment Services (WES)	Mona LaPierre, Monitoring and Compliance Manager Andrew Swanson, Water Quality Analyst Greg Geist, Interim Director Don Kemp, Development Review Supervisor Andrew Robins, Field Operations Supervisor Leah Johanson, Senior Civil Engineer Jim Conrad, Source Control Specialist Susan Ottersen, Engineer Tech 3 GIS Analyst Gail Shaloum, Environmental Policy Specialist Zach Koellermeier, Field Operations Nick Degliantoni, Field Operations
Clackamas County Department of Transportation and Development (DTD)	Randall A. Harmon, Interim Transportation Operations Manager Joel Howie, Capital Projects Supervisor Mike Bezner, Engineering Manager Ron Buck, IVM Coordinator
City of Happy Valley (City)	Chris Randall, Public Works Director Carol Earle, Engineering Manager

CCSD#1 and City of Happy Valley MS4 Program Compliance Inspection: December 17–18, 2014	
State of Oregon Department of Environmental Quality Representative (ORDEQ)	Lisa Cox, MS4 Program Coordinator
EPA Region 10 Representative	Robert Grandinetti, NPDES Compliance Unit
EPA Contractors	Kort Kirkeby, PG Environmental, LLC Anthony D'Angelo, PG Environmental, LLC

2.0 Information Obtained Regarding Compliance with the Permit

The EPA Inspection Team formally requested that both CCSD#1 and the City provide specific documentation for review prior to the inspection and have additional information available for review at the time of the inspection. The EPA Inspection Team provided CCSD#1 and the City a written list of requested records on November 21, 2014 (hereinafter, EPA Records Request; refer to Appendix D). In response, WES provided information to the EPA Inspection Team electronically prior to the onsite inspection. In addition, the City made additional documents available during the inspection and provided documents on a flash drive and as hardcopy to the EPA Inspection Team. The EPA Records Request is referenced, as applicable, throughout this inspection report.

During the inspection, the EPA Inspection Team obtained documentation and other supporting evidence regarding compliance with the Permit and implementation of the co-permittees' joint SWMP. The presentation of inspection observations in this report does not constitute a formal compliance determination or notice of violation; rather, it identifies potential Permit non-compliance and program deficiencies. Program deficiencies are areas of concern for successful program implementation. All referenced photograph documentation is provided in Appendix E, the Photograph Log; all referenced documentation used as supporting evidence is provided in Appendix F, the Exhibit Log.

During the inspection, the EPA Inspection Team identified several elements of CCSD#1's and the City's MS4 programs that were notable, including the following:

1. The EPA Inspection Team observed active MS4-program participation by multiple public entities, including WES, DTD, and the City's Department of Public Works. It appeared that communication among the various entities had been established and that program roles and responsibilities had been designated with written agreements.
2. CCSD#1 had approved and implemented a surface water service fee to assist in funding the MS4 program. The WES representatives explained that each single-family residential property is charged a flat rate, which is referred to as a single "unit." Commercial and industrial properties are charged one unit per 2,500 square feet.
3. WES had assigned a geographic information system (GIS) staff member to support various mapping activities related to Permit compliance; these mapping activities include monitoring locations, public infrastructure, and streams and watersheds. During the inspection, the WES representatives provided multiple examples of maps generated with the help of the GIS staff member and additionally demonstrated the WES mapping system to the EPA Inspection Team.
4. WES had developed and implemented maintenance agreements with subdivisions and partitions to ensure the adequate long-term operation and maintenance of privately owned stormwater management controls. In addition, WES had

developed and implemented the Stormdrain Cleaning Assistance Program (SCAP) to assist industrial, commercial, and multi-family housing unit property owners in securing private vendors to perform storm system maintenance and cleaning at a reasonable cost.

Table 1 provides a summary of the EPA Inspection Team's overall inspection observations. Descriptions and details regarding the inspection observations, as well as supporting documentation, are provided in the applicable sections of this MS4 inspection report.

Table 1. Requirements of the Permit (ORS108016) and Potential Non-compliance/Program Deficiencies Identified by the EPA Inspection Team

Program Elements and Permit Requirements	Potential Non-compliance / Program Deficiency
Illicit Discharge Detection and Elimination (IDDE) (Schedule A.4.a of the Permit) See Section 2.1 of the inspection report for the specific SWMP and Permit references for each program deficiency or item of potential non-compliance.	1. The City and CCSD#1 had not accurately identified all stormwater system outfalls on their GIS-based maps (Section 2.1.1). 2. The City and CCSD#1 had not identified all priority outfalls within the MS4 area that discharge to waters of the state. (Section 2.1.2) 3. The EPA Inspection Team identified an illicit discharge, which was traced to vehicle washing activities, occurring at Clackamas Fire Station #1. (Section 2.1.3). See the referenced section of the inspection report for further discussion of these issues.
Post-Construction Site Runoff (Schedule A.4.f of the Permit) See Section 2.2 of the inspection report for the specific SWMP and Permit references for each program deficiency or item of potential non-compliance.	1. The *WES Stormwater Management Development Guide* and other referenced documents did not include low impact development (LID) and green infrastructure (GI) approaches. (Section 2.2.1). See the referenced section of the inspection report for further discussion of these issues.
Pollution Prevention for Municipal Operations (Schedule A.4.g of the Permit) See Section 2.3 of the inspection report for the specific SWMP and Permit references for each program deficiency or item of potential non-compliance.	1. The City and CCSD#1 had not fully implemented their strategy to control the release of materials and pollutants from fire-fighting training activities to the MS4. (Section 2.3.1). 2. CCSD#1 was not fully implementing its strategy to reduce the impact to stormwater runoff from its municipal facilities**.** (Section 2.3.2 and Section 2.3.3). See the referenced section of the inspection report for further discussion of these issues.
Stormwater Management Facilities Operation and Maintenance Activities (Schedule A.4.h of the	1. The City and CCSD#1 were not verifying that all private non-residential stormwater controls were being adequately operated and maintained by the

Program Elements and Permit Requirements	Potential Non-compliance / Program Deficiency
Permit) See Section 2.4 of the inspection report for the specific SWMP and Permit references for each program deficiency or item of potential non-compliance.	private owner. (Section 2.4.1). See the referenced section of the inspection report for further discussion of these issues.

2.1 Illicit Discharge Detection and Elimination (IDDE)

Schedule A.4.a of the Permit requires the co-permittees to continue to implement a program to detect, remove, and eliminate illicit discharges to the MS4. Pursuant to the Permit, pages 5–14 of the co-permittees' joint SWMP plan outlines the focus for identifying and eliminating illicit discharges.

It should be noted that WES is responsible for implementing the IDDE program for both CCSD#1 as well as the City; therefore, findings listed below are applicable to both co-permittees.

On December 17–18, 2014, the EPA Inspection Team conducted site visits at stormwater outfalls within the co-permittees' service area. The primary purpose of the visits was to observe the oversight process for inspecting private and CCSD#1/City-owned priority stormwater outfalls, and to identify the accuracy of the co-permittees' GIS maps.

The EPA Inspection Team visited the following outfalls and priority areas:

- Riverside Park.
- Evelyn Street and Mangan Drive.
- Portland Road and Gravel.
- SE 169th Avenue & Sunnyside (City location).
- SE 162nd Avenue & Sunnyside (City location).
- Happy Valley Park (City location).
- Pheasant Court.
- Clackamas County Fire Department Station #1.
- Eastridge Church at 142nd Avenue & Sunnyside.

Summary observations pertaining to the stormwater outfall site visits are presented below due to their direct relevance to the co-permittees' obligations under the Permit.

2.1.1. The City and CCSD#1 had not accurately identified all stormwater system outfalls on their GIS-based maps.

Schedule A.4.a.xi of the Permit states that the co-permittees shall "maintain maps identifying known co-permittee-owned MS4 outfalls discharging to waters of the

State…if the co-permittee identifies the need to modify these maps, the maps must be updated in digital or hard-copy within six months of identification." Page 11 of the SWMP states the co-permittees will "update maps of major outfalls on an annual basis."

The EPA Inspection Team formally requested a "map showing the extent of the storm drain system, including outfalls and surface waters. (An onsite demonstration of a GIS-based map may be appropriate.)" In response, WES provided multiple GIS-based maps identifying 447 stormwater outfalls in addition to 37 identified "priority outfalls" within CCSD#1 and the City (refer to Appendix F, Exhibit 1). WES GIS personnel also provided an onsite demonstration of the GIS-based map database identifying outfalls within CCSD#1 and the City.

The City and CCSD#1 appeared to have incorrectly identified all of the 447 points identified as outfalls. For example, the EPA Inspection Team and WES representatives visited an area near the intersection of Evelyn Street and Mangan Drive on December 17, 2014. The area, located within CCSD#1, contained multiple points identified as outfalls. During the site visit, several of the points identified as "outfalls" on the GIS-based map were identified as curbside inlets and culvert outlets along a ditch (refer to Appendix E, Photographs 1 and 2). The WES staff present stated that the map is incorrect, and the GIS database for labeling outfalls includes both storm drain inlets and outlets mapped by WES.

The EPA Inspection Team, along with the WES representative responsible for conducting dry-weather outfall screening, visited a number of outfalls identified by WES representatives as "priority outfalls". It was found that not all of the outfalls inspected and considered "priority outfalls" were mapped and present in the GIS database. Specifically, Outfall #32 at SE 169th Avenue and Sunnyside Road had been identified by WES as a priority outfall and had been inspected for the last two years; however, this outfall was not identified as one of the 37 "priority outfalls" on the map provided by WES (refer to Appendix F, Exhibit 2 and Appendix E, Photograph 3).

2.1.2. The City and CCSD#1 had not identified and screened all priority outfalls within the MS4 area that discharge to waters of the state.

Schedule A.4.a.xi of the Permit states that the co-permittees shall "maintain maps identifying known co-permittee-owned MS4 outfalls discharging to waters of the State. The dry-weather screening priority locations must be specifically identified on maps by November 1, 2012. If the co-permittee identifies the need to modify these maps, the maps must be updated in digital or hard-copy within six months of identification."

Page 9 of the SWMP identifies the two categories of storm sewer outfalls: major and minor outfalls. It further states, "Major or priority outfalls are inspected by District [WES] staff for the presence of illicit discharges at least once per year." Page 11 of the SWMP states the co-permittees will "update maps of major outfalls on an annual basis."

The EPA Inspection Team discussed the identification of major or priority outfalls with WES staff, who explained they used the SWMP's definition of priority outfalls. Page 9 of the SWMP states, "A major outfall is an outfall which:

- Is a large pipe (≥36" inside diameter), or
- Is a conveyance other than circular pipe that serves a drainage area of more than 50 acres, or
- Is a single pipe (≥12" inside diameter) if it also receives any drainage from lands zoned for industrial activity, or
- Is a single conveyance other than a circular pipe which receives drainage from more than two acres of land zoned for industrial activity."

The EPA Inspection Team visited a number of major or priority outfalls identified by WES, as well as outfalls that were not identified as major or priority and found that the co-permittees had not identified all priority outfalls within the MS4-permitted area. For example, the EPA Inspection Team identified two outfalls located near SE 162nd Avenue and Sunnyside Road that lead to Rock Creek. The WES stormwater drainage map for the area displays the outfalls near Sunnyside Road and shows they discharge to a constructed stormwater detention basin. The constructed stormwater detention basin then discharges to Rock Creek (refer to Appendix F, Exhibit 2). The EPA Inspection Team viewed an approximately 32-inch-diameter outfall pipe leading from Sunnyside Road to the detention pond; the team also viewed one large stormwater outfall located at 162nd Avenue, upstream of the stormwater detention basin (refer to Appendix E, Photographs 4 through 6). The stormwater outfall at 162nd Avenue was very large (approximately 6 feet in diameter) and was flowing at the time of the inspection (refer to Appendix E, Photographs 5 and 6). The WES representative stated that stormwater from many commercial establishments, including a mall, Happy Valley City Hall, and a large residential area, drains to this outfall. They further stated that the final outfall leading from the detention basin to Rock Creek is not monitored for dry-weather flow, and were unsure why none of the outfalls had not been identified as priority outfalls.

2.1.3. The EPA Inspection Team identified an illicit discharge, which was traced to vehicle washing activities, occurring at Clackamas Fire Station #1.

Schedule A.4.a.x of the Permit states, "In the case of a known illicit discharge that originates within the co-permittee's MS4 regulated area and that discharges directly to a storm sewer system or property under the jurisdiction of another municipality, the co-permittee must notify the affected municipality as soon as practicable, and at least within one working day of becoming aware of the discharge."

On December 18, 2014, members of WES staff and the EPA Inspection Team visited a priority outfall located southeast of Clackamas Fire Station #1, near intersection of SE Fuller Road and SE Causey Avenue. During the visit, the EPA Inspection Team noted members of Clackamas Fire Station #1 washing a fire engine on an impervious surface. The soapy wash water flowed to a concrete stormwater basin, which discharged directly to Phillips Creek (refer to Appendix E, Photographs 7 through 10). The EPA Inspection Team discussed the fire engine washing with the lieutenant of the Clackamas Fire Station

#1. He stated that the facility's designated wash bay contained a cloth liner that was difficult to maintain, so the crew had been washing the fire engines in the parking area.

The illicit discharge was explained to WES staff during the closing conference. WES staff explained that Clackamas Fire Station #1 was not under their jurisdiction, but they would contact the fire station immediately regarding ceasing washing fire engines outside of the designated wash bay.

2.2 Post-Construction Site Runoff

Schedule A.4.f of the Permit requires the City and CCSD#1 to continue to implement their post-construction stormwater pollutant and runoff control programs, as outlined in the SWMP. Pursuant to the Permit, pages 39–44 of the SWMP outlines the focus for controlling, managing, and treating runoff from new development and redevelopment.

The EPA Inspection Team discussed the use of low impact development (LID), green infrastructure (GI), and other equivalent design and construction approaches with WES representatives. The WES Development Review Supervisor stated that the Clackamas County does not require the use of LID, GI, or other equivalent design and construction approaches for new development and redevelopment. WES representatives explained that a large portion of Clackamas County is rural or suburban (including the CCSD#1 and City of Happy Valley service areas); therefore, the County has not experienced significant stormwater management challenges that accompany highly developed areas. Consequently, both CCSD#1 and the City appeared to favor the use of detention facilities and ponds to manage stormwater runoff. However, WES representatives explained that CCSD#1 and the City both promote the infiltration and injection of stormwater runoff as a management control, and have installed and maintained approximately 200 dry wells throughout the CCSD#1 service area.

2.2.1. The *WES Stormwater Management Development Guide* and other referenced documents did not include LID and GI approaches.

Schedule A.4.f.i.3 of the Permit states that the City and CCSD#1 shall "prioritize and include implementation of Low-Impact Development (LID), Green Infrastructure (GI) or equivalent design and construction approaches." In addition, Schedule A.4.f.iii.3 of the Permit requires the City and CCSD#1 to "develop or reference an enforceable post-construction stormwater quality management manual or equivalent document," which includes "applicable LID, GI or similar stormwater reduction approaches, including the practical use of these approaches."

The EPA Inspection Team formally requested the City's and CCSD#1's enforceable post-construction stormwater quality management manual or equivalent document. In response, WES representatives provided three documents to the EPA Inspection Team that are used for guidance for the installation, operation, and maintenance of post-construction stormwater management controls:

- *WES Stormwater Management Development Guide*, November 1, 2014.

- *CCSD#1 Stormwater Standards*, July 1, 2013.
- *CCSD#1 Rules and Regulations for Sanitary Sewer and Surface Water Management*, January 2013.

The EPA Inspection Team reviewed the three stormwater documents identified above as a component of the inspection. These documents did not discuss, prioritize, or include specific LID or GI approaches to stormwater management; however, they did appear to promote the use of infiltration as a management control for stormwater runoff. Section 5.3 of the CCSD#1 Stormwater Standards specifies requirements for stormwater infiltration and retention systems. Specifically, section 5.3 states, "Infiltration systems are required for all new developments and redevelopments to infiltrate all runoff from storm events up to one-half inch of rainfall in 24 hours." Best management practice (BMP) 16 in the SWMP states, "Infiltration facilities are required where soil conditions permit." BMP 17 in the SWMP explains that CCSD#1 had previously begun updating the CCSD#1 Stormwater Standards in 2009 to 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." BMP 17 identified a measurable goal of completing updates to the CCSD#1 Stormwater Standards and developing a post-construction guidance manual for developers by June 30, 2013.

WES previously developed multiple online stormwater management design tools for use by development engineers. According to the CCSD#1 Riverhealth Web page, WES "offers Stormwater Management Design Tools that incorporate Low Impact Development Approaches (LIDA) to mitigating the effects of stormwater runoff on local waterways. These tools provide new stormwater management options for the development community and will assist with site planning, facility design, and engineering method selection. The tools employ a user-friendly approach to design in order to facilitate the incorporation of LIDA into development plans." As part of these stormwater management design tools, WES has developed a BMP sizing tool, which helps development engineers size appropriate stormwater management control facilities based on pre- and post-development (redevelopment) site conditions. While these tools are available to the public on CCSD#1's Riverhealth Web page, neither CCSD#1 or WES requires the development community to use them.

If the City and CCSD#1 do not believe the use of LID or GI practices is necessary to manage stormwater runoff in the service areas, then they should include a rationale in the post-construction stormwater management documents (i.e., post-construction stormwater quality management manual) that explains why LID or GI is not prioritized or required for new development and redevelopment.

2.3 Pollution Prevention for Municipal Operations

Schedule A.4.g of the Permit requires the City and CCSD#1 to "continue to implement a program to reduce the discharge of pollutants to the MS4 from properties owned or operated by the co-permittee for which the permittee has authority, including, but not limited to, parks and open spaces, fleet and building maintenance facilities, transportation

systems and fire-fighting training facilities." Pursuant to the Permit, pages 45–53 of the SWMP plan outline BMP implementation for operation and maintenance of properties owned or operated by CCSD#1 and the City.

As previously stated, the City implements its own stormwater programs to comply with Permit requirements associated with pollution prevention for municipal operations; therefore, the City's compliance activities and efforts for those requirements are discussed separately from those implemented by WES on behalf of CCSD#1.

2.3.1. The City and CCSD#1 had not fully implemented their strategy to control the release of materials and pollutants from fire-fighting training activities to the MS4.

Schedule A.4.g.v of the Permit states that the co-permittees shall "implement a strategy to prevent or control the release of materials related to fire-fighting training activities." WES representatives explained to the EPA Inspection Team that Clackamas County Fire District #1 owned and operated a fire-fighting training facility in unincorporated Clackamas County, which is located within the CCSD#1 service area. The EPA Inspection Team discussed the fire-fighting training facility with WES representatives and conducted a field visit to the training facility on December 18, 2014 (refer to Appendix E, Photograph 11).

Clackamas Fire Training Facility – 15990 130th Avenue, Clackamas County, OR 97015

The EPA Inspection Team and WES representatives met with the Clackamas Fire District #1 Training Officer at the firefighting training facility to discuss facility operations and any pollution prevention practices implemented at the facility. The Training Officer explained that the facility was used to conduct various training exercises, including live fire training. He explained that three types of live fire training exercises are conducted at the fire tower: low water usage training, high water usage training, and foam usage training. Water and foam used at the fire tower during live fire training is received by four drains around the tower (refer to Appendix E, Photograph 12).

WES and Clackamas Fire District #1 representatives explained that in order to reduce foam discharges to the facility's receiving water, Carli Creek, the County had installed a flow diversion valve at the facility sometime around 2000. Prior to 2000, the four drains around the fire tower were connected solely to the CCSD#1 MS4, and flows were conveyed to Carli Creek. The flow diversion valve allowed non-stormwater flows that are received by the four fire tower drains to be conveyed into the CCSD#1 sanitary sewer system, instead of the MS4. WES and Clackamas Fire District #1 representatives explained that a standard operating procedure had been developed for the flow diversion valve; the five-step procedure was displayed on a sign posted above the flow diversion structure at the facility (refer to Appendix E, Photographs 13, 14, and 15). In addition, they stated that fire fighters at the facility are trained in the proper use of the flow diversion valve. When live fire training activities are not being conducted at the fire tower, the valve is positioned to drain into the MS4, to prevent stormwater discharges from entering the CCSD#1 sanitary sewer system.

During discussions with both the WES and Clackamas Fire District #1 representatives, the EPA Inspection Team observed the following with regard to pollution prevention at the firefighting training facility:

1. As stated by the Training Officer, the flow diversion valve is not switched from storm sewer to sanitary sewer during low-flow training operations, resulting in fire-fighting training water being discharged to the MS4. The Training Officer verified that low-flow training operations result in a discharge to the fire tower drains.
2. The Training Officer explained that the training facility has experienced multiple instances in the past when the flow diversion valve was not switched back from sanitary sewer to storm sewer after a training event, presenting the possibility of stormwater discharges to the sanitary sewer. It was unknown whether these failures to switch the flow diversion valve back to the storm sewer had resulted in a stormwater discharge to the CCSD#1 sanitary sewer. The WES Field Operations Supervisor explained the concern of stormwater discharges into the sanitary sewer system to the Training Officer.

2.3.2. CCSD#1 was not fully implementing its strategy to reduce the impact to stormwater runoff from its municipal facilities.

Schedule A.4.g.iii of the Permit states that the City and CCSD#1 shall "By July 1, 2013, inventory, assess, and implement a strategy to reduce the impact of stormwater runoff from municipal facilities that are used to treat, store or dispose municipal waste, such as yard, landscaping, or catch-basin cleaning waste, and are not already covered under a 1200 series NPDES, a DEQ solid waste permit, or other permit designed to reduce the discharge of pollutants."

The EPA Inspection Team formally requested the City's and CCSD#1's pollution prevention procedures for municipal facilities (refer to Appendix D, EPA Records Request, No. 35). In response, WES representatives provided a document to the EPA Inspection Team on December 18, 2014 titled "Strategy for qualifying Municipal Facilities owned/operated by the City of Happy Valley, Clackamas County, CCSD#1, and/or SWMACC which are also located in the City of Happy Valley, SWMACC, or CCSD#1," which was dated June 28, 2013 (refer to Appendix F, Exhibit 3). The EPA Inspection Team reviewed this document and compared it to the site conditions observed during the field visit to CCSD#1's Decant Facility.

CCSD#1 Decant Facility – Intersection of SE Jennifer Street and SE Evelyn Street; Clackamas County, OR 97015

The EPA Inspection Team visited CCSD#1's Decant Facility on December 18, 2014 as a component of the inspection. The EPA Inspection Team observed the following with regard to pollution prevention at the CCSD#1 Decant Facility.

The City's and CCSD#1's pollutant reduction strategy, dated June 28, 2013, stated the following for the CCSD#1 Decant Facility: "All liquid wastes drain into the public sanitary sewer system and the de-watered solids are hauled offsite for proper disposal."

However, during the site visit, the EPA Inspection Team observed evidence of a previous overflow to an adjacent pond, which has the ability to infiltrate into the ground or discharge to Cow Creek, a tributary of the Clackamas River.

WES representatives explained to the EPA Inspection Team that vacuum trucks and street sweeper vehicles are dewatered into an unlined pond (refer to Appendix E, Photographs 16–19) at the facility before the waste material is unloaded into the decant facility building for temporary storage. Wastewater from the dewatering activities is infiltrated into the ground surface of the unlined pond. The unlined pond was equipped with a discharge pipe (which had been plugged prior the inspection) to discharge the pond into nearby Cow Creek (refer to Appendix E, Photograph 19). It should be noted that the waste material storage area located inside the decant facility building was equipped with a drain that was connected to an adjacent sanitary pump station wet well (refer to Appendix E, Photographs 20–23).

WES representatives explained that the original intention of the facility was to dewater all vacuum and sweeper vehicles inside the decant facility building to allow excess wastewater from the water material to drain to the sanitary pump station wet well. However, it was determined that the pump station wet well was too small to accept all decant water from the vehicles. Furthermore, it should be noted that the decant facility building waste storage area was equipped with an emergency overflow drain, which was connected to the unlined pond (refer to Appendix E, Photographs 24–26). The EPA Inspection Team observed evidence of a previous overflow from the decant facility waste storage area into the unlined pond. Therefore, because decant water from the dewatering activities was being discharged directly into the unlined pond (either from direct dewatering activities or from the emergency overflow drain) and infiltrating into the ground (to waters of the state) and not into the sanitary sewer, the co-permittee was not fully implementing the pollutant reduction strategy document.

It should be noted that the pollutant reduction strategy document was developed after the 2012 modifications were made to the SWMP; therefore, the pollutant reduction strategy document is not referenced in the SWMP. If the co-permittees are using the pollutant reduction strategy document to fulfill the requirements of the Permit, then the SWMP should be modified to include reference to this document. Schedule D.5.i of the Permit states, “Adding BMPs, controls or requirements to the SWMP may be made at any time. The co-permittee must provide notification to the Department prior to the implementation, and submit a summary of such revisions to the Department in the subsequent annual report.”

2.3.3. The City was not fully implementing its strategy to reduce the impact to stormwater runoff from its municipal facilities.

As previously stated, the EPA Inspection Team reviewed the City’s and CCSD#1’s pollutant reduction strategy document and compared it to the site conditions observed during the field visit to the City’s Department of Public Works.

City of Happy Valley Department of Public Works Facility – 13910 Ridgecrest Road; Happy Valley, OR 97086

The EPA Inspection Team visited the City's Department of Public Works Facility on December 18, 2014 (refer to Appendix E, Photograph 27). The EPA Inspection Team observed the following with regard to pollution prevention at the City's Department of Public Works Facility.

The City and CCSD#1's pollutant reduction strategy, dated June 28, 2013, for the City of Happy Valley Department of Public Works Facility did not correctly identify all pollutant sources identified at the facility during the site visit. Specifically, the strategy contains a section titled "Other items stored at this facility," which identified a 1,500-gallon tank of gasoline, a 300-gallon tank of diesel, sand for road traction, and bark chips for landscaping. During the inspection, the EPA Inspection Team identified a 1,000-gallon tank of unleaded gasoline, a 1,000-gallon tank of diesel fuel, and a 300-gallon tank of non-ethanol fuel (refer to Appendix E, Photograph 28). These quantities of fuel were not consistent with what was identified in the City's pollutant reduction strategy document. In addition, the EPA Inspection Team observed four 250-gallon totes of magnesium chloride at the facility during the inspection (refer to Appendix E, Photographs 29 and 30). The totes were stored outside on the impervious surface near the facility office without secondary containment or BMPs. Furthermore, the EPA Inspection Team observed containers of new motor oil, used motor oil, and pesticides at the facility; these substances were not identified in the pollutant reduction strategy document.

The City and CCSD#1 pollutant reduction strategy, dated June 28, 2013, for the City of Happy Valley Public Works Facility did not correctly identify all municipal waste sources identified at the facility during the facility inspection. Specifically, the strategy contains a section titled "Municipal Waste," which identified three sources of municipal wastes at the facility: street sweepings, residential leaf waste from public drop-off events, and vegetation from park landscaping activities. During the inspection, the EPA Inspection Team was informed that City employees wash vehicles at the facility on a designated gravel surface (refer to Appendix E, Photograph 31). The pollutant reduction strategy document did not identify vehicle wash water as a liquid waste at the facility. In addition, the EPA Inspection Team observed that the vehicle wash area was not equipped with BMPs and that vehicle wash water (and associated debris, soaps, etc.) was allowed to infiltrate into the gravel surface (refer to Appendix E, Photograph 32).

The City and CCSD#1 pollutant reduction strategy, dated June 28, 2013, for the City of Happy Valley Public Works Facility did not identify all BMPs used at the facility to treat stormwater runoff. Specifically, the strategy document contained a section titled "Storm Sewer System," which identified a vegetated swale that is used to receive and treat stormwater runoff from the facility prior to discharging it to Mt. Scott Creek, a tributary of Kellogg Creek. The strategy did not identify BMPs implemented at the facility's two storm drains. The City's Public Works Director explained that the facility's two storm drains were equipped with lynch-style catch basins to remove solids and oils from stormwater runoff. The EPA Inspection Team observed multiple petroleum stains on the outdoor impervious surfaces, and petroleum product was observed mobilizing from these

stains into downgradient storm drain catch basins (refer to Appendix E, Photographs 33, 34, and 35).

2.4 Stormwater Management Facilities Operation and Maintenance Activities

Schedule A.4.h.ii of the Permit requires the City and CCSD#1 to "implement a strategy that guides the long-term maintenance and management of all co-permittee-owned and identified privately-owned stormwater structural facilities." Pursuant to the Permit, pages 39–44 and pages 54–59 of the SWMP outline BMP implementation for long-term operation and maintenance of co-permittee-owned and privately owned stormwater management facilities. It should be noted that WES is responsible for the implementation of this Permit requirement, on behalf of CCSD#1 and the City.

CCSD#1 has identified two types of private stormwater facilities: private residential (e.g., subdivisions and partitions) and private non-residential (e.g., commercial and industrial).

Private Residential Controls

BMP 16 of the SWMP states, "Properties with private storm systems for new residential developments are required as part of the development approval process to inspect and maintain their storm system themselves (e.g. through a Homeowners Association) or to sign an agreement that they will have the District [CCSD#1] staff maintain their systems on their behalf in exchange for a monthly on-site management fee." To ensure that storm drain systems and controls are adequately maintained in residential areas, such as subdivisions, CCSD#1 has entered into maintenance agreements with individual single-family-home subdivisions that contain private residential stormwater controls. These maintenance agreements specify that CCSD#1 (WES on behalf of CCSD#1) will perform all maintenance activities on private storm drain systems and controls for an additional expense to be added to the surface water service fee already incurred by residents of CCSD#1 and the City. CCSD#1 refers to these private stormwater controls that are maintained by CCSD#1 as "public" controls (since they are publicly maintained).

BMP 16 of the SWMP also states, "All subdivisions and partitions must include a storm water management plan." The EPA Inspection Team formally requested the stormwater management plan for the Oregon Trail subdivision visited as a component of the inspection. The WES representatives stated that all subdivisions that have entered into such maintenance agreements with CCSD#1 were not required to develop a stormwater management plan, but rather, are covered under the CCSD#1's and City's joint SWMP. In addition, they stated that every subdivision within the CCSD#1 and City service area have entered into such agreement with CCSD#1. The co-permittees are reminded that their SWMP requires all subdivisions to develop a stormwater management plan; therefore, in the event that a subdivision does not enter into an agreement with CCSD#1, the subdivision must develop and submit a stormwater management plan to CCSD#1.

The EPA Inspection Team conducted field visits at two private residential (public) controls as a component of the inspection. The controls are summarized in Table 2 below.

Table 2. Private Residential (Public) Controls

Location	Control Type
Oregon Trail Subdivision SE Oregon Trail Drive Clackamas County, OR 97015	1 regional detention pond (with diversion structure and overflow field), CDS Vortex Separator, and 1 small detention pond
Eagle Landing Golf Course and Subdivision Monterey Avenue and SE High Creek Road Clackamas County, OR 97086	Rock-lined infiltration and velocity reduction swale

Oregon Trail Subdivision Detention Pond, Diversion Structure, Overflow Field, and CDS Vortex Separator

The EPA Inspection Team visited the private residential stormwater control located at the Oregon Trail subdivision off SE Oregon Trail Road on December 17, 2014. WES representatives did not provide a copy of the maintenance agreement between the subdivision and CCSD#1 for inspection and maintenance for the Oregon Trail subdivision because they could not locate the agreement at the time of the inspection. However, WES representatives explained that the maintenance agreement language was the same for all maintenance agreements between CCSD#1 and subdivisions, and they were able to locate and provide a maintenance agreement between CCSD#1 and the Hidden Falls subdivision, dated May 6, 2013 (refer to Appendix F, Exhibit 4). The maintenance agreement specifies that CCSD#1 is responsible for conducting inspections and maintenance for the storm drain system and structures located within the subdivision, and outlines maintenance activities. The EPA Inspection Team observed that the Oregon Trail subdivision detention pond, diversion structure with overflow field, and CDS vortex separator appeared to have been routinely maintained (refer to Appendix E, Photographs 36 through 40). The WES Field Operations Supervisor present during the site visit to the Oregon Trails subdivision stated, during the site visit, that the release valve for the 8-inch emergency release hole at the detention pond outlet structure was stuck (refer to Appendix E, Photograph 41).

Eagle Landing Golf Course and Subdivision Rock-lined Infiltration and Velocity Reduction Swale

The EPA Inspection Team visited the private residential stormwater control located at the Eagle Landing Golf Course located near the intersection of Monterey Avenue and SE High Creek Road on December 17, 2014. WES representatives explained that the developer had installed the rock-lined swale to promote infiltration and to reduce runoff velocity from the subdivision to prevent downstream impacts to the unnamed receiving creek and ultimately to Mt. Scott Creek (refer to Appendix E, Photograph 42). The rock-lined swale appeared to be adequately maintained at the time of the inspection; however, the EPA Inspection Team and WES representative were unable to locate the rock-lined swale's drain outlet pipe into the unnamed receiving creek.

Private Non-residential Controls

WES representatives explained that CCSD#1 does not enter into maintenance agreements with privately owned commercial and industrial properties that contain private storm drain systems and controls. BMP 16 of the SWMP states, "Private storm systems for new non-residential development and redevelopment are required as part of the development approval process to sign an agreement which requires the control owner to inspect, maintain and if needed, clean their storm systems annually. Further, they must report on these activities to the District annually." Private stormwater controls that are not maintained by CCSD#1 are referred to as "private" controls.

For these private, non-residential stormwater facilities, WES has developed a Storm Drain Cleaning Assistance Program (SCAP) to assist private control owners with maintaining their stormwater controls and reporting maintenance activities to CCSD#1. The SCAP provides multiple services to private stormwater control owners such as:

- Soliciting price quotes from local vendors for cleaning and maintenance activities.
- Notifying the private stormwater control owner of maintenance responsibilities and reporting procedures.
- Notifying interested vendors of all private stormwater control owners who participate in the program.
- Tracking the number of annual reports received by CCSD#1 from private stormwater control owners.
- Identifying the number of facilities maintained by vendors and the types of structures maintained.

The Internet link to the CCSD#1 Web page to sign up for the SCAP is:
http://www.riverhealth.org/stormdrain-cleaning-assistance-program-scap

Private stormwater control owners who participate in the SCAP, as well as those who do not use the service of the program, must report all inspection and maintenance activities conducted for their stormwater structures and controls annually to CCSD#1. WES has developed an online reporting form to report these types of activities; the Internet link is:
http://www.riverhealth.org/annual-stormdrain-structure-maintenance-report

2.4.1. The City and CCSD#1 were not verifying that all private, non-residential stormwater controls were being adequately operated and maintained by the private owner.

As noted above, Schedule A.4.h.ii of the Permit requires the City and CCSD#1 to "implement a strategy that guides the long-term maintenance and management of all co-permittee-owned and identified privately-owned stormwater structural facilities." BMP 16 of the SWMP specifies as a measurable goal that CCSD#1 will "annually, check in on compliance with terms of private facility maintenance agreements."

The WES representatives explained that the WES provides a letter annually to all known private, non-residential stormwater control owners reminding them of the control

cleaning and reporting requirements (refer to Appendix F, Exhibit 5). According to the Annual Report, CCSD#1 had recorded a total of 139 maintenance agreements from private, non-residential stormwater control owners; however, CCSD#1 only received 35 annual reports from control owners during this reporting period.

Although CCSD#1 had developed a strategy to ensure long-term operation and maintenance of both co-permittee-owned and privately owned stormwater management facilities, it did not appear that CCSD#1 was verifying that all private non-residential controls were being adequately maintained by the owners. In addition, it did not appear that CCSD#1 had procedures in place to enforce maintenance agreements and certain components of the SWMP. Specifically, CCSD#1 did not appear to be identifying private control owners who did not conduct annual inspection and maintenance of their stormwater controls or report such activities to CCSD#1 annually and conducting enforcement activities against those owners.

As a component of the inspection, the EPA Inspection Team visited three private, non-residential facilities equipped with post-construction stormwater management controls, which are summarized in Table 3, on the next page.

Table 3. Private Non-Residential Controls

Location	Control Type
Sunnyside Library 13793 Southeast Sieben Park Way Clackamas County, OR 97015	1 detention pond and 1 porous pavement parking lot
Clackamas Promenade Shopping Center Tax Lot 3200 8658 Southeast Sunnyside Road Clackamas County, OR 97015	2 detention ponds, 2 catch basins, 1 outlet control manhole
Portfolio Financial Services (previously Telemark, Inc.) 7303 SE Lake Road Clackamas County, OR 97267	1 detention pond

The EPA Inspection Team did not observe anything of note at the Sunnyside Library

Clackamas Promenade Shopping Center Detention Ponds

The EPA Inspection Team visited the private non-residential stormwater control located at the Clackamas Promenade Shopping Center on December 17, 2014. WES representatives provided the EPA Inspection Team with the Clackamas Promenade Shopping Center maintenance agreement, signed by the property owner, State of California Public Employees' Retirement System, on June 16, 1997 (date stamped by Clackamas County Department of Utilities on June 20, 1997) (refer to Appendix F, Exhibit 6). The agreement specifies that the property owner agrees to inspect and maintain two storm drain catch basins, one detention pond, and one outlet control manhole annually. The EPA Inspection Team observed site conditions at the Clackamas Promenade Shopping Center detention ponds that were not indicative that the ponds had

been inspected or maintained within the past year. Specifically, the EPA Inspection Team observed that the pond was overgrown with vegetation and contained sediment and trash (refer to Appendix E, Photographs 43, 44, and 45). It was unknown by the WES representatives if CCSD#1 had received annual reports for the Clackamas Promenade Shopping Center.

Portfolio Financial Services Detention Pond

The EPA Inspection Team visited the private non-residential stormwater control located at the Portfolio Financial Services office building (previously occupied by Telemark, Inc.) on December 18, 2014. A maintenance agreement for this control was not provided to the EPA Inspection Team; however, WES representatives provided a copy of the pond's as-built plan. The EPA Inspection Team observed site conditions at the Portfolio Financial Services detention pond that were not indicative that the pond had not been recently inspected or maintained. Specifically, the EPA Inspection Team observed that the pond's drain was completely covered by vegetation and sediment and could not be located during the site visit (refer to Appendix E, Photographs 46 through 50). In addition, multiple trees, shrubs, and boulders were observed inside the pond structure; these items were not identified on the as-built plan (refer to Appendix E, Photographs 51 and 52). It was unclear if this additional vegetation and rock would impact the functionality of the pond.

Appendix A
Clackamas County Group NPDES MS4 Discharge Permit

v. Identify response procedures to investigate portions of the MS4 that, based on the results of general observations, field screening, laboratory analysis or other relevant information, such as a complaint or referral, indicates the likely presence of an illicit discharge. The response procedures must reflect the goal to eliminate the illicit discharge in an expeditious manner, as specified in subsection vii. below.

vi. Maintain a system for documenting illicit discharge complaints or referrals, and suspected illicit discharge investigation activities.

vii. Once the source of an illicit discharge is determined, the co-permittee must take appropriate action to eliminate the illicit discharges, including an initial evaluation of the feasibility to eliminate the discharge, within 5 working days. If the co-permittee determines that the elimination of the illicit discharge will take more than 15 working days due to technical, logistical or other reasonable issues, the co-permittee must develop and implement an action plan to eliminate the illicit discharge in an expeditious manner. The action plan must be completed within 20 working days of determining the source of an illicit discharge. In lieu of developing and implementing an individual action plan for common types of illicit discharges, the co-permittee may document and implement response procedures, a response plan or similar document. The action plan, response procedures, response plan or similar document must include a timeframe for elimination of the illicit discharge as soon as practicable.

viii. Describe and implement procedures to prevent, contain, respond to and mitigate spills that may discharge into the MS4. Spills, or other similar illicit discharges, that may endanger human health or the environment must be reported in accordance with all applicable federal and state laws, including proper notification to the Oregon Emergency Response System.

ix. In the case of a known illicit discharge that originates within the co-permittee's MS4 regulated area and that discharges directly to a storm sewer system or property under the jurisdiction of another municipality, the co-permittee must notify the affected municipality as soon as practicable, and at least within one working day of becoming aware of the discharge.

x. In the case of a known illicit discharge that is identified within the co-permittee's MS4 regulated area, but is determined to originate from a contributing storm sewer system or property under the jurisdiction of another municipality, the co-permittee must notify the contributing municipality or municipality with jurisdiction as soon as practicable, and at least within one working day of identifying the illicit discharge.

xi. Maintain maps identifying known co-permittee-owned MS4 outfalls discharging to waters of the State. The dry-weather screening priority locations must be specifically identified on maps by November 1, 2012. If the co-permittee identifies the need to modify these maps, the maps must be updated in digital or hard-copy within six months of identification.

xii. Unless the following non-stormwater discharges are identified in a particular case as a significant source of pollutants to waters of the State by the permittee or the Department, they are not considered illicit discharges and are authorized by this permit: water line flushing; landscape irrigation; diverted stream flows; rising ground waters; uncontaminated groundwater infiltration; uncontaminated pumped ground water; discharges from potable water sources; start up flushing of groundwater wells; 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; charity car washing; flows from riparian habitats and wetlands; dechlorinated swimming pool discharges; street wash waters; discharges of treated water from investigation, removal and remedial actions selected or approved by the Department pursuant to Oregon Revised Statute (ORS) Chapter 465; and, discharges or flows from emergency fire fighting activities. If any of these non-stormwater discharges under the co-permittee's jurisdiction is a significant source of pollutants, the permittee must develop and require implementation of appropriate BMPs to reduce the discharge of pollutants associated with the source.

b. **Industrial and Commercial Facilities**: The co-permittee must continue to implement a program to reduce pollutants in stormwater discharges to the MS4 from facilities the co-permittee identified as being subject to a Department-issued industrial stormwater NPDES permit, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986, and facilities that have been identified as contributing a significant pollutant load to the MS4. The co-permittee must:

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

ii. Within 30 days after the facility is identified, notify the industrial facility and the Department that an industrial facility is potentially subject to an industrial stormwater NPDES permit.

iii. Implement an updated strategy to reduce pollutants in stormwater discharges to the MS4 from industrial and commercial facilities where site-specific information has identified a discharge as a source that contributes a significant pollutant load to the MS4. The strategy must include a description of the rationale for identifying commercial and industrial facilities as a significant contributor, and establish the priorities and procedures for inspection of and implementation of stormwater control measures. This strategy must be implemented by July 1, 2013, and applied within one calendar year from the date a new source contributing a significant pollutant load to the MS4 has been identified.

c. **Construction Site Runoff Control**: Co-permittees must continue to implement a program to reduce pollutants in stormwater runoff to the MS4 from construction activities. The program must:

i. Include ordinances or other enforceable regulatory mechanisms that require erosion prevention and sediment controls to be designed, implemented, and maintained to prevent adverse impacts to water quality and minimize the transport of construction-related contaminants to waters of the State. By November 1, 2014, the construction site runoff control program ordinances or other enforceable regulatory mechanism must apply to construction activities that result in a land disturbance of 1,000 square feet or greater.

ii. Require construction site operators to develop erosion prevention and sediment control site plans, and to implement and to maintain effective erosion prevention and sediment control best management practices.

iii. Require construction site operators to prevent or control non-stormwater waste that may cause adverse impacts to water quality, such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste.

iv. Describe site plan review procedures to ensure that stormwater BMPs are appropriate and address the construction activities being proposed. At a minimum, construction site erosion prevention and sediment control plans for sites disturbing one acre or greater must be consistent with the substantive requirements of the State of Oregon's 1200-C permit site erosion prevention and sediment control plans.

v. Co-permittees must perform on-site inspections in accordance with documented procedures and criteria to ensure that the approved erosion prevention and sediment control plan is properly implemented. Inspections of construction sites must include disturbed areas of the site, material and waste storage areas, stockpile areas, construction site entrances and exits, sensitive areas, discharge locations to the MS4, and, if appropriate, discharge locations to receiving waters. Inspections must be documented, including photographs and monitoring results as appropriate.

vi. Describe in an enforcement response plan or similar document the enforcement response procedures the co-permittee will implement. The enforcement response procedures must ensure construction activities are in compliance with the ordinances or other regulatory mechanisms.

d. **Education and Outreach:** Co-permittees must implement an education and outreach program designed to achieve measurable goals based on target audiences, specific stormwater quality issues in the community, or identified pollutants of concern. The program must:

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 strategy must identify targeted pollutants of concern, the targeted audience, specific education activities, and the entity or individual responsible for implementation. The public education and outreach strategy may incorporate cooperative efforts with other MS4 regulated permittees or efforts by other groups or

organizations provided a mechanism is developed and implemented to track the public education and outreach efforts within the MS4 regulated area and the results of such efforts are reported annually.

ii. Provide educational materials to the community or conduct equivalent outreach activities describing the impacts of stormwater discharges on water bodies and the steps or actions the public can take to reduce pollutants in stormwater runoff.

iii. Provide public education on the proper use and disposal of pesticides, herbicides, fertilizers and other household chemicals.

iv. Provide public education on the proper operation and maintenance of privately-owned or operated stormwater quality management facilities.

v. Provide notice to construction site operators concerning where education and training to meet erosion prevention and sediment control requirements can be obtained.

vi. Conduct or participate in an effectiveness evaluation to measure the success of public education activities during the term of this permit. The effectiveness evaluation must focus on assessing changes in targeted behaviors. The results of the effectiveness evaluation must be used in the adaptive management of the education and outreach program, and reported to the Department no later than July 1, 2015.

vii. Include training for co-permittee 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.

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

e. **Public Involvement and Participation:** Co-permittees must implement 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 approach must include provisions for receiving and considering public comments on the monitoring plan due to the Department by September 1, 2012, annual reports, SWMP revisions, and the TMDL pollutant load reduction benchmark development.

f. **Post-Construction Site Runoff:** Co-permittees must continue to implement their post-construction stormwater pollutant and runoff control program.

i. By November 1, 2014, the post-construction stormwater pollutant and runoff control program applicable to new development and redevelopment projects that create or replace impervious surfaces must meet the conditions described in this subsection. The minimum project threshold applicable to each co-permittee post-construction stormwater pollutant and runoff control program is identified in Table A-1. The post-construction stormwater site runoff permit conditions are as follows:

1) Incorporate site-specific management practices that target natural surface or predevelopment hydrologic functions as much as practicable. The site-specific management practices should optimize on-site retention based on the site conditions;

2) Reduce site specific post-development stormwater runoff volume, duration and rates of discharges to the municipal separate storm sewer system (MS4) to minimize hydrological and water quality impacts from impervious surfaces;

3) Prioritize and include implementation of 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.

TABLE A-1
Post-Construction Minimum Thresholds – Impervious Surface Area

Co-Permittee	Minimum Project Threshold (ft^2)
Clackamas County*	5,000
City of Gladstone	5,000
City of Happy Valley	5,000
City of Johnson City	5,000
City of Lake Oswego	3,000
City of Milwaukie	1,000
City of Oregon City	5,000
City of Rivergrove	5,000
City of West Linn	1,000
City of Wilsonville	5,000
Oak Lodge Sanitary District	1,000

*Includes jurisdictional areas within CCSD#1, SWMACC, and jurisdictional areas with post-construction program oversight by the Clackamas County Department of Transportation and Development.

ii. The co-permittee must identify, and where practicable, minimize or eliminate ordinance, code and development standard barriers within their legal authority that inhibit design and implementation techniques intended to minimize impervious surfaces and reduce stormwater runoff (e.g., Low Impact Development, Green Infrastructure). Such modifications to ordinance, code and development standards are only required to the extent they are permitted under federal and state laws. The co-permittee must review ordinance, code and development standards for modification, minimization or elimination, and appropriately modify ordinance, code or development standard barriers

by November 1, 2014. If an ordinance, code or development standard barrier is identified at any time subsequent to November 1, 2014, the applicable ordinance, code or development standard must be modified within three years.

iii. To reduce pollutants and mitigate the volume, duration, time of concentration and rate of stormwater runoff, the co-permittee must develop or reference an enforceable post-construction stormwater quality management manual or equivalent document by November 1, 2014 that, at a minimum, includes the following:

1) A minimum threshold for triggering the requirement for post-construction stormwater management control and the rationale for the threshold.

2) A defined design storm or 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.

5) BMPs, including a description of the following:
   a. Site-specific design requirements;
   b. Design requirements that do not inhibit maintenance; and,
   c. Conditions where the BMP applies.

6) Pollutant removal efficiency performance goals that maximize the reduction in discharge of pollutants.

iv. The co-permittee must review, approve and verify proper implementation of post-construction site plans for new development and redevelopment projects applicable to this section.

v. Where a new development or redevelopment project site is characterized by factors limiting use of on-site stormwater management methods to achieve the post-construction site runoff performance standards, such as high water table, shallow bedrock, poorly-drained or low permeable soils, contaminated soils, steep slopes or other constraints, the Post-Construction Stormwater Management program must require equivalent pollutant reduction measures, such as off-site stormwater quality management. Off-site stormwater quality management may include off-site mitigation, such as using low impact development principles in the construction of a structural stormwater facility within the sub-watershed, a stormwater quality structural facility mitigation bank or a payment-in-lieu program.

vi. A description of the inspection and enforcement response procedures the co-permittee will follow when addressing project compliance issues with the enforceable post-construction stormwater management performance standards.

g. **Pollution Prevention for Municipal Operations:** The co-permittee must continue to implement a program to reduce the discharge of pollutants to the MS4 from properties owned or operated by the co-permittee for which the co-permittee has authority, including, but not limited to, parks and open spaces, fleet and building maintenance facilities, transportation systems and fire-fighting training facilities. The co-permittee must conduct, at a minimum, the following program activities:

   i. Operate and maintain public streets, roads and highways in a manner designed to minimize the discharge of stormwater pollutants to the MS4, including pollutants discharged as a result of deicing activities;

   ii. Implement a management program to control and minimize the use and application of pesticides, herbicides and fertilizers on co-permittee-owned properties;

   iii. By July 1, 2013, inventory, assess, and implement a strategy to reduce the impact of stormwater runoff from municipal facilities that are used to treat, store or dispose municipal waste, such as yard, landscaping, or catch-basin cleaning waste, and are not already covered under a 1200 series NPDES, a DEQ solid waste permit, or other permit designed to reduce the discharge of pollutants;

   iv. Limit infiltration of seepage from the municipal sanitary sewer system to the MS4;

   v. Implement a strategy to prevent or control the release of materials related to fire-fighting training activities; and,

   vi. Assess co-permittee flood control projects to identify potential impacts on the water quality of receiving water bodies and determine the feasibility of retrofitting structural flood control devices for additional stormwater pollutant removal. The results of this assessment must be incorporated and considered along with the results of the Stormwater Retrofit Assessment required by this permit.

h. **Stormwater Management Facilities Operation and Maintenance Activities:**

   i. By July 1, 2013, the co-permittee must inventory and map stormwater management facilities and controls, and implement a program to verify that stormwater management facilities and controls are inspected, operated and maintained for effective pollutant removal, infiltration and flow control. At a minimum, the program must include the following:

      1. Legal authority to inspect and require effective operation and maintenance;

      2. A strategy to inventory and map public and private stormwater management facilities as provided under Schedule A.4.h.ii.; and,

      3. Public and private stormwater facility inspection and maintenance requirements for stormwater management facilities that have been inventoried and mapped as provided

under Schedule A.4.h.ii.

ii. As part of the Stormwater Management Facilities Inspection and Maintenance program, the co-permittee must implement a strategy that guides the long-term maintenance and management of all co-permittee-owned and identified privately-owned stormwater structural facilities. At a minimum, the strategy must describe the following:

1. Co-permittee-owned or operated stormwater management facilities

a. Inventory and mapping process;

b. Inspection and maintenance schedule;

c. Inspection, operation and maintenance criteria and priorities;

d. Description of inspector type and staff position or title; and,

e. Inspection and maintenance tracking mechanisms.

2. Privately-owned or operated stormwater management facilities

a. Procedures for and types of stormwater facilities that will be inventoried and mapped. At a minimum, the inventory and mapping must include the following:

i. Private stormwater management facilities for new development and redevelopment projects constructed under the co-permittee's post-construction management manual or equivalent document after January 15, 2012;

ii. Private stormwater management facilities identified by the co-permittee and used to estimate the pollutant load reduction as part of the TMDL benchmark evaluation; and,

iii. Any major private stormwater management facilities or structural controls.

b. Inspection criteria, rationale, priorities, frequency and procedures for inspection of private stormwater facilities that have been inventoried and mapped;

c. Required training or qualifications to inspect private stormwater facilities;

d. Reporting requirements; and,

e. Inspection and maintenance tracking mechanism.

5. **Hydromodification Assessment:** The co-permittee must conduct an initial hydromodification assessment and submit a report by July 1, 2015 that examines the hydromodification impacts related to the co-permittee's MS4 discharges, including erosion, sedimentation, and alteration to stormwater flow, volume and duration that may cause or contribute to water quality degradation. The report shall describe existing efforts and proposed actions the co-permittee has identified to address the following objectives:

a. Collect and maintain information that will inform future stormwater management decisions

related to hydromodification based on local conditions and needs;

b. Identify or develop strategies to address hydromodification information or data gaps related to waterbodies within the co-permittee's jurisdiction;

c. Identify strategies and priorities for preventing or reducing hydromodification impacts related to the co-permittee's MS4 discharges; and,

d. Identify or develop effective tools to reduce hydromodification.

6. **Stormwater Retrofit Strategy Development:** The co-permittee must develop a stormwater quality retrofit strategy identified in a plan that applies to developed areas identified by the co-permittee as impacting water quality and that are underserved or lacking stormwater quality controls.

   a. The stormwater retrofit strategy must be based on a co-permittee-defined set of stormwater quality retrofit objectives and a comprehensive evaluation of a range of stormwater quality retrofit control measures and their appropriate use. The co-permittee-defined objectives must incorporate progress towards applicable TMDL wasteload allocations. Development of the stormwater retrofit strategy must allow for public comment and consider public input.

   b. The co-permittee must develop and submit a stormwater retrofit plan to the Department by July 1, 2015 that the co-permittee will use to guide the implementation of its stormwater retrofit strategy. The stormwater retrofit plan must describe or reference the following:

      i. Stormwater retrofit strategy statement and summary, including objectives and rationale;

      ii. Summary of current stormwater retrofit control measures being implemented, and current estimate of annual program resources directed towards stormwater retrofits;

      iii. Identification of developed areas or land uses impacting water quality that are high priority retrofit areas;

      iv. Consideration of new stormwater control measures;

      v. Preferred retrofit structural control measures, including rationale;

      vi. A retrofit control measure project or approach priority list, including rationale, identification and map of potential stormwater retrofit locations where appropriate, and an estimated timeline and cost for implementation of each project or approach.

   c. By July 1, 2014, each co-permittee must identify one stormwater quality improvement project, at a minimum, to be initiated, constructed or implemented during the permit term. The project must target the reduction of applicable TMDL pollutant parameters. The project must be associated with a Capital Improvement Project or other municipal retrofit project or strategy.

7. **Implementation Schedule:** The following implementation schedule provides a summary of due dates for the new permit conditions identified in Schedule A.

PERMIT CONDITION	SUMMARY OF IMPLEMENTATION SCHEDULE ACTIVITIES	DUE DATE
Illicit Discharge Detection and Elimination – A.4.a.	1. Document enforcement response procedures	November 1, 2012
	2. Develop or identify pollutant parameter action levels	November 1, 2012
	3. Identify and map dry-weather screening priority locations	November 1, 2012
Industrial and Commercial Facilities – A.4.b	1. Implement industrial and commercial facility inspection and stormwater control program	July 1, 2013
Education and Outreach – A.4.d.	1. Conduct or participate in effectiveness evaluation	July 1, 2015
Post-Construction Site Runoff – A.4.f.	1. Implement updated post-construction site runoff program	November 1, 2014
Pollution Prevention for Municipal Operations – A.4.g.	1. Inventory and assess municipal operations	July 1, 2013
Structural Stormwater Controls Operation and Maintenance Activities – A.4.h.	1. Implement structural stormwater controls operation and maintenance program	July 1, 2013
Hydromodification Assessment – A.5.	1. Conduct hydromodification assessment and submit report	July 1, 2015
Stormwater Retrofit Strategy Development – A.6.	1. Develop stormwater retrofit strategy and submit stormwater retrofit plan	July 1, 2015
	2. Identify stormwater quality improvement project	July 1, 2014
	3. Construct or implement stormwater quality improvement project	Permit expiration date

SCHEDULE B
Monitoring and Reporting Requirements

1. **MONITORING PROGRAM** - Each co-permittee must continue to implement a monitoring program to support adaptive stormwater management and the evaluation of stormwater management program effectiveness in reducing the discharge of pollutants from the MS4.

   a. The monitoring program must incorporate the following objectives:

      i. Evaluate the source(s) of the 2004/2006 303(d) listed pollutants applicable to the co-permittee's permit area;

      ii. Evaluate the effectiveness of Best Management Practices (BMPs) in order to help determine BMP implementation priorities;

      iii. Characterize stormwater based on land use type, seasonality, geography or other catchment characteristics;

      iv. Evaluate status and long-term trends in receiving waters associated with MS4 stormwater discharges;

      v. Assess the chemical, biological, and physical effects of MS4 stormwater discharges on receiving waters; and,

      vi. Assess progress towards meeting TMDL pollutant load reduction benchmarks.

   b. The monitoring program must include environmental monitoring that incorporates the requirements identified in Table B-1. The requirements in Table B-1 become effective with the approval of the monitoring plan in accordance with Schedule B.2.d., and no later than October 1, 2012.

Table B-1 - Gladstone Environmental Monitoring			
Monitoring Type	**Monitoring Location(s)**	**Monitoring Frequency**	**Pollutant Parameter Analyte(s)**
Instream Monitoring	One (1) site	Three (3) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Instream Biological Monitoring	Conduct or contribute to an instream biological monitoring project/task.		
Pesticide Monitoring	Conduct or contribute to a pesticide stormwater characterization monitoring or instream pesticide monitoring project/task. The pesticide pollutant parameters that must be considered for purposes of this requirement include any pesticides currently used by the City of Gladstone within the jurisdictional areas and the following: Insecticides: Bifenthrin, Cypermethrin or Permethrin, Imidacloprid, Fipronil, Malathion, Carbaryl; Herbicides: Triclopyr, 2,4-D, Glyphosate & degradate (AMPA), Trifluaralin, Pendimethalin; and, Fungicides: Chlorothalonil, Propiconazole, Myclobutanil		

Special Conditions:
1) The monitoring frequency reflects the required number of sample events per monitoring location.
2) The Instream Biological monitoring must follow a generally accepted biological monitoring methodology (e.g., DEQ Benthic Macroinvertebrate Protocol for Wadeable Rivers and Streams). The methodology must be documented or referenced in the monitoring plan.

Pollutant parameter(s) identified in each analyte category in Table B-1 are as follows:

Field	Conventional	Nutrients	Metals (Total Recoverable & Dissolved)
Dissolved Oxygen	*Escherichia coli* (E. coli)	Nitrate (NO_3)	Copper
pH	Hardness	Ammonia Nitrogen (NH_3-N)	Lead
Temperature	Biochemical Oxygen Demand (BOD_5)	Total Phosphorus (TP)	Zinc
Conductivity	Total Suspended Solids (TSS)	Ortho-Phosphorus (O-PO_4)	
	Total Dissolved Solids (TDS)		
	Volatile Solids (VS)		

Table B-1 – Johnson City Environmental Monitoring			
Monitoring Type	**Monitoring Location(s)**	**Monitoring Frequency**	**Pollutant Parameter Analyte(s)**
Instream Monitoring	One (1) Site	Five (5) events/permit term	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients

Pollutant parameter(s) identified in each analyte category in Table B-1 are as follows:

Field	Conventional	Nutrients	Metals (Total Recoverable & Dissolved)
Dissolved Oxygen pH Temperature Conductivity	*Escherichia coli* (E. coli) Hardness Biochemical Oxygen Demand (BOD_5) Total Suspended Solids (TSS) Total Dissolved Solids (TDS) Volatile Solids (VS)	Nitrate (NO_3) Ammonia Nitrogen (NH_3-N) Total Phosphorus (TP) Ortho-Phosphorus (O-PO_4)	Copper Lead Zinc

Table B-1 – Lake Oswego Environmental Monitoring			
Monitoring Type	**Monitoring Location(s)**	**Monitoring Frequency**	**Pollutant Parameter Analyte(s)**
Instream Monitoring	Seven (7) monitoring sites	Twelve (12) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Stormwater Monitoring – Wet Weather	Two (2) sites	Two (2) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients; Flow
Stormwater Monitoring - Mercury	One (1) site	See Special Condition #3	Mercury (Total & Dissolved)
Instream Biological Monitoring	Ten (10) monitoring sites	One (1) event/permit term	N/A
Pesticide Monitoring	Conduct or contribute to a pesticide stormwater characterization monitoring or instream pesticide monitoring project/task. The pesticide pollutant parameters that must be considered for purposes of this requirement include any pesticides currently used by the City of Lake Oswego within the jurisdictional areas and the following: Insecticides: Bifenthrin, Cypermethrin or Permethrin, Imidacloprid, Fipronil, Malathion, Carbaryl; Herbicides: Triclopyr, 2,4-D, Glyphosate & degradate (AMPA), Trifluaralin, Pendimethalin; and, Fungicides: Chlorothalonil, Propiconazole, Myclobutanil.		

Special Conditions:

1) The monitoring frequency reflects the required number of sample events per monitoring location.
2) The Instream Biological monitoring must follow a generally accepted biological monitoring methodology (e.g., DEQ Benthic Macroinvertebrate Protocol for Wadeable Rivers and Streams). The methodology must be documented or referenced in the monitoring plan.
3) Mercury stormwater monitoring during one wet-weather storm event and one dry-weather storm event must be conducted between October 1, 2012 and September 30, 2013. A second wet-weather storm event and dry-weather storm event must be monitored between October 1, 2014 and September 30, 2015. The co-permittee may request in writing beginning October 1, 2014 that monitoring of the second storm events be eliminated, and these events may be eliminated only after written approval by the Department is received by the co-permittee. Wet-weather storm event monitoring must occur between October 1 and April 30. Dry-weather storm event monitoring must occur between May 1 and September 30. EPA Method 1669 ultra clean sampling protocol must be used to collect samples. Monitoring for total and dissolved mercury must be performed according to USEPA method 1631E with a quantitation limit of 0.5 ng/L. Monitoring for total and dissolved methyl mercury must be performed according to USEPA method 1630 with a quantitation limit of 0.05 ng/L. Samples for pollutant parameters in the 'Field Analyte' category and TSS must be collected during each mercury monitoring sample event and analyzed in accordance with approved analytical methods.

Pollutant parameter(s) identified in each analyte category in Table B-1 are as follows:

Field	Conventional	Nutrients	Metals (Total Recoverable & Dissolved)
Dissolved Oxygen pH Temperature Conductivity	*Escherichia coli* (E. coli) Hardness Biochemical Oxygen Demand (BOD_5) Total Suspended Solids (TSS) Total Dissolved Solids (TDS) Volatile Solids (VS)	Nitrate (NO_3) Ammonia Nitrogen (NH_3-N) Total Phosphorus (TP) Ortho-Phosphorus (O-PO_4) **Mercury (Total & Dissolved)** Mercury Methyl Mercury	Copper Lead Zinc

Table B-1 - Milwaukie Environmental Monitoring			
Monitoring Type	**Monitoring Location(s)**	**Monitoring Frequency**	**Pollutant Parameter Analyte(s)**
Instream Monitoring	One (1) site	Four (4) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Continuous Instream Monitoring	One (1) monitoring station	Ongoing	Temperature Conductivity Dissolved Oxygen Total Dissolved Solids pH
Stormwater Monitoring – Wet Weather	One (1) site	Three (3) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Stormwater Monitoring - Mercury	One (1) site	See Special Condition #3	Mercury (Total & Dissolved)
Instream Biological Monitoring	Conduct or contribute to an instream biological monitoring project/task.		
Pesticide Monitoring	Conduct or contribute to a pesticide stormwater characterization monitoring or instream pesticide monitoring project/task. The pesticide pollutant parameters that must be considered for purposes of this requirement include any pesticides currently used by the City of Milwaukie within the jurisdictional areas and the following: Insecticides: Bifenthrin, Cypermethrin or Permethrin, Imidacloprid, Fipronil, Malathion, Carbaryl; Herbicides: Triclopyr, 2,4-D, Glyphosate & degradate (AMPA), Trifluaralin, Pendimethalin; and, Fungicides: Chlorothalonil, Propiconazole, Myclobutanil.		

Special Conditions:

1) The monitoring frequency reflects the required number of sample events per monitoring location.
2) The Instream Biological monitoring must follow a generally accepted biological monitoring methodology (e.g., DEQ Benthic Macroinvertebrate Protocol for Wadeable Rivers and Streams). The methodology must be documented or referenced in the monitoring plan.
3) Mercury stormwater monitoring during one wet-weather storm event and one dry-weather storm event must be conducted between October 1, 2012 and September 30, 2013. A second wet-weather storm event and dry-weather storm event must be monitored between October 1, 2014 and September 30, 2015. The co-permittee may request in writing beginning October 1, 2014 that monitoring of the second storm events be eliminated, and these events may be eliminated only after written approval by the Department is received by the co-permittee. Wet-weather storm event monitoring must occur between October 1 and April 30. Dry-weather storm event monitoring must occur between May 1 and September 30. EPA Method 1669 ultra clean sampling protocol must be used to collect samples. Monitoring for total and dissolved mercury must be performed according to USEPA method 1631E with a quantitation limit of 0.5 ng/L. Monitoring for total and dissolved methyl mercury must be performed according to USEPA method 1630 with a quantitation limit of 0.05 ng/L. Samples for pollutant parameters in the 'Field Analyte' category and TSS must be collected during each mercury monitoring sample event and analyzed in accordance with approved analytical methods.

Pollutant parameter(s) identified in each analyte category in Table B-1 are as follows:

Field	Conventional	Nutrients	Metals (Total Recoverable & Dissolved)
Dissolved Oxygen pH Temperature Conductivity	*Escherichia coli* (E. coli) Hardness Biochemical Oxygen Demand (BOD_5) Total Suspended Solids (TSS) Total Dissolved Solids (TDS) Volatile Solids (VS)	Nitrate (NO_3) Ammonia Nitrogen (NH_3-N) Total Phosphorus (TP) Ortho-Phosphorus (O-PO_4) **Mercury (Total & Dissolved)** Mercury Methyl Mercury	Copper Lead Zinc

Table B-1 - Oregon City Environmental Monitoring			
Monitoring Type	**Monitoring Location(s)**	**Monitoring Frequency**	**Pollutant Parameter Analyte(s)**
Instream Monitoring	Six (6) Sites	Four (4) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Stormwater Monitoring – Wet Weather	Two (2) sites	Three (3) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients;
Stormwater Monitoring - Mercury	One (1) site	See Special Condition #3	Mercury
Instream Biological Monitoring	Conduct or contribute to an instream biological monitoring project/task.		
Pesticide Monitoring	Conduct or contribute to a pesticide stormwater characterization monitoring or instream pesticide monitoring project/task. The pesticide pollutant parameters that must be considered for purposes of this requirement include any pesticides currently used by the City of Oregon City within the jurisdictional areas and the following: Insecticides: Bifenthrin, Cypermethrin or Permethrin, Imidacloprid, Fipronil, Malathion, Carbaryl; Herbicides: Triclopyr, 2,4-D, Glyphosate & degradate (AMPA), Trifluaralin, Pendimethalin; and, Fungicides: Chlorothalonil, Propiconazole, Myclobutanil.		

Special Conditions:

1) The monitoring frequency reflects the required number of sample events per monitoring location.
2) The Instream Biological monitoring must follow a generally accepted biological monitoring methodology (e.g., DEQ Benthic Macroinvertebrate Protocol for Wadeable Rivers and Streams). The methodology must be documented or referenced in the monitoring plan.
3) Mercury stormwater monitoring during one wet-weather storm event and one dry-weather storm event must be conducted between October 1, 2012 and September 30, 2013. A second wet-weather storm event and dry-weather storm event must be monitored between October 1, 2014 and September 30, 2015. The co-permittee may request in writing beginning October 1, 2014 that monitoring of the second storm events be eliminated, and these events may be eliminated only after written approval by the Department is received by the co-permittee. Wet-weather storm event monitoring must occur between October 1 and April 30. Dry-weather storm event monitoring must occur between May 1 and September 30. EPA Method 1669 ultra clean sampling protocol must be used to collect samples. Monitoring for total and dissolved mercury must be performed according to USEPA method 1631E with a quantitation limit of 0.5 ng/L. Monitoring for total and dissolved methyl mercury must be performed according to USEPA method 1630 with a quantitation limit of 0.05 ng/L. Samples for pollutant parameters in the 'Field Analyte' category and TSS must be collected during each mercury monitoring sample event and analyzed in accordance with approved analytical methods.

Pollutant parameter(s) identified in each analyte category in Table B-1 are as follows:

Field	Conventional	Nutrients	Metals (Total Recoverable & Dissolved)
Dissolved Oxygen pH Temperature Conductivity	*Escherichia coli* (E. coli) Hardness Biochemical Oxygen Demand (BOD_5) Total Suspended Solids (TSS) Total Dissolved Solids (TDS) Volatile Solids (VS)	Nitrate (NO_3) Ammonia Nitrogen (NH_3-N) Total Phosphorus (TP) Ortho-Phosphorus (O-PO_4) **Mercury (Total & Dissolved)** Mercury Methyl Mercury	Copper Lead Zinc

Table B-1 – West Linn Environmental Monitoring			
Monitoring Type	**Monitoring Location(s)**	**Monitoring Frequency**	**Pollutant Parameter Analyte(s)**
Instream Monitoring	Three (3) sites	Five (5) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Stormwater Monitoring – Wet Weather	One (1) site	Three (3) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Stormwater Monitoring - Mercury	One (1) site	See Special Condition #3	Mercury
Instream Biological Monitoring	Conduct or contribute to an instream biological monitoring project/task.		
Pesticide Monitoring	Conduct or contribute to a pesticide stormwater characterization monitoring or instream pesticide monitoring project/task. The pesticide pollutant parameters that must be considered for purposes of this requirement include any pesticides currently used by the City of West Linn within the jurisdictional areas and the following: Insecticides: Bifenthrin, Cypermethrin or Permethrin, Imidacloprid, Fipronil, Malathion, Carbaryl; Herbicides: Triclopyr, 2,4-D, Glyphosate & degradate (AMPA), Trifluaralin, Pendimethalin; and, Fungicides: Chlorothalonil, Propiconazole, Myclobutanil.		

Special Conditions:

1) The monitoring frequency reflects the required number of sample events per monitoring location.
2) The Instream Biological monitoring must follow a generally accepted biological monitoring methodology (e.g., DEQ Benthic Macroinvertebrate Protocol for Wadeable Rivers and Streams). The methodology must be documented or referenced in the monitoring plan.
3) Mercury stormwater monitoring during one wet-weather storm event and one dry-weather storm event must be conducted between October 1, 2012 and September 30, 2013. A second wet-weather storm event and dry-weather storm event must be monitored between October 1, 2014 and September 30, 2015. The co-permittee may request in writing beginning October 1, 2014 that monitoring of the second storm events be eliminated, and these events may be eliminated only after written approval by the Department is received by the co-permittee. Wet-weather storm event monitoring must occur between October 1 and April 30. Dry-weather storm event monitoring must occur between May 1 and September 30. EPA Method 1669 ultra clean sampling protocol must be used to collect samples. Monitoring for total and dissolved mercury must be performed according to USEPA method 1631E with a quantitation limit of 0.5 ng/L. Monitoring for total and dissolved methyl mercury must be performed according to USEPA method 1630 with a quantitation limit of 0.05 ng/L. Samples for pollutant parameters in the 'Field Analyte' category and TSS must be collected during each mercury monitoring sample event and analyzed in accordance with approved analytical methods.

Pollutant parameter(s) identified in each analyte category in Table B-1 are as follows:

Field	Conventional	Nutrients	Metals (Total Recoverable & Dissolved)
Dissolved Oxygen pH Temperature Conductivity	*Escherichia coli* (E. coli) Hardness Biochemical Oxygen Demand (BOD_5) Total Suspended Solids (TSS) Total Dissolved Solids (TDS) Volatile Solids (VS)	Nitrate (NO_3) Ammonia Nitrogen (NH_3-N) Total Phosphorus (TP) Ortho-Phosphorus (O-PO_4) **Mercury (Total & Dissolved)** Mercury Methyl Mercury	Copper Lead Zinc

Table B-1 - Wilsonville Environmental Monitoring			
Monitoring Type	**Monitoring Location(s)**	**Monitoring Frequency**	**Pollutant Parameter Analyte(s)**
Instream Monitoring	Three (3) sites	Four (4) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Stormwater Monitoring – Wet Weather	One (1) site	Three (3) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Stormwater Monitoring - Mercury	One (1) site	See Special Condition #3	Mercury
Instream Biological Monitoring	Conduct or contribute to an instream biological monitoring project/task.		
Pesticide Monitoring	Conduct or contribute to a pesticide stormwater characterization monitoring or instream pesticide monitoring project/task. The pesticide pollutant parameters that must be considered for purposes of this requirement include any pesticides currently used by the City of Wilsonville within the jurisdictional areas and the following: Insecticides: Bifenthrin, Cypermethrin or Permethrin, Imidacloprid, Fipronil, Malathion, Carbaryl; Herbicides: Triclopyr, 2,4-D, Glyphosate & degradate (AMPA), Trifluaralin, Pendimethalin; and, Fungicides: Chlorothalonil, Propiconazole, Myclobutanil.		

Special Conditions:

1) The monitoring frequency reflects the required number of sample events per monitoring location.
2) The Instream Biological monitoring must follow a generally accepted biological monitoring methodology (e.g., DEQ Benthic Macroinvertebrate Protocol for Wadeable Rivers and Streams). The methodology must be documented or referenced in the monitoring plan.
3) Mercury stormwater monitoring during one wet-weather storm event and one dry-weather storm event must be conducted between October 1, 2013 and September 30, 2014. A second wet-weather storm event and dry-weather storm event must be monitored between October 1, 2015 and September 30, 2016. The co-permittee may request in writing beginning October 1, 2014 that monitoring of the second storm events be eliminated, and these events may be eliminated only after written approval by the Department is received by the co-permittee. Wet-weather storm event monitoring must occur between October 1 and April 30. Dry-weather storm event monitoring must occur between May 1 and September 30. EPA Method 1669 ultra clean sampling protocol must be used to collect samples. Monitoring for total and dissolved mercury must be performed according to USEPA method 1631E with a quantitation limit of 0.5 ng/L. Monitoring for total and dissolved methyl mercury must be performed according to USEPA method 1630 with a quantitation limit of 0.05 ng/L. Samples for pollutant parameters in the 'Field Analyte' category and TSS must be collected during each mercury monitoring sample event and analyzed in accordance with approved analytical methods.

Pollutant parameter(s) identified in each analyte category in Table B-1 are as follows:

Field	Conventional	Nutrients	Metals (Total Recoverable & Dissolved)
Dissolved Oxygen pH Temperature Conductivity	*Escherichia coli* (E. coli) Hardness Biochemical Oxygen Demand (BOD_5) Total Suspended Solids (TSS) Total Dissolved Solids (TDS) Volatile Solids (VS)	Nitrate (NO_3) Ammonia Nitrogen (NH_3-N) Total Phosphorus (TP) Ortho-Phosphorus (O-PO_4) Mercury (Total & Dissolved) Mercury Methyl Mercury	Copper Lead Zinc

Table B-1 – Clackamas County, City of Happy Valley, and Clackamas County Service District No. 1 Environmental Monitoring			
Monitoring Type	**Monitoring Location(s)**	**Monitoring Frequency**	**Pollutant Parameter Analyte(s)**
Instream Monitoring	Eight (8) sites	Nine (9) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Instream Biological Monitoring	Eight (8) sites	One (1) event/permit term	N/A
Geomorphic Condition Monitoring	Seven (7) sites	One (1) event/permit term	N/A
Stormwater Monitoring – Wet Weather	Four (4) sites	Three (3) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Stormwater Monitoring - Mercury	One (1) site	See Special Condition #3	Mercury (Total & Dissolved)
Pesticide Monitoring	Conduct or contribute to a pesticide stormwater characterization monitoring or instream pesticide monitoring project/task. The pesticide pollutant parameters that must be considered for purposes of this requirement include any pesticides currently used by the co-permittees within the jurisdictional areas and the following: Insecticides: Bifenthrin, Cypermethrin or Permethrin, Imidacloprid, Fipronil, Malathion, Carbaryl; Herbicides: Triclopyr, 2,4-D, Glyphosate & degradate (AMPA), Trifluaralin, Pendimethalin; and, Fungicides: Chlorothalonil, Propiconazole, Myclobutanil.		

Special Conditions:

1) The monitoring frequency reflects the required number of sample events per monitoring location.
2) The Instream Biological monitoring must follow a generally accepted biological monitoring methodology (e.g., DEQ Benthic Macroinvertebrate Protocol for Wadeable Rivers and Streams). The methodology must be documented or referenced in the monitoring plan.
3) The Geomorphic Condition monitoring must reflect a generally accepted geomorphic assessment methodology (e.g., Reconnaissance Level Assessment, Rapid Resource Inventory for Sediment and Stability Consequences). The methodology must be documented or referenced in the monitoring plan.
4) Mercury stormwater monitoring during one wet-weather storm event and one dry-weather storm event must be conducted between October 1, 2013 and September 30, 2014. A second wet-weather storm event and dry-weather storm event must be monitored between October 1, 2015 and September 30, 2016. The co-permittee may request in writing beginning October 1, 2014 that monitoring of the second storm events be eliminated, and these events may be eliminated only after written approval by the Department is received by the co-permittee. Wet-weather storm event monitoring must occur between October 1 and April 30. Dry-weather storm event monitoring must occur between May 1 and September 30. EPA Method 1669 ultra clean sampling protocol must be used to collect samples. Monitoring for total and dissolved mercury must be performed according to USEPA method 1631E with a quantitation limit of 0.5 ng/L. Monitoring for total and dissolved methyl mercury must be performed according to USEPA method 1630 with a quantitation limit of 0.05 ng/L. Samples for pollutant parameters in the 'Field Analyte' category and TSS must be collected during each mercury monitoring sample event and analyzed in accordance with approved analytical methods.

Pollutant parameter(s) identified in each analyte category in Table B-1 are as follows:

Field	Conventional	Nutrients	Metals (Total Recoverable & Dissolved)
Dissolved Oxygen pH Temperature Conductivity	*Escherichia coli* (E. coli) Hardness Biochemical Oxygen Demand (BOD_5) Total Suspended Solids (TSS) Total Dissolved Solids (TDS)	Nitrate-Nitrite (NO_3) Ammonia Nitrogen (NH_3-N) Total Phosphorus (TP) Ortho-Phosphorus (O-PO_4) **Mercury (Total & Dissolved)** Mercury Methyl Mercury	Copper Lead Zinc

Table B-1 – City of Rivergrove and Surface Water Management Agency of Clackamas County Environmental Monitoring			
Monitoring Type	**Monitoring Location(s)**	**Monitoring Frequency**	**Pollutant Parameter Analyte(s)**
Instream Monitoring	One (1) site	Nine (9) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Instream Biological Monitoring	One (1) site	One (1) event/permit term	N/A
Stormwater Monitoring – Wet Weather	One (1) site	Three (3) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Stormwater Monitoring - Mercury	One (1) site	See Special Condition #3	Mercury (Total & Dissolved)
Pesticide Monitoring	Conduct or contribute to a pesticide stormwater characterization monitoring or instream pesticide monitoring project/task. The pesticide pollutant parameters that must be considered for purposes of this requirement include any pesticides currently used by the co-permittees within the jurisdictional areas and the following: Insecticides: Bifenthrin, Cypermethrin or Permethrin, Imidacloprid, Fipronil, Malathion, Carbaryl; Herbicides: Triclopyr, 2,4-D, Glyphosate & degradate (AMPA), Trifluaralin, Pendimethalin; and, Fungicides: Chlorothalonil, Propiconazole, Myclobutanil.		

Special Conditions:

1) The monitoring frequency reflects the required number of sample events per monitoring location.
2) The Instream Biological Monitoring must follow a generally accepted biological monitoring methodology (e.g., DEQ Benthic Macroinvertebrate Protocol for Wadeable Rivers and Streams). The methodology must be documented or referenced in the monitoring plan.
3) Mercury stormwater monitoring during one wet-weather storm event and one dry-weather storm event must be conducted between October 1, 2013 and September 30, 2014. A second wet-weather storm event and dry-weather storm event must be monitored between October 1, 2015 and September 30, 2016. The co-permittee may request in writing beginning October 1, 2014 that monitoring of the second storm events be eliminated, and these events may be eliminated only after written approval by the Department is received by the co-permittee. Wet-weather storm event monitoring must occur between October 1 and April 30. Dry-weather storm event monitoring must occur between May 1 and September 30. EPA Method 1669 ultra clean sampling protocol must be used to collect samples. Monitoring for total and dissolved mercury must be performed according to USEPA method 1631E with a quantitation limit of 0.5 ng/L. Monitoring for total and dissolved methyl mercury must be performed according to USEPA method 1630 with a quantitation limit of 0.05 ng/L. Samples for pollutant parameters in the 'Field Analyte' category and TSS must be collected during each mercury monitoring sample event and analyzed in accordance with approved analytical methods.

Pollutant parameter(s) identified in each analyte category in Table B-1 are as follows:

Field	Conventional	Nutrients	Metals (Total Recoverable & Dissolved)
Dissolved Oxygen pH Temperature Conductivity	*Escherichia coli* (E. coli) Hardness Biochemical Oxygen Demand (BOD_5) Total Suspended Solids (TSS) Total Dissolved Solids (TDS) Volatile Solids (VS)	Nitrate-Nitrite (NO_3) Ammonia Nitrogen (NH_3-N) Total Phosphorus (TP) Ortho-Phosphorus (O-PO_4) **Mercury (Total & Dissolved)** Mercury Methyl Mercury	Copper Lead Zinc

Table B-1 – Oak Lodge Sanitary District Environmental Monitoring			
Monitoring Type	**Monitoring Location(s)**	**Monitoring Frequency**	**Pollutant Parameter Analyte(s)**
Instream Monitoring	Three (3) sites	Four (4) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Stormwater Monitoring – Wet Weather	Three (3) sites	Three (3) events/year	Field; Conventional; Metals (Total Recoverable & Dissolved); Nutrients
Stormwater Monitoring - Mercury	One (1) site	See Special Condition #3	Mercury
Instream Biological Monitoring	Conduct or contribute to an instream biological monitoring project/task.		
Pesticide Monitoring	Conduct or contribute to a pesticide stormwater characterization monitoring or instream pesticide monitoring project/task. The pesticide pollutant parameters that must be considered for purposes of this requirement include any pesticides currently used by the City of Wilsonville within the jurisdictional areas and the following: Insecticides: Bifenthrin, Cypermethin or Permethrin, Imidacloprid, Fipronil, Malathion, Carbaryl; Herbicides: Triclopyr, 2,4-D, Glyphosate & degradate (AMPA), Trifluaralin, Pendimethalin; and, Fungicides: Chlorothalanil, Propiconazole, Myclobutanil		

Special Conditions:

1) The monitoring frequency reflects the required number of sample events per monitoring location.
2) The Instream Biological monitoring must follow a generally accepted biological monitoring methodology (e.g., DEQ Benthic Macroinvertebrate Protocol for Wadeable Rivers and Streams). The methodology must be documented or referenced in the monitoring plan.
3) Oil & Grease monitoring must use the Silica Gel Treated Hexane Extractable Material analytical method.
4) Mercury stormwater monitoring during one wet-weather storm event and one dry-weather storm event must be conducted between October 1, 2013 and September 30, 2014. A second wet-weather storm event and dry-weather storm event must be monitored between October 1, 2015 and September 30, 2016. The co-permittee may request in writing beginning October 1, 2014 that monitoring of the second storm events be eliminated, and these events may be eliminated only after written approval by the Department is received by the co-permittee. Wet-weather storm event monitoring must occur between October 1 and April 30. Dry-weather storm event monitoring must occur between May 1 and September 30. EPA Method 1669 ultra clean sampling protocol must be used to collect samples. Monitoring for total and dissolved mercury must be performed according to USEPA method 1631E with a quantitation limit of 0.5 ng/L. Monitoring for total and dissolved methyl mercury must be performed according to USEPA method 1630 with a quantitation limit of 0.05 ng/L. Samples for pollutant parameters in the 'Field Analyte' category and TSS must be collected during each mercury monitoring sample event and analyzed in accordance with approved analytical methods.

Pollutant parameter(s) identified in each analyte category in Table B-1 are as follows:

Field	Conventional	Nutrients	Metals (Total Recoverable & Dissolved)
Dissolved Oxygen pH Temperature Conductivity	*Escherichia coli* (E. coli) Hardness Biochemical Oxygen Demand (BOD_5) Total Suspended Solids (TSS) Total Dissolved Solids (TDS) Oil & Grease	Nitrate (NO_3) Ammonia Nitrogen (NH_3-N) Total Phosphorus (TP) Ortho-Phosphorus (O-PO_4) **Mercury (Total & Dissolved)** Mercury Methyl Mercury	Copper Lead Zinc

2. **MONITORING PLAN** - The co-permittee must develop and implement an approved monitoring plan by October 1, 2012. Prior to submission of the monitoring plan to the Department, the co-permittee must provide an opportunity to receive comments from the public. The monitoring plan must be submitted to the Department for review no later than September 1, 2012, and incorporate the following elements:

   a. Identifies how each monitoring objective identified in Schedule B.1.a. is addressed and the sources of information used. The co-permittee may use Stormwater Management Plan measurable goals, environmental monitoring activities, historical monitoring data, stormwater modeling, national stormwater monitoring data, stormwater research or other applicable information to address the monitoring objectives.

   b. Describes the role of the monitoring program in the adaptive management of the stormwater program.

   c. Describes the relationship between environmental monitoring and a long-term monitoring program strategy.

   d. Describes the following information for each environmental monitoring project/task:

      i. Project/task organization

      ii. Monitoring objectives, including:
         a. Monitoring question and background;
         b. Data analysis methodology and quality criteria; and,
         c. Assumptions and rationale;

      iii. Documentation and record-keeping procedures;

      iv. Monitoring process/study design, including monitoring location, description of sampling event or storm selection criteria, monitoring frequency and duration, and responsible sampling coordinator;

      v. Sample collection methods and handling/custody procedures;

      vi. Analytical methods for each water quality parameter to be analyzed;

      vii. Quality control procedures, including quality assurance, the testing, inspection, maintenance, calibration of instrumentation and equipment; and,

      viii. Data management, review, validation and verification.

   e. The monitoring plan may be modified without prior Department approval if the following conditions are met. For conditions not covered in this section, the co-permittee must provide the Department with a 30-day notice of the proposed modification to the monitoring plan, and receive written approval from the Department prior to implementation of the proposed modification. If the Department does not respond to the permittee within 30

days, the permittee may proceed with implementation of the proposed modification without written approval.

i. The co-permittee is unable to collect or analyze any sample, pollutant parameter, or information due to circumstances beyond the co-permittee's control. These circumstances may include, but are not limited to, abnormal climatic conditions, unsafe or impracticable sampling conditions, equipment vandalism or equipment failures that occur despite proper operations and maintenance; or,

ii. The modification does not reduce the minimum number of data points, which are a product of monitoring location, frequency, and length of permit term, or eliminate pollutant parameters identified in Table B-1.

f. Modifications to the monitoring plan in accordance with Schedule B.2.e. must be documented in the subsequent annual report by describing the rationale for the modification, and how the modification will allow the monitoring program to remain compliant with the permit conditions.

3. **SAMPLING AND ANALYSIS** – The co-permittee must exercise due diligence in collecting and analyzing all environmental monitoring samples required by this permit. All monitoring must be conducted in accordance with design and procedures identified in Schedule B.2.d.

a. Instream monitoring
   i. A minimum of 50 percent of the water quality sample events must be collected during the wet season (October 1 to April 30).

   ii. Each unique sample event must occur at a minimum of 14 days apart.

b. Stormwater monitoring
   i. All water quality samples must be collected during a storm event that is greater than 0.1 inch of rainfall.

   ii. When possible, samples must be collected after an antecedent dry period of a minimum of 24 hours.

   iii. The intra-event dry period must not exceed 6 hours, unless a 24-hr flow-weighted composite sample collection method is employed.

   iv. Sample Collection Method: A flow-weighted composite sample must be collected during stormwater runoff producing events that represent the local or regional rainfall frequency and intensity, including event types that may be expected to yield high pollutant loads/concentrations.

      1. A time-composite sampling method or grab sampling method may be used for an environmental monitoring type, project or task, if the monitoring plan identifies the infeasibility of the flow-weighted composite sampling method or

flow-weighted composite sampling is scientifically unwarranted based upon the development of plan requirements identified in Schedule B.2.d. For time composite sampling or grab sampling to be considered valid for the purpose of this permit requirement, the rationale for the use of these alternative sampling methods and sampling procedures must be described in the monitoring plan.

2. The flow-weighted sampling method requirement is not applicable to the collection of samples for the pollutant parameters requiring the grab sampling method, such as bacteria, oil & grease, pH or volatiles or for samples collected for purposes of insecticide, herbicide and fungicide monitoring.

3. Grab samples may be collected during any part of a storm event which produces sufficient runoff for sampling. The grab samples must be collected in a manner to minimize any potential bias in the results.

v. Flow or rainfall data must be collected, estimated or modeled for each stormwater monitoring event, including storm events when mercury monitoring is conducted. If flow or rainfall is modeled or estimated, the procedure must be described in the monitoring plan.

c. Samples must be analyzed in accordance with EPA approved methods listed in the most recent publication of 40 CFR 136. Sample shipment and analysis for total and dissolved mercury and methyl mercury must adhere to the methods referenced in DEQ's "Mercury Monitoring Requirements for Willamette Basin Permittees" memo. The analysis must utilize appropriate Quality Assurance/Quality Control protocols, such as routinely analyzing replicates, blanks, laboratory control samples and spiked samples, and quantitation limits appropriate for the sampling objective. Field analytical kits are acceptable if the kits use a method approved under 40 CFR 136. This requirement does not apply to illicit detection and discharge elimination field screening activities conducted by the co-permittee as required by Schedule A.4.a.iv. Use of alternative test procedures must be done in accordance with 40 CFR 136.

d. If an approved analytical method is not identified in 40 CFR 136, the co-permittee may use a suitable analytical method if the method is described in the monitoring plan, and submitted to the Department for review and approval prior to use.

e. Analyzed samples must comply with preservation, transportation and holding time recommendations cited in 40 CFR 136, in the most recent edition of Standard Methods for the Examination of Water and Wastewater, a DEQ management directive, or as applicable to the analytical method if no approved analytical method in 40 CFR 136 or the most recent edition of Standard Methods for the Examination of Water and Wastewater exists.

f. Analytical data must be available to the Department in a useable electronic format.

4. **COORDINATED MONITORING** –Environmental monitoring conducted to meet a permit condition in Table B-1 may be coordinated among co-permittees or conducted on behalf of a co-

permittee by a third party. Each co-permittee is responsible for environmental monitoring in accordance with Schedule B requirements. The co-permittee may utilize data collected by another permittee, a third party, or in another co-permittee's jurisdiction to meet a permit condition in Table B-1 provided the co-permittee establishes an agreement prior to conducting coordinated environmental monitoring.

5. **ANNUAL REPORTING REQUIREMENT** – The co-permittee must submit, by November 1 of each year, an annual report for the time period July 1 of the previous year through June 30 of the same year. One printed copy and an electronic copy must be submitted to the appropriate Department regional office. An electronic copy must also be made available on the co-permittee's website and/or other similar method approved by the Department. Each co-permittee is responsible for the portion of the annual report applicable to its jurisdiction. Each annual report must contain:

   a. The status of implementing the stormwater management program and each SWMP program element, including progress in meeting the measurable goals identified in the SWMP.

   b. Status or results, or both, of any public education program effectiveness evaluation conducted during the reporting year and a summary of how the results were or will be used for adaptive management.

   c. A summary of the adaptive management process implementation during the reporting year, including any proposed changes to the stormwater management program (e.g., new BMPs) identified through implementation of the adaptive management process.

   d. Any proposed changes to SWMP program elements that are designed to reduce TMDL pollutants to the MEP.

   e. A summary of total stormwater program expenditures and funding sources over the reporting fiscal year, and those anticipated in the next fiscal year.

   f. A summary of monitoring program results, including monitoring data that are accumulated throughout the reporting year and any assessments or evaluations conducted.

   g. Any proposed modifications to the monitoring plan that are necessary to ensure that adequate data and information are collected to conduct stormwater program assessments.

   h. A summary describing the number and nature of enforcement actions, inspections, and public education programs, including results of ongoing field screening and follow-up activities related to illicit discharges.

   i. A summary, as it relates to MS4 discharges, describing land use changes, Urban Growth Boundary (UGB) expansion, land annexations, and new development activities that occurred within these areas during the reporting year. The number of new post-construction permits issued and an estimate of the total new and replaced impervious surface area related to development projects that commenced during the reporting year must also be included.

j. A summary, as related to MS4 discharges, describing concept planning or other activities conducted in preparation of UGB expansion or land annexation, if anticipated for the following year.

k. In addition to the elements listed under Schedule B.5.a. through B.5.i., the annual report submitted by November 1, 2015 must include:

i. The TMDL Pollutant Load Reduction Evaluation as described in Schedule D.3.c.
ii. The Wasteload Allocation Attainment Assessment as described in Schedule D.3.b.
iii. The 303(d) evaluation as described in Schedule D.2.

6. **MS4 PERMIT RENEWAL APPLICATION PACKAGE -** At least 180 days prior to permit expiration, the co-permittee must submit a permit renewal application package to support their proposed modifications to the SWMP for the renewed permit. One printed copy and an electronic copy must be submitted to the appropriate DEQ regional office. An electronic copy must also be made available on the co-permittee's website or other similar method approved by the Department. The application package must include an evaluation of the adequacy of the proposed SWMP modifications in reducing pollutants in discharges from the MS4 to the MEP. The application package must contain:

a. Proposed program modifications including the modification, addition or removal of BMPs incorporated into the SWMP, and associated measurable goals.

b. The information and analysis necessary to support the Department's independent assessment that the co-permittee's stormwater management program addressed the requirements of the existing permit. Co-permittees must also describe how the proposed management practices, control techniques, and other provisions implemented as part of the stormwater program were evaluated using a co-permittee-defined and standardized set of objective criteria relative to the following MEP general evaluation factors:

i. Effectiveness – program elements effectively address stormwater pollutants.
ii. Local Applicability – program elements are technically feasible considering local soils, geography, and other locale specific factors.
iii. Program Resources – program elements are implemented considering availability to resources and the co-permittees stormwater management program priorities.

c. An updated estimate of total annual stormwater pollutant loads for applicable TMDL pollutants or applicable surrogate parameters, and the following pollutant parameters: BOD_5, COD, nitrate, total phosphorus, dissolved phosphorus, cadmium, copper, lead and zinc. The estimates must be accompanied by a description of the procedures for estimating pollutant loads and concentrations, including any modeling, data analysis and calculation methods.

d. A proposed monitoring program objectives matrix and proposed monitoring plan including the information required in Schedule B.2.d. for each proposed monitoring project/task.

e. A description of any MS4 service area expansions that are anticipated to occur during the

following permit term and a finding as to whether or not the expansion is expected to result in a substantial increase in area, intensity or pollutant loads.

f. A fiscal evaluation summarizing program expenditures for the current permit cycle and projected program allocations for next permit cycle.

g. Updated MS4 maps, including the service boundary of the MS4, projected changes in land use and population densities, anticipated Urban Growth Boundary expansion or areas planned to be incorporated through land annexation, location of co-permittee-owned operations, facilities or properties with storm sewer systems, and the location of facilities issued an industrial NPDES permit that discharge to the MS4.

h. If applicable, the established TMDL pollutant load reduction benchmarks, as required in Schedule D.3.d.

SCHEDULE C
Compliance Conditions and Dates

Compliance conditions and dates are not included at this time.

SCHEDULE D
Special Conditions

1. **Legal Authority**
   Each co-permittee must maintain adequate legal authority through ordinance(s), interagency agreement(s) or other means to implement and enforce the provisions of this permit.

2. **303(d) Listed Pollutants**
   a. The requirements of this section apply to receiving waters listed as impaired on the 303(d) list without established TMDL waste load allocations to which the co-permittee's MS4 discharges. The co-permittee must:
      i. Review the applicable pollutants that are on the 2004/2006 303(d) list, or the most recent USEPA list if approved within three years of the issuance date of this permit, that are relevant to the co-permittee's MS4 discharges by November 1, 2015. Based on a review of the most current 303(d) list, evaluate whether there is a reasonable likelihood for stormwater from the MS4 to cause or contribute to water quality degradation of receiving waters.
      ii. Evaluate whether the BMPs in the existing SWMP are effective in reducing the 303(d) pollutants. If the co-permittee determines that the BMPs in the existing SWMP are ineffective in reducing the applicable 303 (d) pollutants, the co-permittee must describe how the SWMP will be modified or updated to address and reduce these pollutants to the MEP.
      iii. By November 1, 2015, submit a report summarizing the results of the review and evaluation, and that identifies any proposed modifications or updates to the SWMP that are necessary to reduce applicable 303(d) pollutants to the MEP.

3. **Total Maximum Daily Loads (TMDLs)**
   a. Applicability: The requirements of this section apply to the co-permittee's MS4 discharges to receiving waters with established TMDLs or to receiving waters with new or modified TMDLs approved by EPA within three years of the issuance date of this permit. Established TMDLs are noted on page 1 of this permit. Pollutant discharges for those parameters listed in the TMDL with applicable wasteload allocations (WLAs) must be reduced to the maximum extent practicable through the implementation of BMPs and an adaptive management process.

   b. Wasteload Allocation Attainment Assessment: The co-permittee must complete an assessment of WLA attainment, including identifying information related to the type and extent of BMPs necessary to achieve pollutant load reductions associated with an established TMDL WLA and the financial costs and other resources that may be associated with the implementation, operation and maintenance of BMPs. The results of the assessment must be submitted to the Department by November 1, 2015.

c. TMDL Pollutant Load Reduction Evaluation: Progress towards reducing TMDL pollutant loads must be evaluated by the co-permittee through the use of a pollutant load reduction empirical model, water quality status and trend analysis, and other appropriate qualitative or quantitative evaluation approaches identified by the co-permittee. The results of this TMDL pollutant load reduction evaluation must be described in a report and submitted to the Department by November 1, 2015. The report must contain the following:

   i. The rationale and methodology used to evaluate progress towards reducing TMDL pollutant loads.
   ii. An estimate of current pollutant loadings without considering BMP implementation, and an estimate of current pollutant loadings considering BMP implementation for each TMDL parameter with an established WLA. The difference between these two estimated loads is the pollutant load reduction.
   iii. A comparison of the estimated pollutant loading with and without BMP implementation to the applicable TMDL WLA.
   iv. A comparison of the estimated pollutant load reduction to the estimated TMDL pollutant load reduction benchmark established for the permit term, if applicable.
   v. A description of the estimated effectiveness of structural BMPs.
   vi. A description of the estimated effectiveness of non-structural BMPs, if applicable, and the rationale for the selected approach.
   vii. A water quality trend analysis, as sufficient data are available, and the relationship to stormwater discharges for receiving waterbodies within the co-permittee's jurisdictional area with an approved TMDL. If sufficient data to conduct a water quality trend analysis is unavailable for a receiving waterbody, the co-permittee must describe the data limitations. The collection of sufficient data must be prioritized and reflected as part of the monitoring project/task proposal required in Schedule B.6.d.
   viii. A narrative summarizing progress towards the applicable TMDL WLAs and existing TMDL benchmarks, if applicable. If the co-permittee estimates that an existing TMDL benchmark was not achieved during the permit term, the co-permittee must apply their adaptive management process to reassess the SWMP and current BMP implementation in order to address TMDL pollutant load reduction over the next permit term. The results of this reassessment must be submitted with the permit renewal application package described in Schedule B.6.; and,
   ix. If the co-permittee estimates that TMDL WLAs are achieved with existing BMP implementation, the co-permittee must provide a statement supporting this conclusion.

d. Establishment of TMDL Pollutant Reduction Benchmarks: A TMDL pollutant reduction benchmark must be developed for each applicable TMDL parameter where existing BMP implementation is not achieving the WLA. An updated TMDL pollutant reduction benchmark must be submitted with the permit renewal application at least 180 days prior to expiration of this permit, as follows:

   i. The TMDL pollutant load reduction benchmark must reflect:
      1. Additional pollutant load reduction necessary to achieve the benchmark estimated for the current permit term, if not achieved per Schedule D.3.c.iv.; and,

2. The pollutant load reduction proposed to achieve additional progress towards the TMDL WLA during the next permit term.

ii. The TMDL pollutant load reduction benchmark submittal must include the following:
1. An explanation of the relationship between the TMDL wasteload allocations and the TMDL benchmark for each applicable TMDL parameter;
2. A description of how SWMP implementation contributes to the overall reduction of the TMDL pollutants during the next permit term;
3. Identification of additional or modified BMPs that will result in further reductions in the discharge of the applicable TMDL pollutants, including the rationale for proposing the BMPs; and,
4. An estimate of current pollutant loadings that reflect the implementation of the current BMPs and the BMPs proposed to be implemented during the next permit term.

4. Adaptive Management

Each co-permittee must follow an adaptive management approach to assess annually and modify, as necessary, any or all existing SWMP components and adopt new or revised SWMP components to achieve reductions in stormwater pollutants to the MEP. The adaptive management approach must include routine assessment of the need to further improve water quality and protection of beneficial uses, review of available technologies and practices, review of monitoring data and analyses required in Schedule B, review of measurable goals and tracking measures, and evaluation of resources available to implement the technologies and practices. The co-permittee must submit a description of the process for conducting this adaptive management approach during the permit term by November 1, 2012.

5. SWMP Revisions

The co-permittee may revise their SWMP during the permit term in accordance with the following procedures:

i. Adding BMPs, controls or requirements to the SMWP may be made at any time. The co-permittee must provide notification to the Department prior to implementation, and submit a summary of such revisions to the Department in the subsequent annual report.

ii. Reducing, replacing or eliminating BMP components, controls or requirements from the SWMP require submittal of a written request to the Department at least 60 days prior to the planned reduction, replacement, and/or elimination. The co-permittee's request must provide information that will allow the Department to determine within 60 days if the nature or scope of the SWMP is substantially changed, and include the following:
1. Proposed reduction, replacement or elimination of the BMP(s), control, or requirement and schedule for implementation.
2. An explanation of the need for the replacement, reduction or elimination.
3. An explanation of how the replacement or reduction is expected to better achieve the goals of the stormwater management program or how the elimination is a result of the satisfactory completion of the BMP component, control or requirement.

iii. The co-permittee must not implement a reduction, replacement or elimination of a BMP

until approved by the Department. If a request is denied, the Department must send the co-permittee a written response providing a reason for the decision.

iv. Adding, reducing, replacing or eliminating BMPs in the SWMP are considered permit revisions, and such revisions are minor or major permit modifications. Revisions that substantially change the nature and scope of the BMP component, control or requirement will be considered a major permit modification. Revisions requested by the permittee or initiated by the Department will be made in accordance with 40 CFR §§124.5, 122.62, or 122.63, and OAR 340-045-0040 and 0055.

v. Revisions initiated by the Department will be made in writing, set forth the time schedule for the co-permittee to develop the revisions, and offer the co-permittee the opportunity to propose alternatives to meet the objective of the requested revisions.

6. CITY OF GLADSTONE: Conduct Stormwater Master Planning

a. The City of Gladstone must complete and submit a stormwater master plan to the Department by January 1, 2014. The stormwater master plan must identify stormwater quality controls to reduce the discharge of pollutants from the municipal separate storm sewers, and may focus on the identification of capital improvement projects for stormwater quality.

7. OAK LODGE SANITARY DISTRICT and CLACKAMAS COUNTY: TMDL Pollutant Load Reduction Evaluation and Intergovernmental Agreement

a. Oak Lodge Sanitary District and Clackamas County must evaluate TMDL pollutant load reductions representing jurisdictional areas identified on the Oak Lodge Sanitary District MS4 Regulatory Map. The evaluation must use a pollutant load reduction empirical model and may incorporate the results of a water quality status and trend analysis for waterbodies to which the Oak Lodge Sanitary District and Clackamas County MS4 discharges. The evaluation must reflect the estimated TMDL pollutant loads and estimated pollutant load reductions for all applicable TMDL pollutant parameters as estimated for the year of 2010. The results of this TMDL pollutant load reduction evaluation must be described in a report and submitted to the Department by November 1, 2013. The report must include all of the information required in Schedule D.3.c.i-ix. Completion of activities to achieve compliance with this condition may not be conducted in lieu of requirements described in Schedule D.3.

b. Oak Lodge Sanitary District and Clackamas County must develop a TMDL pollutant reduction benchmark for each applicable TMDL parameter where existing BMP implementation is not achieving the WLA. The TMDL pollutant reduction benchmark may be used for purposes of comparison, as required in Schedule D.3.c.iv.

c. Oak Lodge Sanitary District and Clackamas County must submit an intergovernmental agreement or equivalent document by November 1, 2013 describing the co-permittee that will maintain lead jurisdictional responsibility for the requirements identified in Schedule A.4.a-h., Schedule D.2, and Schedule D.3 within the geographical areas identified on the Oak Lodge Sanitary District MS4 Regulatory Map.

8. **SWMP Measurable Goals**

The following conditions must be incorporated into the City of Gladstone SWMP by May 1, 2012:

a. **BMP Require Erosion Control for New and Redevelopment:** Update City Municipal Code provisions related to erosion and sediment control by January 1, 2014 in order to reflect permit requirements and accurately describe coordination with Clackamas County.
b. **BMP Conduct Erosion Control Inspections and Enforcement**: Add measurable goal that a minimum of one unscheduled inspection is conducted at all active construction sites.
c. **BMP Minimize Impacts Associated with Landscape Maintenance Activities**: Add measurable goal to implement the Integrated Pest Management Guidelines for the City of Gladstone on all public parks, roadsides and open space areas.
d. **BMP Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities**: Modify measurable goal to ensure inventory of municipal facilities, and the identification and implementation of strategies designed to reduce the impact of stormwater runoff from these municipal facilities is completed by January 1, 2013.
e. **BMP Coordinate with the Local Fire Department related to Pollutant Discharge from Fire Fighting Training Activities:** Modify the measurable goal under the first bullet point to contact the City fire chief to determine what activities are conducted to minimize pollutant discharge associated with fire fighting training activities by November 1, 2012.

The following conditions must be incorporated into the City of Johnson City SWMP by May 1, 2012:

f. **BMP JC-3:** Modify measurable goal to reflect the review, approval and verification of new development and redevelopment post-construction stormwater management plans for all new development and redevelopment projects subject to the post-construction site runoff program.

The following conditions must be incorporated into the City of Lake Oswego SWMP by May 1, 2012:

g. **BMP EC1:** Add measurable goal to provide wet-weather construction requirements with all erosion and sediment control permits issued between October 1 and May 31.
h. **BMP EC2:** Modify measurable goal under the second bullet point to add that a minimum of one unscheduled inspection is conducted at all active construction sites.
i. **BMP PEST1:** Modify measurable goal to develop a process for the inventory of pesticides applied to permittee-owned or operated property by November 1, 2012. Upon development of the inventory process, annually inventory pesticide use on permittee-owned or operated property.
j. **BMP PEST1:** Add measurable goal to require all pesticide applicators applying pesticides to permittee-owned or operated property maintain an operator certification.
k. **BMP PEST2:** Modify measurable goal to continue to implement the City of Lake Oswego's Integrated Pest Management (IPM) practices, and by November 1, 2014, update the City of Lake Oswego's IPM practices to reflect generally accepted integrated pest management principles.
l. **BMP OM4:** Modify measurable goal to ensure inventory of municipal facilities, implementation and tracking of the program designed to reduce the impact of stormwater runoff from municipal facilities is completed by January 1, 2013.

The following conditions must be incorporated into the City of Milwaukie SWMP by May 1, 2012:

m. **BMP Conduct Street Sweeping and Roadway Repair Activities**: Modify measurable goal to schedule and conduct routine road repair during dry-weather conditions.
n. **BMP Minimize Water Quality Impacts Associated with Landscape Management Practices**: Add second bullet point under measurable goal to develop and implement Integrated Pest Management guidelines by November 1, 2014.
o. **BMP Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities**: Modify measurable goal to ensure procedures are drafted by the start-up of facility operation, and that final procedures are implemented within 6 months of operation.

The following conditions must be incorporated into the City of Oregon City SWMP by May 1, 2012:

p. **BMP 3-3**: Add third bullet point under the measurable goals to reflect one unscheduled inspection.
q. **BMP 7-4:** Add third bullet point under the measurable goals to develop Geographical Information System map layer that identifies high priority inspection areas by June 30, 2013, and conduct visual inspections during routine catch basin cleaning in the areas identified on the high priority area map layer.
r. **BMP 7-5:** Modify measurable goals to contact and provide educational information to minimize pollutant discharges associated with fire fighting training activities to Clackamas County Fire District #1 by November 1, 2012.

The following conditions must be incorporated into the City of West Linn SWMP by May 1, 2012:

s. **BMP Conduct Erosion Control Inspections and Enforcement:** Modify the measurable goal under the first bullet point to conduct an initial and final inspection at all construction sites with erosion control plan for appropriate erosion control. Add fourth bullet point to measurable goals that ensures a minimum of one additional erosion control inspection is conducted during active construction at all sites.
t. **BMP Conduct Street Area Repair:** Modify measurable goal to ensure all road maintenance and repair activities will include appropriate erosion control practices that address water quality impacts.
u. **BMP Implement a Program to Reduce the Impact of Stormwater Runoff from Municipal Facilities:** Modify measurable goal to ensure inventory of municipal facilities, and the identification and implementation of strategies designed to reduce the impact of stormwater runoff from these municipal facilities is completed by January 1, 2013.
v. **BMP Control Infiltration and Cross Connections to the Stormwater Conveyance System:** Modify the measurable goal under the first bullet point to investigate for cracking and breakage, and repair as necessary based on the results of the inspection, a minimum of 5,000 linear feet of sanitary sewer annually.

The following conditions must be incorporated into the City of Wilsonville SWMP by May 1, 2012:

w. BMP Routine Road Maintenance: Modify second bullet point under measurable goal to schedule and conduct routine road repair during dry-weather conditions.

x. BMP Municipal Facility Stormwater Management: Modify measurable goal to ensure inventory of municipal facilities, and the identification and implementation of strategies designed to reduce the impact of stormwater runoff from these municipal facilities is completed by January 1, 2013.

The following conditions must be incorporated into the CCSD#1 and City of Happy Valley SWMP by May 1, 2012:

y. BMP 9: Add fifth bullet point to measurable goals to conduct a minimum of one unscheduled inspection at all active construction sites.

z. BMP 22: Add second bullet point to measurable goal to develop and implement an Integrated Pest Management Plan by December 31, 2012.

aa. BMP 24: Modify measurable goal to reflect that all planned stormwater Capital Improvement Projects will be developed to address water quality in accordance with the applicable Watershed Action Plan.

bb. BMP 26: Add a third bullet point to measurable goals to conduct conveyance system condition assessment by June 30, 2013.

The following conditions must be incorporated into the SWMACC and City of Rivergrove SWMP by May 1, 2012:

cc. BMP 9: Add third bullet point to measurable goals to conduct a minimum of one unscheduled inspection at all active construction sites.

dd. BMP 22: Add second bullet point to measurable goal to develop and implement an Integrated Pest Management Plan by December 31, 2012.

ee. BMP 26: Add a third bullet point to measurable goals to conduct conveyance system condition assessment by January 1, 2013.

The following conditions must be incorporated into the Oak Lodge Sanitary District SWMP by May 1, 2012:

ff. Add an OLSD Best Management Practice Summary table for each BMP identified under the planning measures, public education/outreach measures, structural measures, operations and maintenance measures, and illicit discharge measures section identified in Appendix A of the 2010 MS4 annual report. The tables must include information related to the BMP, BMP Description, Schedule for Implementation, and Performance Measure (i.e., Measurable Goal) as identified in Appendix A of the 2010 MS4 annual report. The tables must also incorporate and align with the information for BMPs described in the July 2008 SWMP.

gg. Add measurable goals to BMPs for the conveyance system components, catch basins and pollution control manholes in Section 4.1.1. of the SWMP to annually inspect storm sewers, culverts, inlets, ditches, swales, catch basins and pollution control manholes owned or operated by Oak Lodge Sanitary District.

The following conditions must be incorporated into the Clackamas County Department of Transportation and Development SWMP by May 1, 2012:

hh. BMP 7: Add a second bullet point under the measurable goal to conduct a minimum of one unscheduled inspection at all active construction sites.

ii. BMP 15: Modify the first bullet point under the measurable goals to formally adopt the 2009 ODOT Routine Road Maintenance Manual by January 1, 2013. Add a third bullet point under the measurable goals to inspect 100% ditches on a 3-year cycle. Add a fourth bullet point under measurable goals to clean 100% of catch basins on a 3-year cycle. Add a fifth bullet point under measurable goals to sweep arterial roads a minimum of four times per year.

9. Implementation Schedule

The following implementation schedule provides a summary of due dates for the permit conditions identified in Schedule B & Schedule D.

PERMIT CONDITION	SUMMARY OF IMPLEMENTATION SCHEDULE ACTIVITIES	DUE DATE
Monitoring Plan and Environmental Monitoring – B.1.b, B.2 & Table B-1	1. Submit monitoring plan	September 1, 2012
	2. Implement an approved monitoring plan	October 1, 2012
Annual Report – B.5	1. Submit annual report	November 1 - annually
Permit Renewal Application Package – B.6	1. Submit permit renewal package	180 days prior to permit expiration
303(d) List Evaluation – D.2	1. Submit 303(d) list evaluation report	November 1, 2015
Total Maximum Daily Load (TMDL) – D.3	1. Submit Wasteload Allocation Attainment Assessment	November 1, 2015
	2. Submit TMDL Pollutant Load Reduction Evaluation	November 1, 2015
	3. Submit TMDL Pollutant Load Reduction Benchmark	180 days prior to permit expiration
Adaptive Management – D.4	1. Submit Adaptive Management Approach	November 1, 2012
SWMP Measurable Goals – D.6	1. Incorporate SWMP Measurable Goal conditions	May 1, 2012

10. Definitions:

a. **Adaptive Management:** A structured, iterative process designed to refine and improve stormwater programs over time by evaluating results and adjusting actions on the basis of what has been learned.

b. **Antecedent dry period:** The period of dry time between precipitation events greater than 0.1 inch of precipitation.

c. **Best Management Practices (BMPs):** The schedule of activities, controls, prohibition of practices, maintenance procedures and other management practices designed to prevent or

reduce pollution. BMPs also include treatment requirements, operating procedures and practices to control stormwater runoff.

d. **Dry-weather field screening pollutant parameter action levels**: Pollutant concentrations or concentration ranges used by a co-permittee to identify an illicit discharge may be present and further investigation is needed.

e. **Green Infrastructure (GI)**: A comprehensive approach to water quality protection defined by a range of natural and built systems and practices that use or mimic natural hydrologic processes to infiltrate, evapotranspirate, or reuse stormwater runoff on the site where the runoff is generated.

f. **Illicit Discharge**: Any discharge to a municipal separate storm sewer system that is not composed entirely of stormwater except discharges authorized under Section A.4.a.xii., discharges permitted by a NPDES permit or other state or federal permit, or otherwise authorized by the Department.

g. **Impervious Surface:** Any surface resulting from development activities that prevents the infiltration of water or results in more runoff than in the undeveloped condition. Common impervious surfaces include: building roofs, traditional concrete or asphalt paving on walkways, driveways, parking lots, gravel roads, and packed earthen materials.

h. **Instream:** A location within the defined bed and banks of a waterway that carries perennial or intermittent flows of surface water for all or part of the year, including rivers and creeks.

i. **Low Impact Development (LID)**: A stormwater management approach that seeks to mitigate the impacts of increased runoff and stormwater pollution using a set of planning, design and construction approaches and stormwater management practices that promote the use of natural systems for infiltration, evapotranspiration, and reuse of rainwater, and can occur at a wide range of landscape scales (i.e., regional, community and site).

j. **Maximum Extent Practicable (MEP):** The statutory standard that establishes the level of pollutant reductions that operators of regulated MS4s must achieve. This standard is considered met if the conditions of the permit are met.

k. **Measurable Goals:** BMP objectives or targets used to identify progress of SWMP implementation. Measurable goals are prospective and, wherever possible, quantitative. Measurable goals describe *what* the co-permittee intends to do and *when* they intend to do it.

l. **Redevelopment:** A project on a previously developed site that results in the addition or replacement of impervious surface.

m. **Replace or Replacement:** The removal of an impervious surface that exposes soil followed by the placement of an impervious surface. Replacement does not include repair or maintenance activities on structures or facilities taken to prevent decline, lapse or cessation in the use of the existing impervious surface as long as no additional hydrologic impact results

from the repair or maintenance activity.

n. **Stormwater Management Program:** A comprehensive set of activities and actions, including policies, procedures, standards, ordinances, criteria, and best management practices established to reduce the discharge of pollutants from the Municipal Separate Storm Sewer System to the Maximum Extent Practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.

o. **Time of Concentration:** Travel time for a drop of water to travel from most hydrologically remote location in a defined catchment to the outlet for that catchment where remoteness relates to time of travel rather than distance.

p. **TMDL Pollutant Load Reduction Benchmark (TMDL benchmark):** An estimated total pollutant load reduction target for each parameter or surrogate, where applicable, for waste load allocations established under an EPA-approved TMDL. A benchmark is the anticipated pollutant load reduction goal to be achieved during the permit cycle through the implementation of the stormwater management program and BMPs identified in the SWMP. A benchmark is used to measure the effectiveness of the stormwater management program in making progress toward the waste load allocation, and is a tool for guiding adaptive management. A benchmark is not a numeric effluent limit; rather it is an estimated pollutant reduction target that is subject to the maximum extent practicable standard. Benchmarks may be stated as a pollutant load range based upon the results of a pollutant reduction empirical model.

q. **Water Quality Trend Analysis:** A statistical analysis of in-stream water quality data to identify improvement or deterioration.

r. **Waters of the State:** Lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters) that are located wholly or partially within or bordering the state or within its jurisdiction.

SCHEDULE F
NPDES Permit General Conditions for Municipal Separate Storm Sewer Systems

SECTION A. STANDARD CONDITIONS

1. Duty to Comply with Permit
   The co-permittees must comply with all conditions of this permit. Failure to comply with any permit condition is a violation of the Clean Water Act and Oregon Revised Statutes (ORS) 468B.025, and 40 Code of Federal Regulations (CFR) §122.41(a), and grounds for an enforcement action. Failure to comply is also grounds for the Department to modify, revoke, or deny renewal of a permit.

2. Penalties for Water Pollution and Permit Condition Violations
   a. ORS 468.140 allows the Department to impose civil penalties up to $10,000 per day for violation of a term, condition, or requirement of a permit. Additionally 40 CFR §122.41(a) provides that any person who violates any permit condition, term, or requirement may be subject to a federal civil penalty not to exceed $32,500 per day for each violation.

   b. Under ORS 468.943 and 40 CFR §122.41(a), unlawful water pollution, if committed by a person with criminal negligence, is punishable by a fine of up to $25,000 imprisonment for not more than one year, or both. Each day on which a violation occurs or continues is a separately punishable offense.

   c. Under ORS 468.946, a person who knowingly discharges, places, or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape or be carried into the waters of the state is subject to a Class B felony punishable by a fine not to exceed $200,000 and up to 10 years in prison. Additionally, under 40 CFR §122.41(a) any person who knowingly discharges, places, or causes to be placed any waste into the waters of the state or in a location where the waste is likely to escape into the waters of the state is subject to a federal civil penalty not to exceed $100,000, and up to 6 years in prison.

3. Duty to Mitigate
   The co-permittees must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment. In addition, upon request of the Department, the permittee must correct any adverse impact on the environment or human health resulting from noncompliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

4. Duty to Reapply
   If any or all of the co-permittees wish to continue an activity regulated by this permit after the expiration date of this permit, the co-permittee must apply to have the permit renewed. The application must be submitted at least 180 days before the expiration date of this permit.

   The Department may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date.

5. Permit Actions
This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:
   a. Violation of any term, condition, or requirement of this permit, a rule, or a statute
   b. Obtaining this permit by misrepresentation or failure to disclose fully all material facts
   c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge
   d. The permittee is identified as a Designated Management Agency or allocated a waste load under a Total Maximum Daily Load (TMDL)
   e. New information or regulations
   f. Modification of compliance schedules
   g. Requirements of permit reopener conditions
   h. Correction of technical mistakes made in determining permit conditions
   i. Determination that the permitted activity endangers human health or the environment
   j. Other causes as specified in 40 CFR §§122.62, 122.64, and 124.5

   The filing of a request by the co-permittee for a permit modification, revocation or reissuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition. The permittee must comply with all terms, conditions of the permit pending approval.

6. Toxic Pollutants
The co-permittee must comply with any applicable effluent standards or prohibitions established under Oregon Administrative Rules (OAR) 340-041-0033 for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

7. Property Rights and Other Legal Requirements
The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, or authorize any injury to persons or property or invasion of any other private rights, or any infringement of federal, tribal, state, or local laws or regulations.

8. Permit References
Except for effluent standards or prohibitions established under OAR 340-041-0033 for toxic pollutants and standards for sewage sludge use or disposal established under Section 405(d) of the Clean Water Act, all rules and statutes referred to in this permit are those in effect on the date this permit is issued.

9. Permit Fees
The co-permittee must pay the fees required by OAR 340-045-0070 to 0075.
The co-permittee must pay annual compliance fees by the last day of the month prior to when the permit was issued. For example, if the permit was issued or last renewed in April, the due date will be March 31st. If the payment of annual fees is 30 days or more past due, the permit registrant must pay 9% interest per annum on the unpaid balance. Interest will accrue until the fees are paid in full. If the Department does not receive payment of annual fees when they are due, the Department will refer the account to the Department of Revenue or to a private

collection agency for collection.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance
   The co-permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the permittees only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Activity Not a Defense
   It must not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this permit.

3. Removed Substances
   Solids or other pollutants removed in the course of maintaining the MS4 must be disposed of in such a manner as to prevent any pollutant from such materials from entering waters of the state, causing nuisance conditions, or creating a public health hazard.

SECTION C. MONITORING AND RECORDS

1. Representative Sampling
   Sampling and measurements taken as required under this Permit must be representative of the volume and nature of the monitored discharge. All samples must be taken at the monitoring points specified in this permit, and must be taken, unless otherwise specified, before the effluent joins or is diluted by any other waste stream, body of water, or substance. Monitoring points may not be changed without notification to and the approval of the Department.

2. Monitoring Procedures
   Monitoring must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in this permit or subsequent permit actions.

3. Penalties of Tampering
   The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit may, upon conviction, be punished by a fine of not more than $10,000 per violation, imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, punishment is a fine not more than $20,000 per day of violation, or by imprisonment of not more than four years, or both.

4. Additional Monitoring by the Co-permittees
   If the co-permittees monitor any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR part 136 or as specified in this permit, the results of this

monitoring must be included in the calculation and reporting of the data submitted in annual reports required by Schedule B. Such increased frequency must also be indicated.

5. Retention of Records
The co-permittees must retain records of all monitoring information, including: all calibration, maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Department at any time.

6. Records Contents
Records of monitoring information must include:
   a. The date, exact place, time, and methods of sampling or measurements;
   b. The individual(s) who performed the sampling or measurements;
   c. The date(s) analyses were performed;
   d. The individual(s) who performed the analyses;
   e. The analytical techniques or methods used; and
   f. The results of such analyses.

7. Inspection and Entry
The co-permittees must allow the Department representative upon the presentation of credentials to:
   a. Enter upon a co-permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
   c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, and
   d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by state law, any substances or parameters at any location within the MS4.

SECTION D. REPORTING REQUIREMENTS

1. Planned Changes
The permittee must comply with OAR chapter 340, division 52, "Review of Plans and Specifications" and 40 CFR §122.41(1)(l). Except where exempted under OAR chapter 340, division 52, no construction, installation, or modification involving disposal systems, treatment works, sewerage systems, or common sewers may be commenced until the plans and specifications are submitted to and approved by the Department. The permittee must give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility.

2. Anticipated Noncompliance
The co-permittees must give advance notice to the Department of any planned changes in the

permitted facility or activities that may result in noncompliance with permit requirements.

3. Transfers
This permit may be transferred to a new co-permittee(s) provided the transferee(s) acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of the permit and the rules of the Commission. No permit may be transferred to a third party without prior written approval from the Department. The Department may require modification, revocation, and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act (see 40 CFR §122.61; in some cases, modification or revocation and reissuance is mandatory). The co-permittees must notify the Department when a transfer of property interest takes place that results in a change of co-permittee(s).

4. Compliance Schedule
Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date. Any reports of noncompliance must include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirements.

5. Duty to Provide Information
The co-permittees must furnish to the Department within a reasonable time any information that the Department requests to determine compliance with this permit. The co-permittees must also furnish to the Department, upon request, copies of records required to be kept by this permit.

Other Information: When a co-permittee becomes aware that it has failed to submit any relevant facts or has submitted incorrect information in a permit application or any report to the Department, it must promptly submit such facts or information.

6. Signatory Requirements
All applications, reports or information submitted to the Department must be signed and certified in accordance with 40 CFR §122.22.

7. Falsification of Information
Under ORS 468.953, any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, is subject to a Class C felony punishable by a fine not to exceed $100,000 per violation and up to 5 years in prison. Additionally, according to 40 CFR §122.41(k)(2), any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit including monitoring reports or reports of compliance or non-compliance must, upon conviction, be punished by a federal civil penalty not to exceed $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

SECTION E. DEFINITIONS

1. *CFR* means Code of Federal Regulations.
2. *Clean Water Act* or *CWA* means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483 and 97-117; 33 U.S.C. 1251 et seq.
3. *Department* means Department of Environmental Quality.
4. *Director* means Director of the Department of Environmental Quality.
5. *Flow-Weighted Composite Sample* means a sample formed by collection and mixing discrete samples taken periodically and based on flow.
6. *Grab Sample* means an individual discrete sample collected over a period of time not to exceed 15 minutes.
7. *Illicit Discharges* means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.
8. *Major Outfall* means a municipal separate storm sewer outfall that discharges from a single pipe with an inside diameter 36 inches or more or its equivalent (discharge from a single conveyance other than circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm sewers that receive stormwater from lands zoned for industrial activities (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more).
9. *mg/L* means milligrams per liter.
10. *mL/L* means milliliters per liter.
11. *MS4* means a municipal separate storm sewer system.
12. *Municipal Separate Storm Sewer System* means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):
    a. Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of sewage, industrial wastes, stormwater or other wastes, including special districts under State Law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian Tribal organization, or a designated and approved management agency under §208 of the CWA that discharges to waters of the United States;
    b. Designed or used for collection or conveying stormwater;
    c. Which is not a combined sewer; and
    d. Which is not part of a Publicly Owned Treatment Works (POTW) as defined by 40 CFR §122.2.
13. *Outfall* means a point source as defined by 40 CFR §122.2 at the point where a municipal separate storm sewer discharges to waters of the United States and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other waters of the United States and are used to convey waters of the United States.
14. *Permit* means the NPDES municipal separate storm sewer system (MS4) permit specified herein, authorizing the permittees listed on Page 1 of this permit to discharge from the MS4.
15. *Stormwater* means stormwater runoff, snowmelt runoff, and surface runoff and drainage.
16. *Year* means calendar year except where otherwise defined.

Appendix B
MS4 NPDES Permit Stormwater Management Plan for Clackamas County Service District No. 1 and the City of Happy Valley
April 27, 2012

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

April 27, 2012

WATER ENVIRONMENT SERVICES
A Department of Clackamas County

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			
	Applicable BMPs		
Schedule A.4.a Permit Requirement	1: Conduct Dry Weather Inspections	2: Implement the Spill Response Program	3: Respond to Reports of Illicit Discharges
i. Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the permittee's MS4.	■		
ii. Include documentation in an enforcement response plan or similar document by November 1, 2012 describing the enforcement response procedures the co-permittee will implement when an illicit discharge investigation identifies a responsible party.	■		
iii. Develop or identify pollutant parameter action levels that will be used as part of the field screening. The action levels will identify concentrations for identified pollutants that, if exceeded, will require further investigation, including laboratory sample analyses, to identify the source of the illicit discharge. The pollutant parameter action levels and rationale for using the action levels must be documented in an enforcement response plan or similar document, and reported to the Department by November 1, 2012.	■		
iv. Conduct annual dry-weather inspection activities during the term of the permit. The dry-weather field screening activities must be documented and include: 1) General observation; 2) Field Screening; and 3) Laboratory Analysis.	■		

SWMP Component #1: Illicit Discharge Detection and Elimination			
	Applicable BMPs		
Schedule A.4.a Permit Requirement	1: Conduct Dry Weather Inspections	2: Implement the Spill Response Program	3: Respond to Reports of Illicit Discharges
v. Identify response procedures to investigate portions of the MS4 that, based on the results of general observations, field screening, laboratory analysis or other relevant information, such as a complaint or referral, indicates the likely presence of an illicit discharge. The response procedures must reflect the goal to eliminate the illicit discharge in an expeditious manner, as specified in subsection vii. below.	■		■
vi. Maintain a system for documenting illicit discharge complaints or referrals, and suspected illicit discharge investigation activities.		■	■
vii. Once the source of an illicit discharge is determined, the co-permittee must take appropriate action to eliminate the illicit discharges, including an initial evaluation of the feasibility to eliminate the discharge, within 5 working days. If the co-permittee determines that the elimination of the illicit discharge will take more than 15 working days due to technical, logistical or other reasonable issues, the co-permittee must develop and implement an action plan to eliminate the illicit discharge in an expeditious manner. The action plan must be completed within 20 working days of determining the source of an illicit discharge. In lieu of developing and implementing an individual action plan for common types of illicit discharges, the co-permittee may document and implement response procedures, a response plan or similar document. The action plan, response procedures, response plan or similar document must include a timeframe for elimination of the illicit discharge as soon as practicable.	■		
viii. Describe and implement procedures to prevent, contain, respond to and mitigate spills that may discharge into the MS4. Spills, or other similar illicit discharges, that may endanger human health or the environment must be reported in accordance with all applicable federal and state laws, including proper notification to the Oregon Emergency Response System	■		■
ix. In the case of a known illicit discharge that originates within the District's MS 4 regulated area and that discharges directly to a storm sewer system or property under the jurisdiction of another municipality, the District must notify the affected municipality as soon as practicable, but no longer than one working day.	■		

SWMP Component #1: Illicit Discharge Detection and Elimination			
	Applicable BMPs		
Schedule A.4.a Permit Requirement	1: Conduct Dry Weather Inspections	2: Implement the Spill Response Program	3: Respond to Reports of Illicit Discharges
x. In the case of a known illicit discharge that is identified within the District's regulated area, but is determined to originate from a contributing storm sewer system or property under the jurisdiction of another municipality, the District must notify the contributing municipality or municipality with jurisdiction as soon as practicable, but no longer than one working day.	■		
xi. Maintain maps identifying known co-permittee-owned MS4 outfalls discharging to waters of the State. The dry-weather screening locations must be uniquely identified on maps by November 1, 2012. If the co-permittee identifies the need to modify these maps, the maps must be update din digital or hard-copy within six months of identification.	■		
xii. Unless the following non-stormwater discharges are identified in a particular case as a significant source of pollutants to waters of the State by the permittee or the Department, they are not considered illicit discharges and are authorized by this permit: (see Schedule A.4.a.xi for list of discharges). If a non-stormwater discharge is identified as a significant source of pollutants, the co-permittees must develop and require implementation of appropriate BMPs to reduce the discharge of pollutants associated with the source.	■		

TABLE 1 – Illicit Discharge Detection and Elimination BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(i) Prohibit, through ordinance or other regulatory mechanism, illicit discharges into the permittee's MS4.*		
NPDES Permit Requirement – *(ii) Describe in an enforcement response plan or similar document the enforcement response procedures the permittee will implement when an illicit discharge investigation identifies a responsible party.*		
NPDES Permit Requirement – *(iii) Develop or identify pollutant parameter action levels that will be used as part of the field screening. The action levels will identify concentrations for identified pollutants that, if exceeded, will require further investigation, including laboratory sample analyses, to identify the source of the illicit discharge. The pollutant parameter action levels and rationale for using the action levels must be documented in an enforcement response plan or similar document, and reported to the Department by November 1, 2012.*		
NPDES Permit Requirement – *(iv) Conduct annual dry-weather inspection activities during the term of the permit. By November 1, 2012, the dry-weather inspection activities must include annual field screening of all priority locations identified and documented by the co-permittee. Priority locations must, where possible, be located at an accessible location downstream of any source of suspected illegal or illicit activity or other location as identified by the co-permittee. Priority locations must be based on a consideration of hydrological conditions, total drainage area of the location, population density of the location, traffic density, age of the structures or building in the area, history of the area, land use types, personnel safety, accessibility, historical complaints or other appropriate factors as identified by the co-permittee. The dry-weather field screening activities must occur at least 72-hours after a precipitation event. The dry-weather field screening activities must be documented and include: 1) General observation; 2) Field Screening; and 3) Laboratory Analysis.*		
NPDES Permit Requirement – *(v) Identify response procedures to investigate portions of the MS4 that, based on the results of general observations, field screening, laboratory analysis or other relevant information, such as a complaint or referral, indicates the likely presence of an illicit discharge. The response procedures must reflect the goal to eliminate the illicit discharge in an expeditious manner, as specified in subsection vii. below.*		
NPDES Permit Requirement – *(vi) Once the source of an illicit discharge is determined, the co-permittee must take appropriate action to eliminate the illicit discharges, including an initial evaluation of the feasibility to eliminate the discharge, within 5 working days. If the co-permittee determines that the elimination of the illicit discharge will take more than 15 working days due to technical, logistical or other reasonable issues, the co-permittee must develop and implement an action plan to eliminate the illicit discharge in an expeditious manner. The action plan must be completed within 20 working days of determining the source of an illicit discharge. In lieu of developing and implementing an individual action plan for common types of illicit discharges, the co-permittee may document and implement response procedures, a response plan or similar document. The action plan, response procedures, response plan or similar document must include a timeframe for elimination of the illicit discharge as soon as practicable.*		
NPDES Permit Requirement – *(vii) Take appropriate action to remove illicit discharges from the MS4 within [5 working days] of detection. If it has been determined that removal of the illicit discharge will take more than 5 working days due to technical or other reasonable issues, the co-permittee must notify the Department within 5 working days of detection. The co-permittee must develop an action plan to eliminate the illicit discharge and submit the action plan to the Department within 15 working days of detection. The action plan must include an appropriate timeframe for elimination.*		
NPDES Permit Requirement – *(viii) Describe and implement procedures to prevent, contain, respond to and mitigate spills that may discharge into the MS4. Spills, or other similar illicit discharges, that may endanger human health or the environment must be reported in accordance with all applicable federal and state laws, including proper notification to the Oregon Emergency Response System.*		
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.*		

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
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.* **NPDES Permit Requirement** – *(xi) Maintain maps identifying known co-permittee-owned MS4 outfalls discharging to waters of the State. The dry-weather screening locations must be uniquely identified on maps by November 1, 2012. If the co-permittee identifies the need to modify these maps, the maps must be update din digital or hard-copy within six months of identification.*		
NPDES Permit Requirement – *(xii) Unless the following non-stormwater discharges are identified in a particular case as a significant source of pollutants to waters of the State by the permittee or the Department, they are not considered illicit discharges and are authorized by this permit: (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.*		
1: Conduct Dry Weather Inspections	**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. Storm sewer outfalls in the MS4-permitted area that are owned by Clackamas County DTD and/or the District are divided into two categories: major and minor outfalls. According to the MS4 permit and EPA, a major outfall is an outfall which: • is a large pipe (≥36" inside diameter), or • is a conveyance other than circular pipe that serves a drainage area of more than 50 acres, or • is a single pipe (≥12" inside diameter) if it also receives any drainage from lands zoned for industrial activity, or • is a single conveyance other than a circular pipe which receives drainage from more than two acres of land zoned for industrial activity. 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	(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
	groundwater which commonly seeps into storm sewer systems, for these relatively clean waters will dilute any illicit discharges that may be within the storm sewer system, making their detection difficult or impossible. A DEQ-approved inspection form is completed during each site visit. Data collected includes, but is not limited to, the following: • Inspector(s) name(s) • Date and time of visit • Water flow (present or absent) • If flow is present, unusual odors, colors, and floating/suspended solids are noted if they're observed. If unusual odors, colors, and/or solids are observed, an upstream investigation for the possible presence of an illicit discharge is promptly conducted. • If flow is present, water quality data are collected with portable, hand-held meters. Parameters monitored for usually include pH, conductivity, temperature, total residual chlorine, and total dissolved solids. If excessive levels of any pollutant are detected (based on a list of pollutant parameter action levels), an upstream investigation for the possible presence of an illicit discharge is promptly conducted. See BMP #12 for a description of how CCSD #1 facilitates public reporting of illicit discharges. All wastewaters that are suspected of being an illicit discharge are investigated and documented by District staff. Copies of important documents which pertain to each investigation are often referred to DEQ's Northwest Region for review, as DEQ continues to reserve the right to assume a direct role in any case involving the discharge of waste to public water bodies. When an illicit discharge is identified, control options may be required. Control options that may be applied or recommended by the District include, but are not limited to: • The removal of certain pollutants from the wastewater prior to discharge to the storm sewer system (i.e. cease usage of soap when washing). • 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.	

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	• With the necessary permits, discharge the wastewater to CCSD#1's sanitary sewer system. 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. **Measurable Goals:** • Inspect major or priority outfalls for the presence of illicit discharges at least once per year. • Update maps of major outfalls on an annual basis. • Update dry weather field screening program to address new permit requirements by November 1, 2012.	

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(vi) Require spill preventative measures, and upon notification, respond to, contain and mitigate spills that may discharge into the MS4. Spills that may endanger health or the environment must be reported in accordance with all applicable federal and state laws, including proper notification to the Oregon Emergency Response System.*		
2: Implement the Spill Response Program	**Responsible for Implementation:** CCSD #1 and DTD **Permit Year:** Ongoing **BMP Description:** The District's Spill Response Program prevents, contains, and responds to spills of dangerous, hazardous and other materials in the MS4-permitted areas of 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. The District created a draft Standard Operating Procedure (SOP) in 1999 for addressing and responding to spills of dangerous and/or hazardous materials. This SOP was revised and finalized in 2004. The 2004 SOP provides guidance to District employees who administer the Spill Response Program. Specific guidance is provided by the SOP in the following areas: • Determining if the incident needs to be reported to Oregon Emergency Response System (OERS - see the next paragraph in this section). • Determining if a site visit needs to be performed by District personnel. If a site visit is not to be performed, guidance on providing a proper referral of the incident to another government agency is provided. • How to conduct a safe and effective site inspection as a first responder to an incident. • How to prioritize activities at the site of a release. Heavy emphasis is placed on maintaining the personal safety of all persons, including the District's Spill Response Program representative. In addition, all District responders are obligated to call for support, if warranted, from agencies which may also have jurisdiction for the incident, including DEQ and 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.	(1) Number of reported spills to the MS4 system. (2) Number and type of response to the reported spills.

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

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
3: Respond to reports involving illicit discharges	**Responsible for Implementation:** CCSD #1 **Permit Year:** Ongoing **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: • 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. **Measurable Goals:** • Respond to reports involving alleged illicit discharges within two weeks.	(1) Number of alleged illicit discharges and non-stormwater discharges which were reported each year (2) Number of illicit discharges that were controlled.

SWMP Component #2
Industrial and Commercial Facilities

NPDES permit requirements are listed below, followed by 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	
Schedule A.4.b Permit Requirement	4: Screen existing and New Industrial Facilities	5: Address Other Industrial Facilities
i. Screen existing and new industrial facilities to assess whether they have the potential to be subject to an industrial stormwater NPDES permit or have the potential to contribute a significant pollutant load to the MS4.	■	
ii. Within 30 days after the facility is identified, notify the industrial facility and the Department that an industrial facility is potentially subject to an industrial stormwater NPDES permit.	■	
iii. Implement a program that establishes the priorities and procedures for inspection of and implementation of stormwater control measures for discharges from industrial or commercial areas that have been identified as sources that contribute a significant pollutant load to the MS4.		■

TABLE 2 – Industrial and Commercial Facility BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(i) Screen existing and new industrial facilities to assess whether they have the potential to be subject to an industrial stormwater NPDES permit or have the potential to contribute a significant pollutant load to the MS4.* **NPDES Permit Requirement** – *(ii) Within 30 days after the facility is identified, notify the industrial facility and the Department that an industrial facility is potentially subject to an industrial stormwater NPDES permit.*		
4: Screen Existing and New Industrial Facilities	**BMP Owner:** 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:** • Review new industrial development applications once during the permit term to identify additional facilities needing to obtain 1200-Z permits.	1) Track the number of existing or new industrial facilities subject to a stormwater industrial NPDES permit during the permit term.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(iii) Implement an updated strategy to reduce pollutants in stormwater discharges to the MS4 from industrial and commercial facilities where site-specific information has identified a discharge as a source that contributes a significant pollutant load to the MS4. The strategy must include a description of the rationale for identifying commercial and industrial facilities as a significant contributor, and establish the priorities and procedures for inspection of and implementation of stormwater control measures. This strategy must be implemented by July 1, 2013, and applied within one calendar year from the date*.		
5: Address Other Industrial Facilities	**Responsible for Implementation:** CCSD #1 **Permit Year:** Ongoing **BMP Description:** The facilities that are addressed by the District for this BMP are those that are not required to obtain a 1200Z permit, and/or are anticipated to contribute a substantial load of pollutants to the MS4. Facilities will primarily be inspected on a complaint-driven basis, but it is possible that some inspections will be conducted by the District during source tracking activities if the District's storm event monitoring work or routine monitoring work shows that excessive levels of one or more pollutants are present. All facilities that are the subject of a complaint will be inspected in a timely manner by District staff. The implementation of control measures for stormwater discharges from these facilities will be deemed necessary by the District if the presence of excess levels of stormwater pollution can be confirmed by the District. For instances where the presence of excess levels of pollution in stormwater has been confirmed by the District, and in the event that the discharger's initial attempts to improve stormwater quality do not produce the required improvement, then District personnel will continue to provide guidance and technical assistance until the facility's stormwater quality improves. The presence of excess levels of pollution in stormwater can generally be confirmed by two general methods: visual and analytical. Analytical methodologies include hand-held meters, and those performed by an environmental laboratory. The District will use visual or analytical methods at the District's discretion. 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. In addition, the District has implemented a Storm Drain Cleaning Assistance Program. See BMP #28. **Measurable Goals:** • Notify and work with industries to improve stormwater management if an inspection is	(1) The number of inspections performed, and where applicable, monitoring data collected. (2) The number of letters, enforcement actions, or other contacts made. (3) Number of pretreatment inspections performed.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	conducted that indicates improvement is needed.	

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				
	Applicable BMPs			
Schedule A.4.c Permit Requirement	6: Conduct Procedures for Site Planning	7: Implement Requirements for Structural and Non-Structural Best Management Practices	8: Conduct Training for Construction Site Operators	9: Identify Priorities for Inspecting Sites and Conducting Enforcement Activities
i. Include ordinances or other enforceable regulatory mechanism that requires erosion and sediment controls designed, implemented, and maintained to prevent adverse impacts to water quality and minimize the transport of contaminants to waters of the State. By November 1, 2014, the construction site runoff control program ordinances or other enforceable regulatory mechanism must apply to construction activities that result in a land disturbance of 1,000 square feet or greater	■	■		
ii. Require construction site operators to develop site plans and implement and maintain effective erosion and sediment control best management practices.	■	■	■	
iii. Require construction site operators to prevent or control non-stormwater waste that may cause adverse impacts to water quality such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste.	■	■	■	
iv. Establish site plan review procedures to ensure stormwater BMPs are appropriate and address the construction activities being proposed. At a minimum, construction site erosion and sediment control plans	■	■		

SWMP Component #3: Construction Site Runoff Control				
	Applicable BMPs			
Schedule A.4.c Permit Requirement	6: Conduct Procedures for Site Planning	7: Implement Requirements for Structural and Non-Structural Best Management Practices	8: Conduct Training for Construction Site Operators	9: Identify Priorities for Inspecting Sites and Conducting Enforcement Activities
for sites disturbing one acre or greater must be developed in accordance with the State of Oregon's 1200-C permit requirements.				
v. Perform on-site inspections in accordance with documented procedures and criteria to ensure the approved erosion and sediment control plan is properly implemented…. Inspections must be documented, including photographs and monitoring results as appropriate.				■
vi. Describe in an enforcement response plan or similar document the enforcement response procedures the permittee will implement. The enforcement response procedures must use all means necessary to ensure construction activities are in compliance with the ordinances or other regulatory mechanisms.				■

TABLE 3 – Construction Site Runoff Control BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(i) Include ordinances or other enforceable regulatory mechanism that requires erosion and sediment controls designed, implemented, and maintained to prevent adverse impacts to water quality and minimize the transport of contaminants to waters of the State*. By November 1, 2014, the construction site runoff control program ordinances or other enforceable regulatory mechanism must apply to construction activities that result in a land disturbance of 1,000 square feet or greater **NPDES Permit Requirement** – *(ii) Require construction site operators to develop site plans and implement and maintain effective erosion and sediment control best management practices.* **NPDES Permit Requirement** – *(iii) Require construction site operators to prevent or control non-stormwater waste that may cause adverse impacts to water quality such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste.* **NPDES Permit Requirement** – *(iv) Establish site plan review procedures to ensure stormwater BMPs are appropriate and address the construction activities being proposed. At a minimum, construction site erosion and sediment control plans for sites disturbing one acre or greater must be developed in accordance with the State of Oregon's 1200-C permit requirements.*		

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
6: Conduct Procedures for Site Planning	**Responsible for Implementation:** CCSD #1 and Happy Valley **Permit Year:** Ongoing **BMP Description:** *CCSD#1 Service Area Development Review* The District reviews all development plans for new construction or redevelopment projects in the District's service area (disturbing sites of 800 ft^2 or greater) through the building permit process. All reviews are 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. 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). *City of Happy Valley Service Area Development Review* 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. The *Erosion Prevention and Sediment Control Planning and Design Manual* is part of the EPSC requirements and is also offered as an educational resource to the development community for preparation of plans for erosion prevention and sediment control by 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. **Measurable Goals:** • Review all applicable erosion and sediment control plans submitted as part of the building permit	(1) Annual number of permitted, active construction projects (i.e., those projects disturbing 800 s.f. or more). (2) Annual number of site plan reviews and approved plans.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	process.	
7: Implement Requirements for Structural and Non-Structural Best Management Practices	**Responsible for Implementation:** CCSD #1 and Happy Valley **Permit Year:** Ongoing **BMP Description:** *CCSD#1 Service Area* 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. *City of Happy Valley Service Area* 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. **Measurable Goals:** • 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.	See tracking measure for the previous BMP.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
8: Conduct Training for Construction Site Operators	**Responsible for Implementation:** CCSD #1 and Happy Valley **Permit Year:** Ongoing **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: • The *Erosion Prevention and Sediment Control Planning and Design Manual* was developed in coordination with multiple regional jurisdictions. It is available for contractors, citizens, or others involved with construction activities within the permit area. • The District 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. **Measurable Goals:** • Conduct training for new employees as appropriate and whenever there is a significant update to the Erosion Prevention and Sediment Control Planning and Design Manual.	(1) Track the number and type of educational and training events the District conducts and/or participates in annually.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(v) Perform on-site inspections in accordance with documented procedures and criteria to ensure the approved erosion and sediment control plan is properly implemented. Inspections of construction sites must include disturbed areas of the site, material and waste storage areas, stockpile areas, construction site entrances and exits, sensitive areas, discharge locations to the MS4 and receiving waters. Inspections must be documented, including photographs and monitoring results as appropriate.* **NPDES Permit Requirement** – *(vi) Describe in an enforcement response plan or similar document the enforcement response procedures the permittee will implement. The enforcement response procedures must use all means necessary to ensure construction activities are in compliance with the ordinances or other regulatory mechanisms.*		
9: Identify Priorities for Inspecting Sites and Conducting Enforcement Actions	**Responsible for Implementation:** CCSD #1 and Happy Valley **Permit Year:** Ongoing **BMP Description:** *CCSD#1 Service Area* 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 minimum of three (initial, unscheduled and final) during construction to verify proper implementation of required BMPs. Additional monitoring inspections are performed as necessary. Priorities for monitoring inspections are based on site-specific characteristics (i.e., watershed, grade, percent of soil cover to be removed, construction practices, season, and proximity to sensitive areas.) Based on the recommendations from the WAPs, the prioritization process has been formally codified and inspection resources are allocated based on priority. **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	(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
	control resources based on priority. The District monitors compliance with the erosion prevention and sediment control regulations and has the authority to issue deficiency notices, charge re-inspection fees, issue fines and stop land-disturbing development work at the site until provisions of the regulations are met. Records of activities are maintained on file at the District. Erosion control plans are filed as well as inspection reports that describe non-compliance/enforcement actions. *City of Happy Valley Service Area* 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. 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. 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. Enforcement procedures are documented in the District's rules and regulations. **Measurable Goals:** • District: Inspect construction sites disturbing 800 s.f. of land or more a minimum of three times 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 three times 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					
	Applicable BMPs				
Schedule A.4.d Permit Requirement	10: Public Education to Reduce Discharges of Pesticides, Herbicides, and Fertilizers	11: Proper Disposal to Reduce Discharges of Pesticides, Herbicides, and Fertilizers	12: Facilitate Public Reporting of Illicit Discharges, Spills, and Other Types of Improper Disposal Materials	13: Participate in a Public Education Effectiveness Evaluation	14: Training for Employees
i. Continue to implement a documented public education and outreach strategy that promotes pollutant source control and a reduction of pollutants in stormwater discharges….The public education and outreach strategy may incorporate cooperative efforts with other MS4 regulated permittees or efforts by other groups or organizations provided a mechanism is developed and implemented to track the public education and outreach efforts within the MS4 regulated area and the results of such efforts are reported annually.	■				
ii. Provide educational materials to the community or conduct equivalent outreach activities describing the impacts of stormwater discharges on water bodies and the steps or actions the public can take to reduce pollutants in stormwater runoff.	■		■		
iii. Provide public education on the proper use and disposal of pesticides, herbicides, fertilizers and other household chemicals if identified as a concern by the co-permittees.	■	■	■		

SWMP Component #4: Education and Outreach					
	Applicable BMPs				
Schedule A.4.d Permit Requirement	10: Public Education to Reduce Discharges of Pesticides, Herbicides, and Fertilizers	11: Proper Disposal to Reduce Discharges of Pesticides, Herbicides, and Fertilizers	12: Facilitate Public Reporting of Illicit Discharges, Spills, and Other Types of Improper Disposal Materials	13: Participate in a Public Education Effectiveness Evaluation	14: Training for Employees
iv. As appropriate, provide public education on the proper operation and maintenance of privately-owned or operated stormwater quality management facilities.	See Component #8: Structural Stormwater Facility Maintenance Program BMP : Private Water Quality Facility Maintenance Program				
v. Provide notice to construction site operators concerning where education and training to meet erosion and sediment control requirements can be obtained.	See Component #3: Construction Site Runoff Control BMP: Conduct training for Construction Site Operators				
vi. Conduct or participate in an effectiveness evaluation to measure the success of public education activities during the term of this permit. The effectiveness evaluation must focus on assessing changes in targeted behaviors. The results of the effectiveness evaluation must be used in the adaptive management of the education and outreach program, and reported to the Department no later than July 15, 2015.				■	
vii. Include training for municipal employees involved in MS4-related activities, as appropriate. The training should include stormwater pollution prevention and reduction from municipal operations, including, but not limited to, parks and open space maintenance, fleet and building maintenance, new municipal facility construction and related land disturbances, design and construction of street and storm drain systems, discharges from non-emergency fire fighting-related training activities, and stormwater system maintenance.					■

SWMP Component #4: Education and Outreach					
	Applicable BMPs				
Schedule A.4.d Permit Requirement	10: Public Education to Reduce Discharges of Pesticides, Herbicides, and Fertilizers	11: Proper Disposal to Reduce Discharges of Pesticides, Herbicides, and Fertilizers	12: Facilitate Public Reporting of Illicit Discharges, Spills, and Other Types of Improper Disposal Materials	13: Participate in a Public Education Effectiveness Evaluation	14: Training for Employees
viii. Promote, publicize and facilitate public reporting of illicit discharges through the use of newspapers, newsletters, utility bills, door hangars, radio public service announcements, videos, televised council meetings, brochures, signs, posters or other effective methods.	■		■		

TABLE 4 – Education and Outreach BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(i) Continue to implement a documented public education and outreach strategy that promotes pollutant source control and a reduction of pollutants in stormwater discharges….The public education and outreach strategy may incorporate cooperative efforts with other MS4 regulated permittees or efforts by other groups or organizations provided a mechanism is developed and implemented to track the public education and outreach efforts within the MS4 regulated area and the results of such efforts are reported annually.* **NPDES Permit Requirement** – *(ii) Provide educational materials to the community or conduct equivalent outreach activities describing the impacts of stormwater discharges on water bodies and the steps or actions the public can take to reduce pollutants in stormwater runoff.* **NPDES Permit Requirement** – *(iii) Provide public education on the proper use and disposal of pesticides, herbicides, fertilizers and other household chemicals if identified as a concern by the co-permittees.* **NPDES Permit Requirement** – *(viii) Promote, publicize and facilitate public reporting of illicit discharges through the use of newspapers, newsletters, utility bills, door hangars, radio public service announcements, videos, televised council meetings, brochures, signs, posters or other effective methods.*		
10: Public Education to Reduce Discharges of Pesticides, Herbicides and Fertilizers	**Responsible for Implementation:** CCSD #1 **Permit Year:** Ongoing **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: • Articles in CCSD #1 newsletters • CCSD #1' website. U.S. Geological Survey publi*cations.* 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". • 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	(1) Track programs messages delivered, type of communication piece, and where appropriate, the number of people affected.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	throughout the Portland Metro area by many municipal partners, including the Districts. This group is called the Regional Coalition for Clean Rivers and Streams. • Brochures (disseminated at the CCSD #1 booth at fairs, for example) Common topics that are addressed by this program include: • Less harmful alternatives to the use of pesticides, herbicides, and fertilizers are provided. 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. **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. **Measurable Goals:** • 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
11: Proper Disposal Practices to Reduce Discharges of Pesticides, Herbicides and Fertilizers	**Responsible for Implementation:** CCSD #1 **Permit Year:** Ongoing **BMP Description:** When the District receives inquiries from the public about the proper disposal method for empty containers that once held pesticides/herbicides <u>or</u> for disposal of unwanted quantities of these products, citizens are promptly forwarded to Metro's informational phone number (503-234-3000). **Measurable Goals:** • Refer all pesticide/herbicide disposal related calls to Metro.	(1) Number of calls that CCSD#1 receives and refers to Metro annually.
12: Facilitate Public Reporting of Illicit Discharges and Spills and Other Types of Improper Disposal of Materials	**Responsible for Implementation:** CCSD #1 and Public & Government Relations **Permit Year:** Ongoing **BMP Description:** The District implements a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges and other types of improper disposal of materials into the MS4. After District staff have received a report which relates to one of these discharges, they investigate and, if appropriate, apply control measures. See BMP #3. <u>Illicit Discharges and Spills</u>**:** Through the periodic publication of articles in 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: • provided with guidance on determining what an illicit discharge is • told to keep at a safe distance and in an upwind direction from all spills • call 911 for certain high-priority incidents After citizens become aware of an illicit discharge or spill, they can contact District staff in person, by phone, or by email. <u>Other types of improper disposal of materials:</u> Information is transmitted to the public through the District's newsletter. On a periodic basis, articles on various relevant topics (for example, proper pet waste disposal and proper yard debris management) are published. In these news letter articles and in the direct conversations with the ratepayers that contact the District for guidance, citizens are encouraged to contact Metro for guidance on the proper disposal of	(1) Describe news articles reported per year when appropriate. (2) Describe type of public complaints received. Resulting follow up actions per year will be kept in a database.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	used oil and toxic materials. Metro provides its services throughout the Portland metropolitan area, including all portions of the District. When customers contact the District about disposal of these items, they're usually referred to Metro's hotline (503-234-3000) or encouraged to visit the nearest household hazardous waste facility located at Metro's South Transfer Station in Oregon City. **Measurable Goals:** • Include a relevant article in *The Citizen News* (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.	
NPDES Permit Requirement – *(iv) As appropriate, provide public education on the proper operation and maintenance of privately-owned or operated stormwater quality management facilities.*		
See Component #8: Structural Stormwater Facility Operations and Maintenance **BMP:** Private Water Quality Facility Maintenance Program (Table 8)		
NPDES Permit Requirement – *(v) Provide notice to construction site operators concerning where education and training to meet erosion and sediment control requirements can be obtained.*		
See Component #3: Construction Site Runoff Control **BMP:** Conduct Training for Construction Site Operators (Table 3)		

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(vi) Conduct or participate in an effectiveness evaluation to measure the success of public education activities during the term of this permit. The effectiveness evaluation must focus on assessing changes in targeted behaviors. The results of the effectiveness evaluation must be used in the adaptive management of the education and outreach program, and reported to the Department no later than July 1, 2015*		
13: Participate in a Public Education Effectiveness Evaluation	**Responsible Department:** CCSD #1 **Permit Year:** Ongoing **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. **Measurable Goal:** • Provide/compile information regarding a public education effectiveness evaluation over the permit term.	(1) Report on activities annually.
NPDES Permit Requirement – *(vii) Include training for municipal employees involved in MS4-related activities, as appropriate. The training should include stormwater pollution prevention and reduction from municipal operations, including, but not limited to, parks and open space maintenance, fleet and building maintenance, new municipal facility construction and related land disturbances, design and construction of street and storm drain systems, discharges from non-emergency fire fighting-related training activities, and stormwater system maintenance*		
14: Training for Employees	**Responsible Department:** CCSD #1 **Permit Year:** Ongoing **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. 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	(2) Track the number of employees receiving training in stormwater management annually.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	other waste waters to enter the system. **Measurable Goals:** • 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**
e) Co-permittees must implement 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 approach must include provisions for receiving and considering public comments on the monitoring plan due to the Department by September 1, 2012, annual reports, SWMP revisions, and the TMDL pollutant load reduction benchmark development.	■

TABLE 5 –Public Involvement and Participation

CCSD #1 BMP Descriptions	BMP Implementation	Performance Measures
a. **NPDES Permit Requirement -** (e) *Co-permittees must implement 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 approach must include provisions for receiving and considering public comments on the monitoring plan due to the Department by September 1, 2012, annual reports, SWMP revisions, and the TMDL pollutant load reduction benchmark development.*		
15: Provide for Public Participation with SWMP and Benchmark Submittals	**Responsible Department:** CCSD #1 **Permit Year:** Ongoing **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:** • Provide for public participation with the SWMP and pollutant load reduction benchmarks prior to the permit renewal application deadline. • Provide for public participation with the monitoring plan due to the Department by September 1, 2012	N/A

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			
	Applicable BMPs		
Schedule A.4.f Permit Requirement	16: Planning Procedures for New Development and Significant Redevelopment	17: Update Procedures for New Development and Redevelopment	18: BMP Sizing Tool Development to Address Hydromodification
i. By November 1, 2014, the post-construction stormwater pollutant and runoff control program applicable to new development and redevelopment projects that create or replace 5,000X ft^2 of impervious surface must meet the following conditions :1) Incorporate site-specific management practices that target natural surface or predevelopment hydrologic functions where practicable; 2) Minimize site specific post-development stormwater runoff volume and rates of discharges to the municipal separate storm sewer system (MS4)..; 3) Prioritize and implement Low-Impact Development (LID), Green Infrastructure (GI) or equivalent design and construction approaches; and, 4) Capture and treat 80% of the annual average runoff volume, based on a documented local or regional rainfall frequency and intensity.	■	■	■
ii. Co-permittees must eliminate code and development standard barriers that inhibit design and implementation techniques intended to minimize impervious surfaces and reduce stormwater runoff (e.g., Low Impact Development, Green Infrastructure), and have been identified by and are within the jurisdiction of the permittee….Co-permittees must review code and development standards, and modify ordinance, code or development standard barriers by November 1, 2014. If an ordinance, code or development standard barrier is identified at any subsequent to November 1, 2014, the applicable ordinance, code or development standard must be modified within three years.	■	■	

SWMP Component #6: Post-Construction Site Runoff			
	Applicable BMPs		
Schedule A.4.f Permit Requirement	**16: Planning Procedures for New Development and Significant Redevelopment**	**17: Update Procedures for New Development and Redevelopment**	**18: BMP Sizing Tool Development to Address Hydromodification**
iii. To reduce pollutants and mitigate the volume, duration, time of concentration and rate of stormwater runoff, the co-permittees must develop or reference an enforceable post-construction stormwater quality management manual or equivalent document by November 1, 2014 that, at a minimum, includes the following: 1) A minimum threshold for triggering the requirement for post-construction stormwater management control and the rationale for the threshold; 2) A defined design storm that allows for or identification of an acceptable continuous simulation method to address the capture and treatment of 80% of the annual average runoff volume; 3) Applicable LID, GI or similar stormwater runoff reduction approaches, including the practical use of these approaches; 4) Conditions where the implementation of LID, GI or equivalent approaches may be impracticable; and, 5) Best Management Practices… 6) polluntant removal efficiency performance goals that maximize the reduction in discharge of polluntants	■	■	■
iv. Co-permittees must review, approve and verify proper implementation of post-construction site plans for new development and redevelopment projects applicable to this section.	■	■	
v. Where a new development or redevelopment project site is characterized by factors limiting use of on-site stormwater management methods to achieve the post-construction site runoff standards, ….. … the Post-Construction Stormwater Management program must require equivalent pollutant reduction measures, such as off-site stormwater quality management. Offsite stormwater quality management may include off-site mitigation, such as using low impact development principles in the construction of a structural stormwater facility in the sub-basin, a stormwater quality structural facility mitigation bank, or a payment-in-lieu program.	■	■	

TABLE 6 – Post-Construction Site Runoff BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(i) By November 1, 2014, the post-construction stormwater pollutant and runoff control program applicable to new development and redevelopment projects that create or replace 5,000 ft^2 of impervious surface must meet the following conditions :1) Incorporate site-specific management practices that target natural surface or predevelopment hydrologic functions where practicable; 2) Minimize site specific post-development stormwater runoff volume and rates of discharges to the municipal separate storm sewer system (MS4) to lessen hydrological and water quality impacts from impervious surfaces; 3) Prioritize and implement Low-Impact Development (LID), Green Infrastructure (GI) or equivalent design and construction approaches; and, 4) Capture and treat 80% of the annual average runoff volume, based on a documented local or regional rainfall frequency and intensity.* **NPDES Permit Requirement –** *(ii) Co-permittees must eliminate code and development standard barriers that inhibit design and implementation techniques intended to minimize impervious surfaces and reduce stormwater runoff (e.g., Low Impact Development, Green Infrastructure), and have been identified by and are within the jurisdiction of the permittee. The co-permittees must minimize the applicable code and development standard barriers if a co-permittee identifies that the elimination of a code and development standard barrier conflicts with public and environmental health and safety standards. Co-permittees must review code and development standards, and modify ordiance, code or development standard by November 1, 2014. If an ordiance, code or development standard is identified at any time subsequent to November 1, 2014 the applicable ordiance, code or development standard must be modified within three years.* **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 November 1, 2014 that, at a minimum, includes the following: 1) A minimum threshold for triggering the requirement for post-construction stormwater management control and the rationale for the threshold; 2) A defined design storm that allows for or identification of an acceptable continuous simulation method to address the capture and treatment of 80% of the annual average runoff volume; 3) Applicable LID, GI or similar stormwater runoff reduction approaches, including the practical use of these approaches; 4) Conditions where the implementation of LID, GI or equivalent approaches may be impracticable; and, 5) Best Management Practices.* **NPDES Permit Requirement –** *(iv) Co-permittees must review, approve and verify proper implementation of post-construction site plans for new development and redevelopment projects applicable to this section.* **NPDES Permit Requirement –** *(v) Where a new development or redevelopment project site is characterized by factors limiting use of on-site stormwater management methods to achieve the post-construction site runoff standards, …..the Post-Construction Stormwater Management program must require equivalent pollutant reduction measures, such as off-site stormwater quality management. Offsite stormwater quality management may include off-site mitigation, such as using low impact development principles in the construction of a structural stormwater facility in the sub-basin, a stormwater quality structural facility mitigation bank, or a payment-in-lieu program.*		
16: Planning Procedures for New Development and Significant Redevelopment	**Responsible for Implementation:** CCSD #1 **Permit Year:** Ongoing **BMP Description:** This BMP covers the planning procedures for developing, implementing, and enforcing controls to reduce the discharge of pollutants from storm sewers collecting runoff from areas of significant development or redevelopment. These controls include county-funded capital improvement projects to provide new stormwater treatment facilities in previously developed areas and	(1) The number and type of flow control, water quality treatment or infiltration facilities installed in accordance with the

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	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 lots as currently zoned, and for developments having more than 5,000 square feet of impervious surface, on-site stormwater flow control, water quality treatment, and infiltration facilities are required. For 2 and 3 lot partitions that cannot be further partitioned under current zoning, flow control is not required if there are no downstream impacts. All subdivisions and partitions must include a storm water management plan. Infiltration facilities are required where soil conditions permit. With respect to maintenance of the private facilities that are constructed, the following applies: *Private Residential Storm System Maintenance (e.g. subdivisions)* Properties with private storm systems for new residential developments are required as part of the development approval process to inspect and maintain their storm systems themselves (e.g. through a Homeowners Association) or to sign an agreement that they will have the District staff maintain their systems on their behalf in exchange for a monthly on-site management fee. *Private Non-Residential Storm System Maintenance (e.g. commercial, industrial, etc)* Private storm systems for new non-residential development and redevelopment are required as part of the development approval process to sign an agreement to inspect, maintain and, if needed, clean their storm systems annually. Further, they must report on these activities to the District annually. The District is compiling a database of these private facilities to allow for tracking of compliance with the terms of the agreements. In addition, the District has implemented a Storm Drain Cleaning Assistance Program. See BMP #28. Maps are updated to include the location, type and drainage area of new facilities resulting from CCSD #1' post-construction standards. **Measurable Goals:** • Continue to implement and enforce controls for stormwater quality treatment from new and re-development. • Track the location, type, and drainage area of new water quality facilities using GIS. • Continue with work to compile a database of private facilities. • Annually, check in on compliance with terms of private facility maintenance agreements.	requirements. (2) Narrative to describe the status of the private facility database. (3) Narrative to describe results of tracking compliance with private facility maintenance agreements.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
17: Update Procedures for New Development and Significant Redevelopment	**Responsible for Implementation:** CCSD #1 **Permit Year:** 2012 **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, 2013. **Measurable Goals:** • Complete updates to standards to meet new permit requirements by June 30, 2013. • Complete guidance manual for developers to facilitate the implementation of the new standards by June 30, 2013.	(1) Track Status of Adopting

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
18: BMP Sizing Tool Development to Address Hydromodification	**Responsible for Implementation:** CCSD #1 **Permit Year:** Ongoing. **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. **Measurable Goal:** • The primary goal is to develop, by June 30, 2013, 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.	(1) Net impervious area treated by LID. (2) Number of applications submitted using tool. (3) Customer Feedback/ Community Relations.

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							
	Applicable BMPs						
Schedule A.4.g Permit Requirement	19: Street Sweeping	20: Operations and Maintenance for Public Streets	21: Proper Road Maintenance to Reduce the Discharge of Pesticides, Herbicides, and Fertilizer	22: Landscape Maintenance Practices to Reduce the Discharge of Pesticides, Herbicides, and Fertilizer	23: Control Infiltration and Cross Connections to the District's Stormwater System	24: Flood Management Projects and Water Quality	25: Detention Pond Retrofit Program
i. Operate and maintain public streets, roads and highways for which the permittee has authority in a manner designed to minimize the discharge of stormwater pollutants to the MS4, including pollutants discharged as a result of deicing activities;	■	■					
ii. Implement a management program to control the use and application of pesticides, herbicides and fertilizers on municipally-owned properties;			■	■			
iii. Inventory, assess, and implement a strategy to reduce the impact of stormwater runoff from municipal facilities that treat, store or transport municipal waste, such as yard waste or other municipal waste not already covered under a 1200 series NPDES permit, a DEQ solid waste permit, or other permit designed to reduce the discharge of pollutants;							

SWMP Component #7: Pollution Prevention for Municipal Operations							
	Applicable BMPs						
Schedule A.4.g Permit Requirement	19: Street Sweeping	20: Operations and Maintenance for Public Streets	21: Proper Road Maintenance to Reduce the Discharge of Pesticides, Herbicides, and Fertilizer	22: Landscape Maintenance Practices to Reduce the Discharge of Pesticides, Herbicides, and Fertilizer	23: Control Infiltration and Cross Connections to the District's Stormwater System	24: Flood Management Projects and Water Quality	25: Detention Pond Retrofit Program
iv. Limit infiltration of seepage from the municipal sanitary sewer system to the MS4;					■		
v. Implement a strategy to control the release of materials related to fire-fighting training activities; and,	See BMP #14: Employee Training						
vi. Assess co-permittee flood control projects to identify potential impacts on the water quality of receiving water bodies and determine the feasibility of retrofitting structural flood control devices for additional stormwater pollutant removal. The results of this assessment must be incorporated and considered along with the results of the Stormwater Retrofit Assessment required by this permit;						■	■

TABLE 7 – Pollution Prevention for Municipal Operations BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(i) Operate and maintain public streets, roads and highways in a manner designed to minimize the discharge of stormwater pollutants to the MS4, including pollutants discharged as a result of deicing activitie;*		
19: Street Sweeping	**Responsibility for Implementation:** DTD Roads and City of Happy Valley **Permit Year:** Ongoing **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. 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). **Measurable Goals:** • 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.	(1) Number of miles that were swept in Happy Valley, and (2) Mass or volume of material removed during sweeping in Happy Valley. For DTD roads, see tracking measures in the DTD MS4 NPDES SWMP.
20: Operations & Maintenance for Public Streets	**Responsibility for Implementation:** DTD Roads and City of Happy Valley **Permit Year:** Ongoing **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. Public streets within the City of Happy Valley are carried out by the City as follows: • Road repair activities: 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. • Litter control: 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.	(1) Mass or volume of material removed by the City of Happy Valley "Adopt A Road" program. (2) Number of illegal solid waste dumps that are removed in the City of Happy Valley. (3) Mass or volume of material that is removed by the

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	• Ice removal work: 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. • Road sanding: 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. **Measurable Goals:** • 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.	elimination of illegal solid waste dumping sites in the City of Happy Valley. (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.
NPDES Permit Requirement – *(ii) Implement a management program to control the use and application of pesticides, herbicides and fertilizers on co-permittees-owned properties;*		
21: Proper Road Maintenance Practices to Reduce the Discharge of Pesticides, Herbicides and Fertilizers	**Responsible for Implementation:** Happy Valley and DTD Roads **Permit Year:** Ongoing ***BMP Description:*** Proper road maintenance practices to reduce the discharge of pesticides, herbicides, and fertilizers within the DTD service area (which includes CCSD#1 and County roads in Happy Valley) is the responsibility of DTD. For information on their activities, refer to the DTD NPDES SWMP. *Proper road maintenance practices within the City of Happy Valley are carried out by the City as follows:* 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.	(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. For DTD roads see tracking measures in the DTD MS4 NPDES SWMP.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	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. **Measurable Goals:** • 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.	
22: Landscape Maintenance Practices to Reduce the Discharge of Pesticides, Herbicides and Fertilizers	**Responsible for Implementation:** CCSD #1, City of Happy Valley and DTD **Permit Year:** See the measurable goals portion of this BMP. **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. 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: • 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: 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.	(1) The number of meetings conducted. (2) The results and follow-up activities conducted as a result of the meetings.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	For this permit term, this BMP will include: • Going back to these personnel to check in on progress and to continue to encourage activities which reduce landscape maintenance related discharges of pesticides/herbicides/fertilizers. Please note that lands and buildings which have been leased by 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). **Measurable Goal:** • 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. • Develop and implement an Integrated Pest Management plan by December 31, 2012.	
NPDES Permit Requirement – *(iii) By July 1, 2013 inventory, assess, and implement a strategy to reduce the impact of stormwater runoff from municipal facilities that treat, store or transport municipal waste, such as yard waste or other municipal waste not already covered under a 1200 series NPDES permit, a DEQ solid waste permit, or other permit designed to reduce the discharge of pollutants;*		
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.		
NPDES Permit Requirement – *(iv) Limit infiltration of seepage from the municipal sanitary sewer system to the MS4;*		
23: Control Infiltration and Cross Connections to the District's Stormwater	**Responsible for Implementation:** CCSD #1 **Permit Year:** Ongoing **BMP Description:** The District prevents exfiltration of flows from municipal sanitary sewers in the following ways:	(1) Number of cross-connections/ sanitary discharges identified.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
System	• 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 generally sound and free of cracks and leaks. • 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. 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: • Performing dry-weather inspections at all major or priority outfalls on an annual basis to detect non-stormwater flows, and • Receiving and promptly responding to reports from citizens of unusual colors, odors and solids. **Measurable Goals:** • Eliminate any identified sanitary discharges to the storm system.	(2) The number and type of inspections performed, abatement actions and enforcement actions taken.
NPDES Permit Requirement – *(v) Implement a strategy to control the release of materials related to fire-fighting training activities;*		
This requirement is addressed under BMP #14.		
NPDES Permit Requirement – *(vi) Assess co-permittee flood control projects to identify potential impacts on the water quality of receiving water bodies and determine the feasibility of retrofitting structural flood control devices for additional stormwater pollutant removal. The results of this assessment must be incorporated and considered along with the results of the Stormwater Retrofit Assessment required by this permit;*		
24: Flood Management Projects and Water Quality	**Responsible for Implementation:** CCSD #1 Planning and Maintenance Staff **Permit Year:** Ongoing **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. CIPs: The District hired a consultant for the development of Watershed Action Plans which were	(1) Number of retrofits constructed that address water quality treatment. (2) Number of flood management projects

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	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. 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: 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. As a result, the stormwater CIP process includes consideration of water quality benefits. <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. **Measurable Goals:** • Ensure all planned stormwater CIPs include consideration of water quality.	implemented or constructed and the percentage of those projects that include water quality Components.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
25: Detention Pond Retrofit Program	**Responsible for Implementation:** CCSD #1 **Permit Year:** Ongoing. **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. 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. **Measurable Goal:** • 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.	(1) Track pilot testing activities. (2) Number, type, and location of retrofits.

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				
		Applicable BMPs		
Schedule A.4.h Permit Requirement	26: Maintenance of Conveyance System Components and Structural Controls	27: Conduct Catch basin Cleaning and Maintenance	28: Storm Drain Cleaning Assistance Program	29: Private Water quality Facility Maintenance Program
i. By July 1, 2013, the co-permittees must inventory and map stormwater management facilities and controls, and implement a program to verify that stormwater management facilities and controls are inspected, operated and maintained for effective pollutant removal, infiltration and flow control. At a minimum, the program must include the following: 1) Legal authority to inspect and require effective operation and maintenance; 2) A strategy to inventory and map public and private stormwater treatment facilities as provided under Schedule A.4.h.ii.; and, 3) Public and private stormwater facility inspection and maintenance requirements for stormwater facilities that have been inventoried and mapped as provided under Schedule A.4.h.ii.	■	■		■
ii. As part of the Stormwater Structural Facilities and Controls Inspection and Maintenance program, co-permittees must develop and implement a strategy that guides the long-term maintenance and management of all publicly-owned and identified privately-owned stormwater structural facilities and controls. At a minimum, the plan or approach must describe the following:			■	
1. Co-permittee-owned or operated stormwater quality facilities a) inventory and mapping process, b) inspection and maintenance schedule, c) inspection, operation and maintenance criteria and priorities, d) description of inspector type and staff position or title; and,(e) inspection and maintenance tracking mechanisms.	■			■
2. Privately-owned or operated stormwater quality facilities a) procedures for and types of stormwater facilities that will be inventoried and mapped. At a minimum, the inventory and mapping must include the following:				

SWMP Component #8: Structural Stormwater Facility Operations and Maintenance				
		Applicable BMPs		
Schedule A.4.h Permit Requirement	26: Maintenance of Conveyance System Components and Structural Controls	27: Conduct Catch basin Cleaning and Maintenance	28: Storm Drain Cleaning Assistance Program	29: Private Water quality Facility Maintenance Program
i) Private stormwater management facilities for new development and redevelopment projects constructed under the co-permittee's post-construction management manual or equivalent document after January 15, 2012; ii) Private stormwater management facilities identified by the co-permittee and used to estimate the pollutant load reduction as part of the TMDL benchmark evaluation; and, iii) Any major private stormwater management facilities or structural controls. *b) Inspection criteria, rationale, priorities, frequency and procedures for inspection of private stormwater facilities that have been inventoried and mapped; c) Required training or qualifications to inspect private stormwater facilities; d) Reporting requirements; and, e) Inspection and maintenance tracking mechanism*				

TABLE 8 – Structural Stormwater Facilities Operations and Maintenance BMPs

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
NPDES Permit Requirement – *(i)* *By July 1, 2013, the co-permittee must inventory and map stormwater management facilities and controls, and implement a program to verify that stormwater management facilities and controls are inspected, operated and maintained for effective pollutant removal, infiltration and flow control. At a minimum, the program must include the following: 1) Legal authority to inspect and require effective operation and maintenance; 2) A strategy to inventory and map public and private stormwater management facilities as provided under Schedule A.4.h.ii.; and, 3) Public and private stormwater facility inspection and maintenance requirements for stormwater management facilities that have been inventoried and mapped as provided under Schedule A.4.h.ii.* **NPDES Permit Requirement –** *(ii) As part of the Stormwater Management Facilities Inspection and Maintenance program, the co-permittee must implement a strategy that guides the of all co-permittee-owned and identified privately-owned stormwater structural facilities. At a minimum, the strategy must describe the following:* *1) Co-permittee-owned or operated stormwater management facilities (a) Inventory and mapping process; (b) Inspection and maintenance schedule; (c) Inspection, operation and maintenance criteria and priorities; (d) Description of inspector type and staff position or title; and, (e) Inspection and maintenance tracking mechanisms.* *(2) Privately-owned or operated stormwater management facilities (a) Procedures for and types of stormwater facilities that will be inventoried and mapped. At a minimum, the inventory and mapping must include the following: (i) Private stormwater management facilities for new development and redevelopment projects constructed under the co-permittee's post-construction management manual or equivalent document after January 15, 2012; (ii) Private stormwater management facilities identified by the co-permittee and used to estimate the pollutant load reduction as part of the TMDL benchmark evaluation; and, (iii) Any major private stormwater management facilities or structural controls. (b) Inspection criteria, rationale, priorities, frequency and procedures for inspection of private stormwater facilities that have been inventoried and mapped; (c) Required training or qualifications to inspect private stormwater facilities; (d) Reporting requirements; and, (e) Inspection and maintenance tracking mechanism.*		

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
26: Maintenance of Conveyance System Components and Structural Controls	**Responsibility for Implementation:** CCSD #1 Maintenance Staff **Permit Year:** Ongoing **BMP Description:** The District maintains conveyance and treatment components of the storm water system that are located outside the rights-of-way of publicly owned roads in maintenance agreement subdivisions or that are owned by the District. The conveyance components include, but are not limited to, culverts, storm sewer lines (8" or greater in diameter) and inlets. The stormwater treatment components of the system include, but are not limited to, vegetated aboveground stormwater detention facilities, sedimentation manholes, and various types of underground proprietary pollution control systems. Maintenance records are kept by both DTD and the District. The District and DTD are working on the development of an intergovernmental agreement to clarify and coordinate maintenance activities. 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. **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 2017. 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. **Measurable Goals (**The following measurable goals apply to the storm system for which CCSD#1 has responsibility as described above.): • Clean storm lines and ditches on an as-needed basis. Identify inspection frequency. • Maintain structural water quality facilities on a 3-year cycle. • Conduct conveyance system assessment by January 31, 2013.	(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
27: Conduct Catch basin Cleaning and Maintenance	**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:** • 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.	(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.
28: Storm Drain Cleaning Assistance Program	**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: • 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. **Measurable Goals:**	(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.

CCSD #1 BMP Descriptions	BMP Implementation	Tracking Measures
	• Continue to provide assistance to commercial and industrial facilities to support their water quality facility maintenance.	
29: Private Water Quality Facility Maintenance Program	**BMP Owner:** 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 storm water detention and/or water quality ponds, below-ground vortex separators, and swales. On a periodic basis, pollution is removed from these structures and properly disposed of. **Measurable Goals:** • Inspect 70% of our maintenance agreement sub-divisions annually. • Cleaning and repair schedules will be developed based on inspection outcomes. • All non-maintenance agreement cleaning and repairs will be request or service driven. • Emergency driven cleaning and maintenance will be addressed within 24 hours of the call being received. • All non-emergency requests for service will be addressed within 72 hours of the call received.	(1) Number of structures inspected and cleaned.

Appendix C
Inspection Schedule
And Sign-in Sheet

Tentative Agenda for MS4 Program Inspection
Clackamas County, Oregon
December 17-18, 2014

Day	Time	Team 1 Program/Agenda Item	Team 2 Program/Agenda Item
Wednesday, December 17, 2014	8:00 am - 8:30 am	Kick-off Meeting & Program Management Overview **(Office)**	
	8:30 am- 10:00 am	Illicit Discharge Detection and Elimination for City of Happy Valley and then CCSD #1 **(Office)**	
	10:00 am – 11:00 am	Pollution Prevention/Good Housekeeping for Municipal Operations **(Office)**	
	11:00 am – 12:15 pm	Post-Construction Site Stormwater Runoff Control —including Planning of Field Logistics for Wednesday Afternoon **(Office)**	
	12:15 pm – 1:15 pm	Lunch Break	
	1:15 pm – 4:30 pm	Illicit Discharge Detection and Elimination- Happy Valley **(Field)**	Post-Construction Site Stormwater Runoff Control **(Field)**
	4:30 pm – 5:00 pm	Recap and Logistics Planning for Thursday	
Thursday, December 18, 2014	8:00 am - 12:00 pm	Illicit Discharge Detection and Elimination – CCSD #1 **(Field)**	Pollution Prevention/Good Housekeeping for Municipal Operations **(Field)**
	12:00 pm – 1:30 pm	Lunch Break—including discussion among the EPA Inspection Team members	
	1:30 pm - 2:30 pm	Open Period for Additional Activities[1] (Tentative time slot)	
	2:30 pm - 3:00 pm	Internal Discussion[1]	
	3:00 pm - 4:00 pm	Closing Conference[2] (Tentative time slot)	

[1] Internal Discussion – Time for inspectors to arrange notes and prepare information to be discussed with the County at the Closing Conference. County participation is not expected.
[2] The County is encouraged to invite representatives from all applicable organizational divisions/departments.

Day 1

MS4 Program Evaluation Sign-In Sheet (Please Print)

Permittee: CCSD#1 & City of Happy Valley

Date conducted: 12/17/2014

Permit No.

Name	Title	Department	Phone	Email
Mona La Pierre	Monitoring + compliance manager	WES CCSD #1	503-557-2830	monalap@co.clackamas.or.us
Andrew Swanson	Water Quality Analyst	Clackamas County WES	503-742-4598	andrews@co.clackamas.or.us
Robert Grandinetti	EPA		509-376-3748	grandinetti.robert@epa.gov
Greg Geist	Interim Director WES	WES	503-869-5087	ggeist@clackamas.us
Don Kemp	WES Devel. Rev Sup	WES	503.742.4577	donkem@clackamas.us
Andrew Robins	WES Field ops Sup.	WES	503-557-2817	andyrob@co.clackamas.or.us
Lisa Cox	OR DEQ MS4 Program Coordinator	Operations	503.229.5185	cox.lisa@deq.state.or.us
Kort Kirkeby	US EPA Contractor	PG Environmental, LLC	303-279-1778 x117	kortney.kirkeby@pgenv.com
Anthony D'Angelo	EPA Contractor	PG Environmental	303-279-1778	anthony.dangelo@pgenv.com
Randall A. Harmon	Interim Transportation Ops Manager	Department of Transportation & Dev.	503-650-3246	Randyhar2@Clackamas.us
Leah Johanson	Sr. Civil Engineer	C.C. WES	503 742 4620	ljohanson@co.clackamas.or.us
Joel Howie	~~ATD~~ Capital Projects Supervisor	Clackamas County DTD	503 742 4658	jhowie@clackamas.us
Carol Earle	City of Happy Valley Engr Manager	Happy Valley	503-783-3815	carole@happyvalleyor.gov

Day 1

MS4 PROGRAM EVALUATION SIGN-IN SHEET (PLEASE PRINT)

Permittee: CCSD#1 & City of Happy Valley **Date conducted:** ___/___/2014

Permit No.

Name	Title	Department	Phone	Email
Mike Bezner	Engineering Mgr	DTD	503 742 4651	mikebez@co.clackamas.or.us
Jim Conrad	Source Control Specialist	WES	503 557-2831	jimcon@co.clackamas.or.us
Zach Koellermeier	field ops WES	WES	503 557 2801	zachkoe@co.clackamas.or.us
Nick Degliantoni	field ops WES	WES	503-557-2801	ndegliantoni@co.clackamas.or.us
Susan Ottersen	Eng. Tech 3 GIS Analyst	WES	503-348-0752	susanott@co.clackamas.or.us
Gail Shaloum	Environmental Policy Specialist	WES	503-742-4597	gshaloum@clackamas.us
Ron Buck	IVM Coord.	DTD	503-816-3705	ronbuck@co.clackamas.or.us.
Chris Randall	Public Works Director	City of Happy Valley	(503) 783-3842	chris@happyvalleyor.gov

Appendix D
EPA Records Request

Clackamas County MS4 Inspection—Records Request

Notes: (1) The EPA Inspection Team requests the County, if possible, to provide an electronic copy of the items highlighted in red text prior to the inspection. (2) The County may provide the remainder of the items at the time of the onsite inspection. Please denote the name of each document and associated explanatory notes in the applicable table cells below. The EPA Inspection Team will request a completed copy of this document at the time of the onsite inspection.

	Document Request	Name of Document(s) Provided	Description / Comments / Notes
Program Management	1. Permit Notice of Intent.		
	2. MS4 Annual Reports or Progress Reports (two most recent reporting years).		
	3. Organizational chart clearly indicating positions or divisions responsible for your MS4 program.		
	4. Map of the permitted area and receiving waters, basins, and segments, including any TMDL or 303(d) listed waters. (Plan to provide an onsite demonstration of this material.)		
	5. Stormwater Management Plan.		
	6. Any formal agreements with other entities or local governments for implementation of your MS4 programs (e.g., memoranda of understanding–MOUs, etc.).		
Illicit Discharge Detection and Elimination	7. Map showing the extent of the storm drain system, including outfalls and surface waters. (An onsite demonstration of a GIS-based map may be appropriate.)		
	8. Enforcement Response Plan or similar document.		
	9. Written program and procedures for the detection, elimination, and prevention of illicit discharges and connections to the MS4.		

	Document Request	Name of Document(s) Provided	Description / Comments / Notes
	10. Mechanism for gaining access to private property to conduct outfall inspections (e.g., land easements, consent agreements, search warrants).		
	11. Programs and/or procedures for public complaint reporting, response, and follow-up of illicit discharges and connections to the MS4. (Plan to provide a, example/case file from a public complaint regarding an illicit discharge to the MS4).		
	12. Ordinance or other regulatory mechanism(s) prohibiting illicit discharges and connections to the MS4.		
	13. Example of tracking mechanism / inventory of illicit discharges identified and actions taken to control or eliminate the discharges. (Plan to provide an onsite demonstration of applicable material.)		
	14. Example/case file of an illicit discharge incident where enforcement was used (ideally showing the full extent of County's enforcement authority).		
	15. Records of field screening and tracking for storm drain outfall screening.		
	16. Methods to provide educational outreach to inform public employees, businesses, and the general public of the IDDE program.		
Construction Site Stormwater Runoff Control	17. Map/inventory showing the location of current active construction sites in the permitted area (differentiating County-sponsored from private projects).		
	18. Written program and procedures for construction stormwater permitting, inspection, and enforcement. (Include tools such as checklists used for documenting inspections and enforcement activity.)		

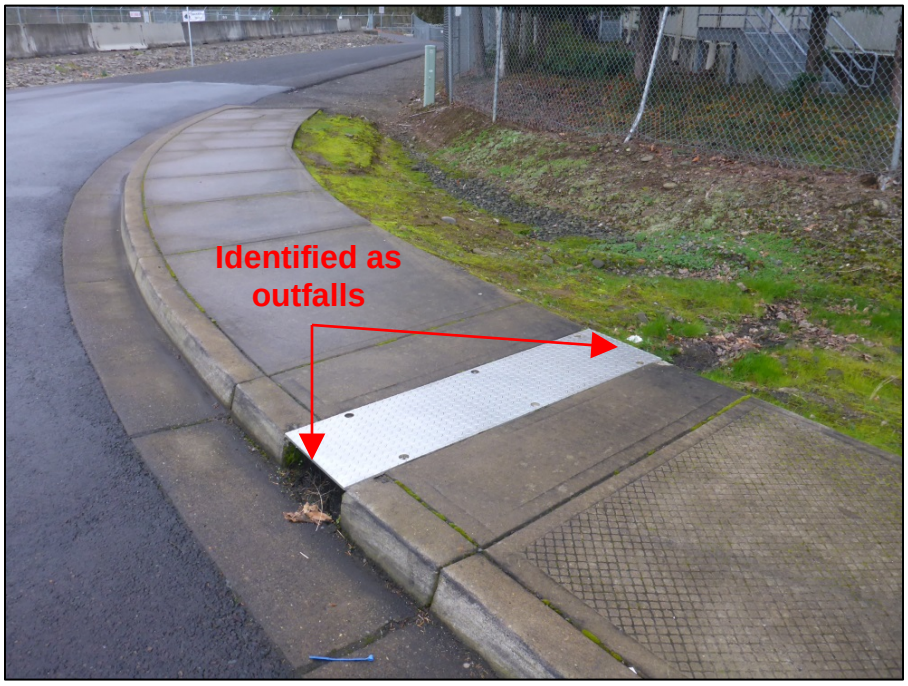
	Document Request	Name of Document(s) Provided	Description / Comments / Notes
	19. Construction-related ordinances and regulatory mechanisms pertaining to erosion, sediment, and waste control.		
	20. Construction inspection records (most recent reporting year) for sites selected by the EPA Inspection Team at the time of the onsite inspection.		
	21. Example/case file of a construction site issue where County used ordinance or other regulatory mechanism(s) to enforce compliance. (Ideally, select example showing full extent of County's enforcement authority.)		
	22. Procedures for receiving, tracking, and investigating public complaints (e.g., call center and online reporting system, complaint log forms, etc.)		
	23. Example of tracking mechanism / inventory of public complaints associated with construction activities and response, actions, and results. (Plan to provide an onsite demonstration of applicable material.)		
Post-Construction Stormwater Management	24. Map/inventory of post-construction stormwater management practices within the County's jurisdiction (differentiating between County-owned and private practices).		
	25. Written program and procedures for new development / redevelopment associated with post-construction stormwater management practices. (Include tools such as checklists used for documenting inspections and reviews).		
	26. Procedures for inspection tracking for new development / redevelopment post-construction stormwater management practices (include applicable tools / checklists). (Plan to provide an onsite demonstration of applicable material.)		

	Document Request	Name of Document(s) Provided	Description / Comments / Notes
	27. Records of inspections and maintenance of post-construction stormwater management practices (most recent reporting year) for sites selected by the EPA Inspection Team during the onsite inspection. (An onsite demonstration of County's tracking database may be useful.)		
	28. Written program and procedures to ensure adequate installation and long-term operation and maintenance by the owner of post-construction stormwater management practices.		
	29. Ordinance or other regulatory mechanism(s) to address post-construction stormwater runoff from new development / redevelopment projects.		
	30. Example/case file of a post-construction stormwater management practice issue where County used ordinance or other regulatory mechanism(s) to enforce compliance. (Ideally, select example showing full extent of County's enforcement authority.)		
Pollution Prevention and Good Housekeeping	31. Map/inventory of County facilities and properties within the permitted area (e.g., road maintenance facilities, stockpile sites, storage and material handling areas, etc.).		
	32. Written operation and maintenance program and procedures for all municipal operations and facilities that discharge to the MS4.		
	33. Employee/maintenance personnel training plan, records, and syllabi pertaining to pollution prevention and good housekeeping (for most recent reporting year).		
	34. Documentation or guidance manual of BMPs or runoff controls geared toward fleet yard and building maintenance activities.		

	Document Request	Name of Document(s) Provided	Description / Comments / Notes
	35. Pollution prevention / good housekeeping procedures and BMP manual or runoff controls for municipal facilities and activities.		
	36. List of County-owned municipal facilities requiring individual NPDES permit coverage (if applicable).		

Appendix E
Photograph Log

Illicit Discharge Detection and Elimination (IDDE)



Photograph 1. Curbside inlet and outlet leading to a ditch along SE Mangan Drive in Clackamas, Oregon. This location was identified on the WES map as an outfall.

Photograph 2. Culvert outlet in a ditch along SE Mangan Drive in Clackamas, Oregon. This location was identified on the WES map as an outfall.

Photograph 3. Closeup view of stormwater outfall pipe #32 identifed by WES staff as a priority outfall. This outfall was not identified on the WES map as a "priority outfall."

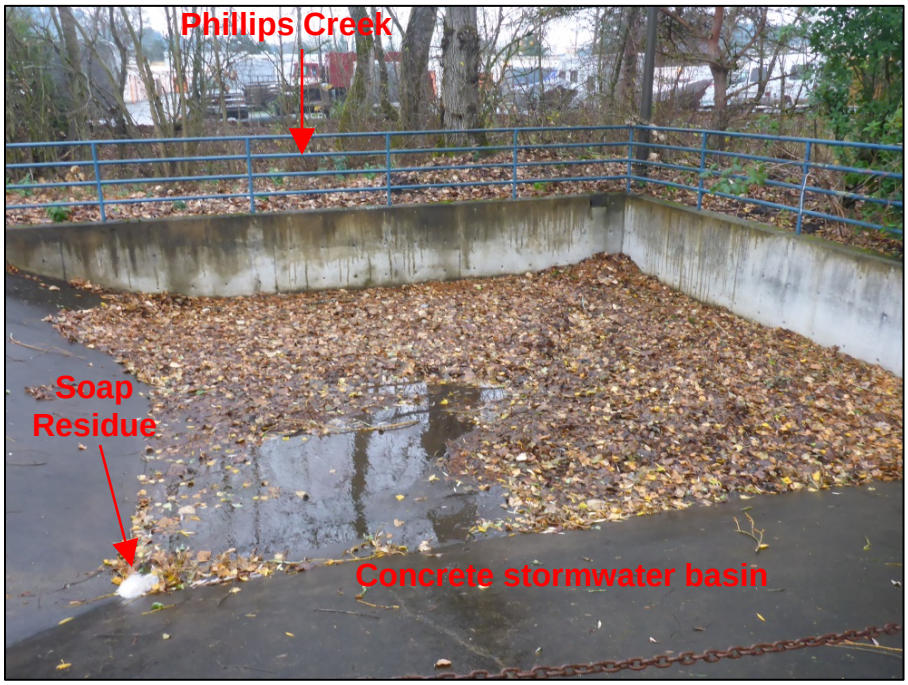
Photograph 4. Closeup view of an approximately 32-inch-diameter stormwater outfall pipe discharging to a stormwater detetion basin off of Sunnyside Road. Detention basin ultimately discharges to Rock Creek.

Photograph 5. View of large stormwater outfall leading from 162nd Avenue east toward a stormwater detention basin. The outfall is approximately 6 feet in diameter and is located behind the fence.

Photograph 6. View of flowing water leading from large stormwater outfall shown in Photograph 5. Flowing water continues to a stormwater detention basin, and ultimately to Rock Creek.

Photograph 7. *Clackamas Fire Station #1* – View of active fire engine washing activities on an impervious surface at Clackamas Fire Station #1.

Photograph 8. *Clackamas Fire Station #1* – Additional view of fire engine washing activites shown in Photograph 7. Soapy water was observed from the fire engine leading to the concrete stormwater basin. Note location of designated wash bay.



Photograph 9. *Clackamas Fire Station #1* – View of stormwater basin at Clackamas Fire Station #1. Soap residue was observed in the basin. Outfall from stormwater basin leads to Phillips Creek.

Photograph 10. *Clackamas Fire Station #1* – View of stormwater outfall entering Phillips Creek from concrete stormwater basin shown in Photographs 8 and 9.

Pollution Prevention for Municipal Operations

Photograph 11. *Clackamas Fire District #1 Training Center* – 15990 130th Avenue, Clackamas County, OR 97015.

Photograph 12. *Clackamas Fire District #1 Training Center* – View, facing northeast, of the fire tower and one of the four fire tower drains that receive flow from training events and storm events.

Photograph 13. *Clackamas Fire District #1 Training Center* – View, facing west, of the training center's flow diversion valve structure that is used to divert flow from the fire tower drains from the storm sewer to the sanitary sewer during training events.

Photograph 14. *Clackamas Fire District #1 Training Center* – Closeup view of the flow diversion structure sign. The sign described five steps for operating the flow diversion valve structure.

Photograph 15. *Clackamas Fire District #1 Training Center* – Close-up view Valve 2, which was shut at the time of the inspection. Valve 2 is opened to allow flow from the fire tower drains to enter the CCSD#1 sanitary sewer.

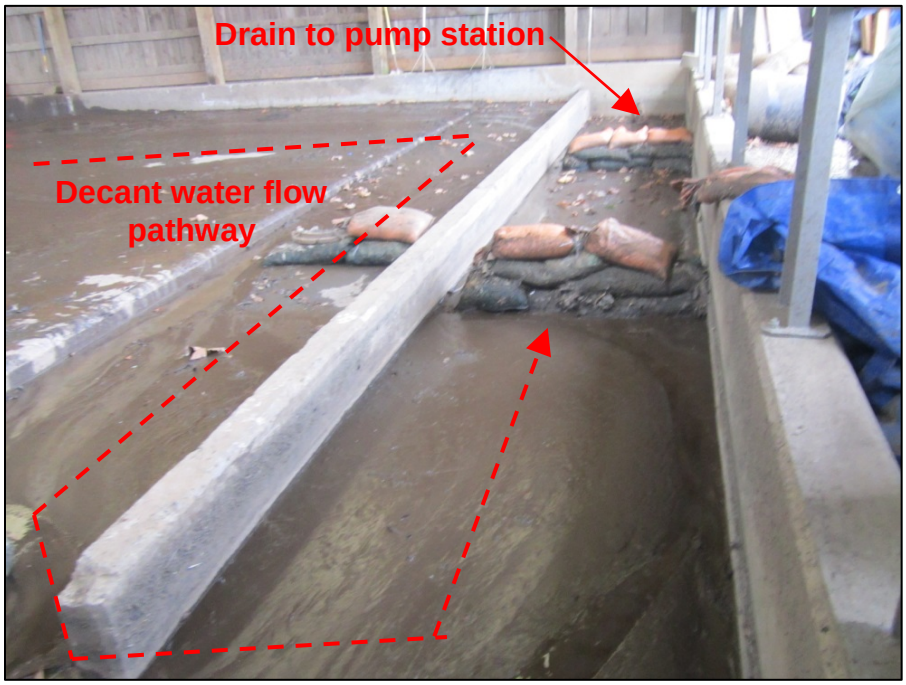
Photograph 16. *CCSD#1 Decant Facility* – View, facing southeast, of the CCSD#1 Decant Facility located at the intersection of SE Jennifer Street and SE Evelyn Street. Note the unlind pond next to the facility building.

Photograph 17. *CCSD#1 Decant Facility* – View, facing east, of the unlined pond shown in Photograph 16. WES representatives stated that the pond is used to dewater street sweeper and vacuum trucks, before the waste material is offloaded into the facility building.

Photograph 18. *CCSD#1 Decant Facility* – View, facing west, of the unlined pond shown in Photographs 16 and 17.

Photograph 19. *CCSD#1 Decant Facility* – Closeup view of the unlined pond discharge pipe, shown in Photograph 17. WES representatives stated that the discharge pipe had been plugged in the past and that a discharge from the pond had never been observed.

Photograph 20. *CCSD#1 Decant Facility* – View of the waste storage area inside the decant facility building. A drain was located in the northeast corner of the building to convey wastewater from the waste material to an adjacent CCSD#1 sanitary pump station.

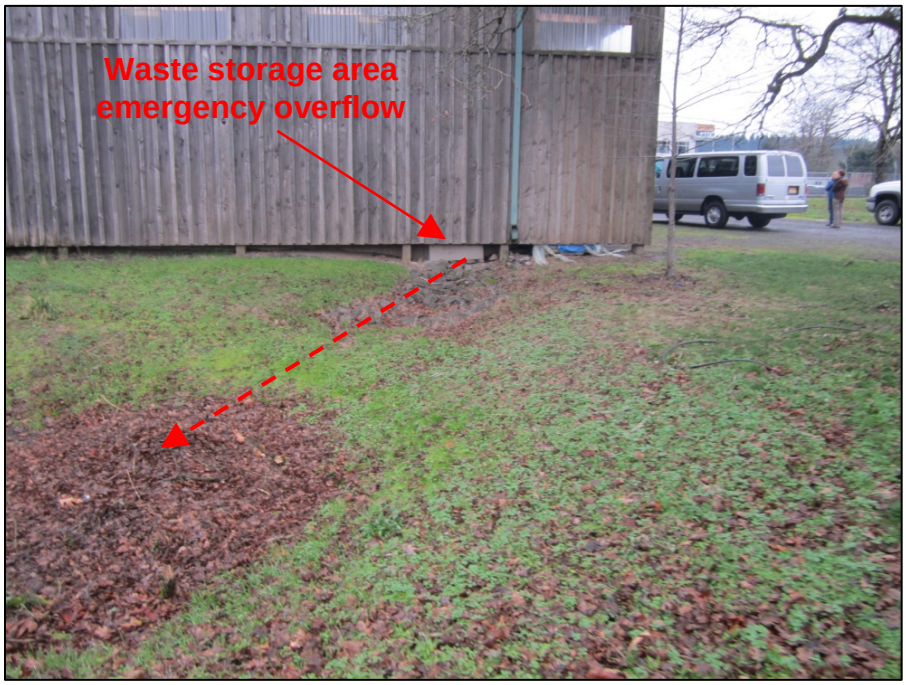


Photograph 21. *CCSD#1 Decant Facility* – Closeup view of the wastewater flow pathway through the waste storage area into the floor drain. Note the gravel bags implemented to reduce solids from entering the drain.

Photograph 22. *CCSD#1 Decant Facility* – Closeup view of the decant facility drain shown in Photograph 21.

Photograph 23. *CCSD#1 Decant Facility* – View, facing east, of the CCSD#1 sanitary pump station located at the decant facility. Note the decant facility and drain, shown in Photographs 20–22, drained to the wet well of this pump station.

Photograph 24. *CCSD#1 Decant Facility* – Closeup view of the decant facility waste storage area emergency overflow, which allowed wastewater from inside the decant facility building to drain outside into the unlined pond shown in Photographs 16–18.



Photograph 25. *CCSD#1 Decant Facility* – View, facing north, of the decant facility waste storage area emergency overflow rock channel leading into the unlined pond.

Photograph 26. *CCSD#1 Decant Facility* – Closeup view of the decant facility waste storage area emergency overflow rock channel leading into the unlined pond.

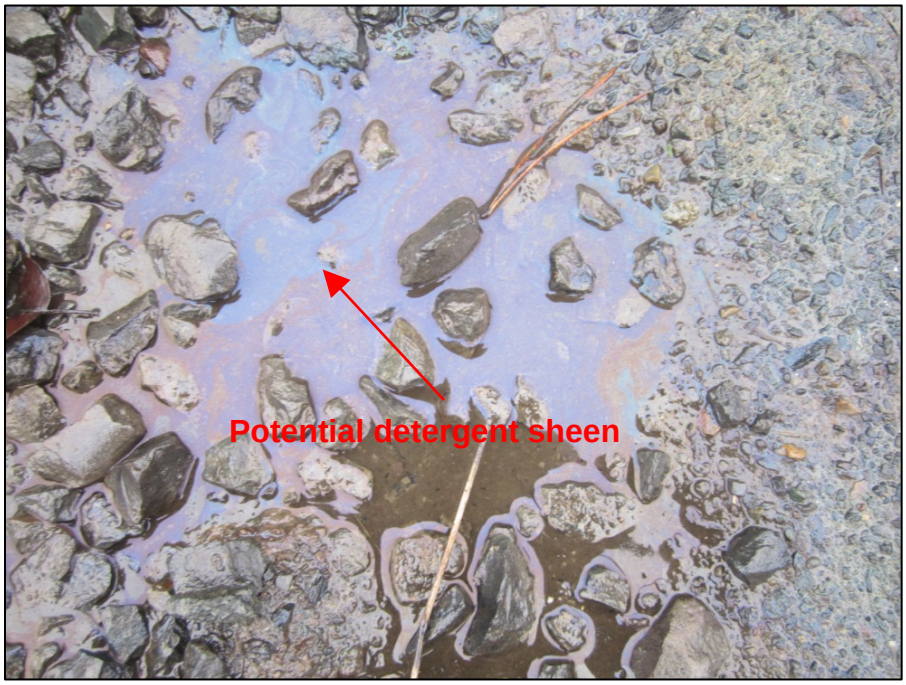
Photograph 27. *City of Happy Valley Public Works Maintenance Facility* – 13910 SE Ridgecrest Road; Happy Valley, OR 97086.

Photograph 28. View, facing north, of the facility's above ground fuel storage tanks, located in the central portion of the facility.

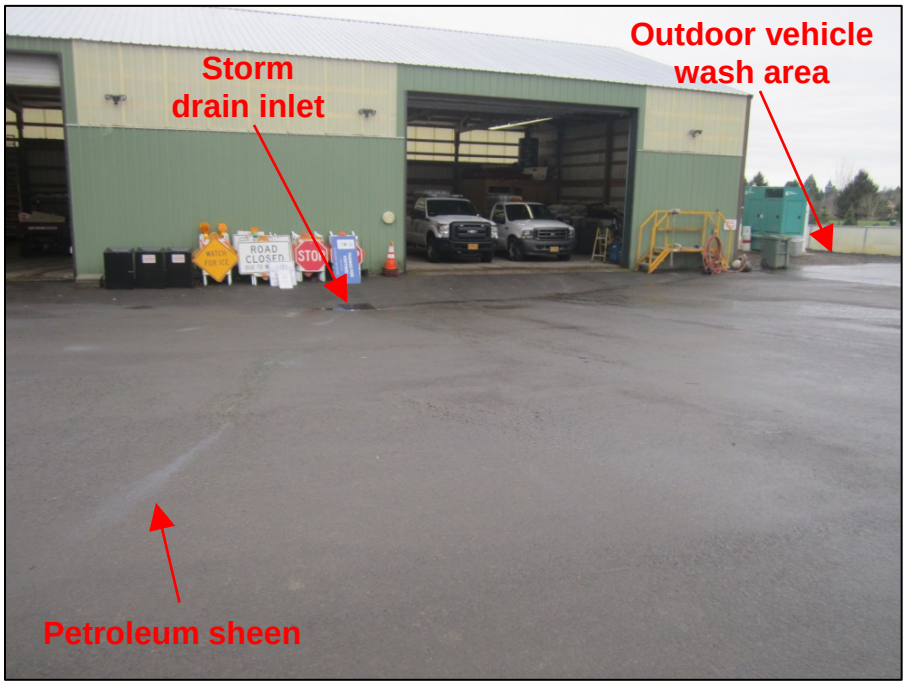
Photograph 29. View, facing west, of four 250-gallon totes of magnesium chloride, stored outside in the western portion of the facility without secondary containment or overhead coverage.

Photograph 30. Closeup view of the four 250-gallon totes of magnesium chloride, shown in Photograph 29.

Photograph 31. *City of Happy Valley Public Works Maintenance Facility* – View, facing south, of the outdoor vehicle wash area, located in the southwest corner of the facility. Wash water was intended to infiltrate into the gravel surface.



Photograph 32. *City of Happy Valley Public Works Maintenance Facility* – Closeup view of detergent sheen on the gravel surface of the outdoor vehicle wash area.



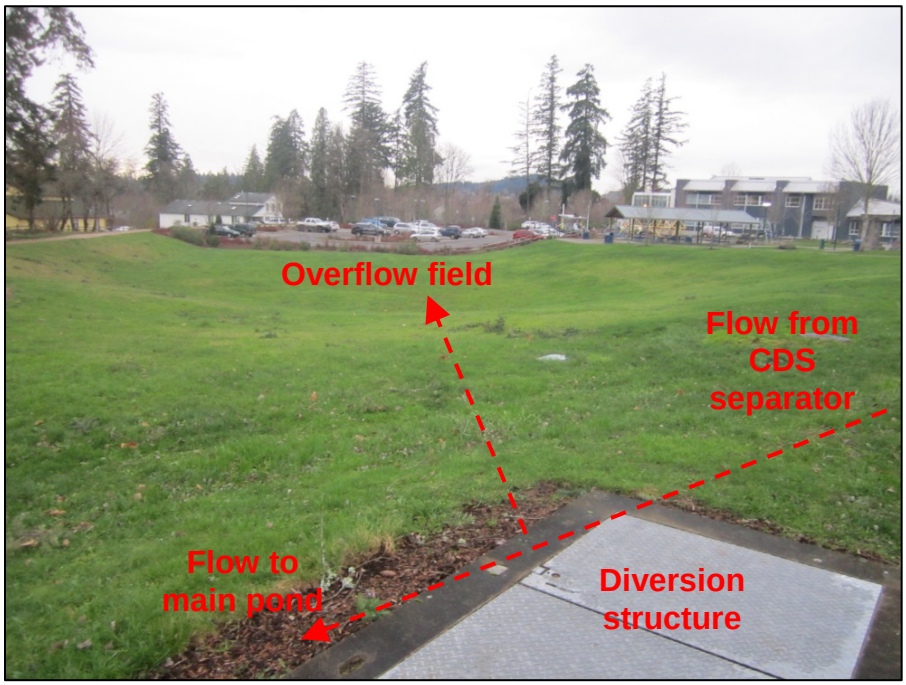
Photograph 33. *City of Happy Valley Public Works Maintenance Facility* – View, facing south and downgradient, of a facility storm drain inlet, located on the south side of the facility, north of the maintenance shop building. Stormwater with a petroleum sheen was observed mobilizing towards and into the storm drain inlet.

Photograph 34. *City of Happy Valley Public Works Maintenance Facility* – Closeup view of stormwtaer with a petroleum sheen discharging into the storm drain inlet shown in Photograph 33.

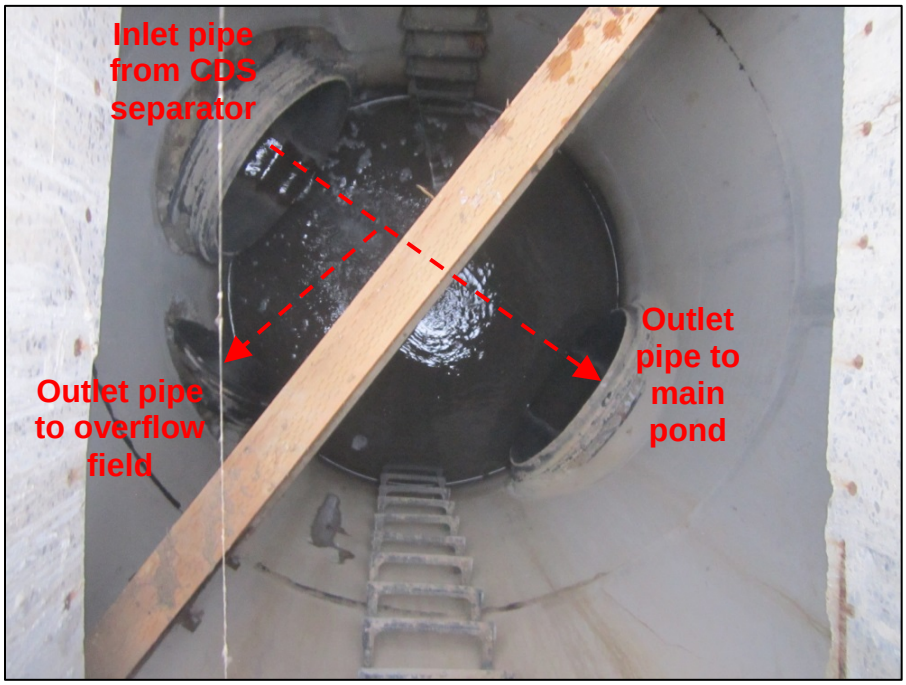
Photograph 35. *City of Happy Valley Public Works Maintenance Facility* – Closeup view inside the lynch-style storm drain catch basin. The City's Public Works Director explained that the catch basin is deigned to remove both solids and oil and grease from stormwater runoff. This BMP was not described in the co-permittees' pollutant reduction strategy document.

Stormwater Management Facilities Operation and Maintenance Activities

Photograph 36. *Oregon Trails Subdivision* – View inside the CDS voretex separator BMP installed at the roundabout intersection of SE Oregon Trail Drive and 174th Avenue. The separator was maintained and appeared to be functioning.



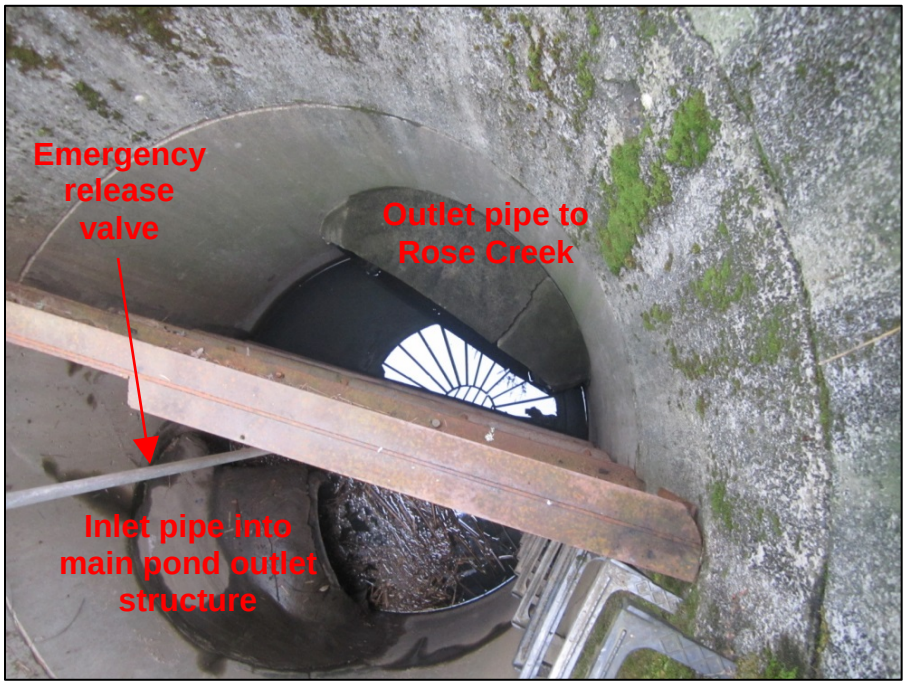
Photograph 37. *Oregon Trails Subdivision* – View, facing southwest, of a stormwater diversion structure used to divert stormwater runoff from the CDS separator (shown in Photograph 36) into an overflow field to reduce flow into the main pond.



Photograph 38. *Oregon Trails Subdivision* – Close-up view inside the stormwater diversion structure, shown in Photograph 37.

Photograph 39. *Oregon Trails Subdivision* – View, facing southeast, of the regional detention pond located off SE Hines Drive in the Oregon Trails Subdivision. The regional detention pond receives stormwater runoff from the subdivision as well as upgradient developed areas to the north. The pond contained an outlet structure to Rose Creek.

Photograph 40. *Oregon Trails Subdivision* – View, facing east, of the regional detention pond's northern inlet pipe. The pond also contained an inlet pipe in the southeast corner.

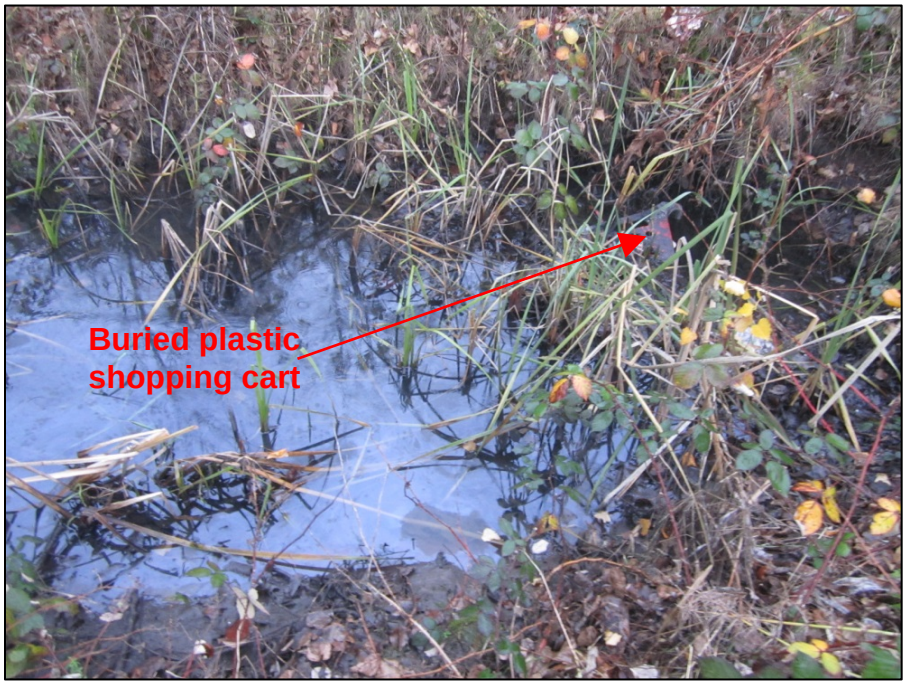


Photograph 41. *Oregon Trails Subdivision* – View inside the outlet structure of the regional detention pond shown in Photographs 39 and 40. The WES Field Operations Manager stated that the emergency release valve was stuck at the time of the inspection.

Photograph 42. *Eagle Landing Golf Course and Subdivision* – View, facing northeast, of the rock-lined infiltration and velocity reduction swale.

Photograph 43. *Clackamas Promenade Shopping Center* – View, facing north, of the northeast detention pond. The EPA Inspection Team observed excessive vegetation growth in and around the pond. In addition, trash and a plastic shopping cart were observed in the pond.

Photograph 44. *Clackamas Promenade Shopping Center* – View, facing southwest, of the southwest detention pond. The EPA Inspection Team observed excessive vegetation growth in and around the pond.



Photograph 45. *Clackamas Promenade Shopping Center* – Closeup view of a plastic shopping cart buried in mud and vegetation. Also note the sheen on the accumulated stormwater.

Photograph 46. *Portfolio Financial Services Detention Pond* – View, facing east, of the detention pond in the parking lot of the Portfolio Financial Services building, located at 7303 SE Lake Road; Clackamas County, OR 97267.

Photograph 47. *Portfolio Financial Services Detention Pond* – The EPA Inspection Team was unable to locate the detenion pond's primary drain, which appeared to be buried in sediment and vegetation.

Photograph 48. *Portfolio Financial Services Detention Pond* – View, facing west, of the detention pond's overflow stand pipe and approximate location of the primary drain.

Photograph 49. *Portfolio Financial Services Detention Pond* – Closeup view of the detention pond's overflow stand pipe.

Photograph 50. *Portfolio Financial Services Detention Pond* – View of the pond's discharge pipe to the CCSD#1 MS4. The discharge pipe was located inside the detention pond's manhole.

Photograph 51. View of boulders and shrubs inside the detention pond. These landscaping items were not identified on the original as-builts for the detention pond.

Photograph 52. View of boulders and shrubs inside the detention pond. These landscaping items were not identified on the original as-builts for the detention pond.

Appendix F
Exhibit Log

Exhibit 1
CCSD#1 and City Map of Outfalls

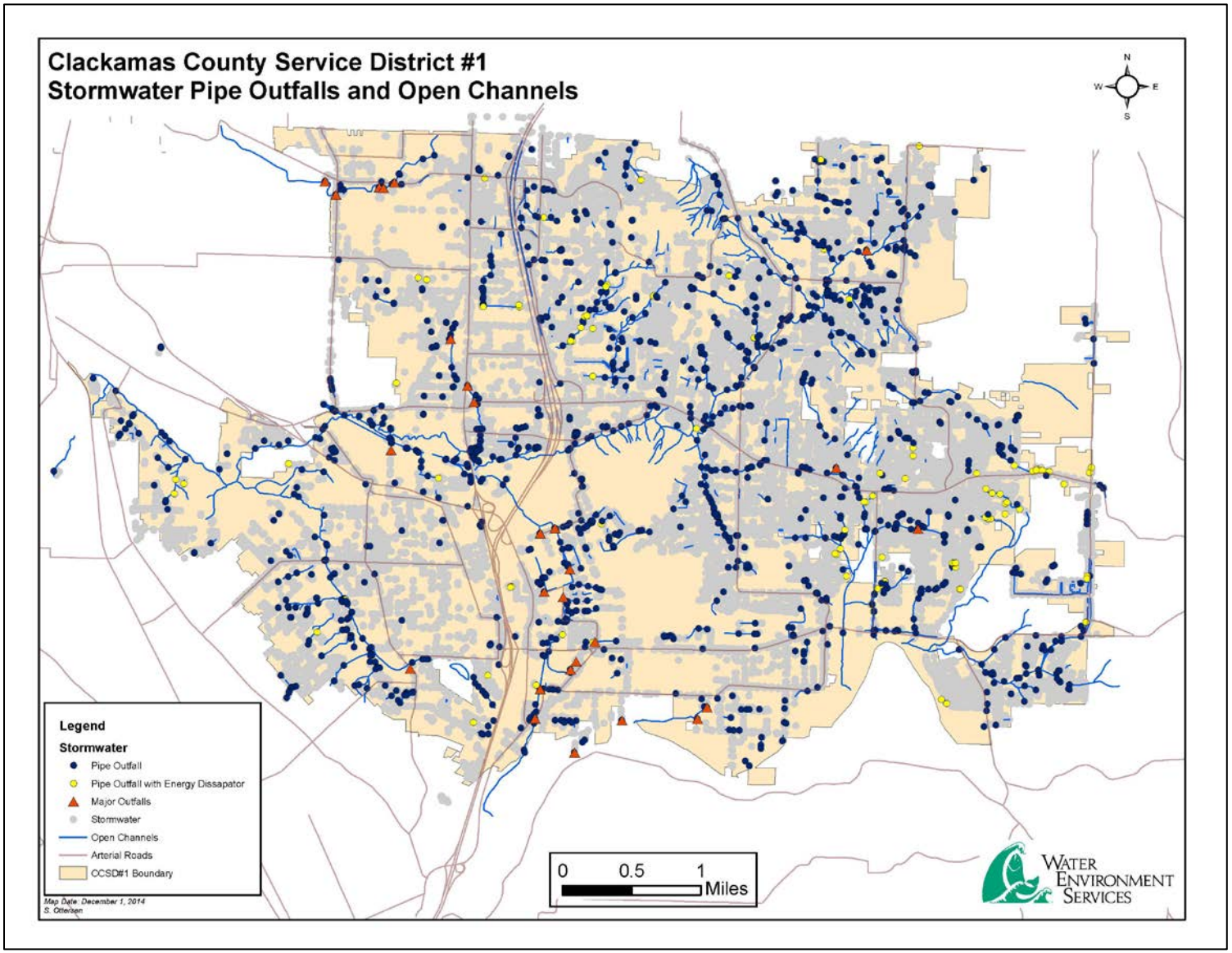

Clackamas County Service District #1
Stormwater Pipe Outfalls and Open Channels
N
W
E
S
Legend
Stormwater
Pipe Outfall
Pipe Outfall with Energy Dissapator
Major Outfalls
Stormwater
Open Channels
Arterial Roads
CCSD#1 Boundary
0
0.5
1
Miles
Map Date: December 1, 2014
S. Otterbein
WATER
ENVIRONMENT
SERVICES

Exhibit 2
Map of stormwater conveyance and outfalls between SE 162nd Avenue, SE 169th Avenue and Sunnyside Road

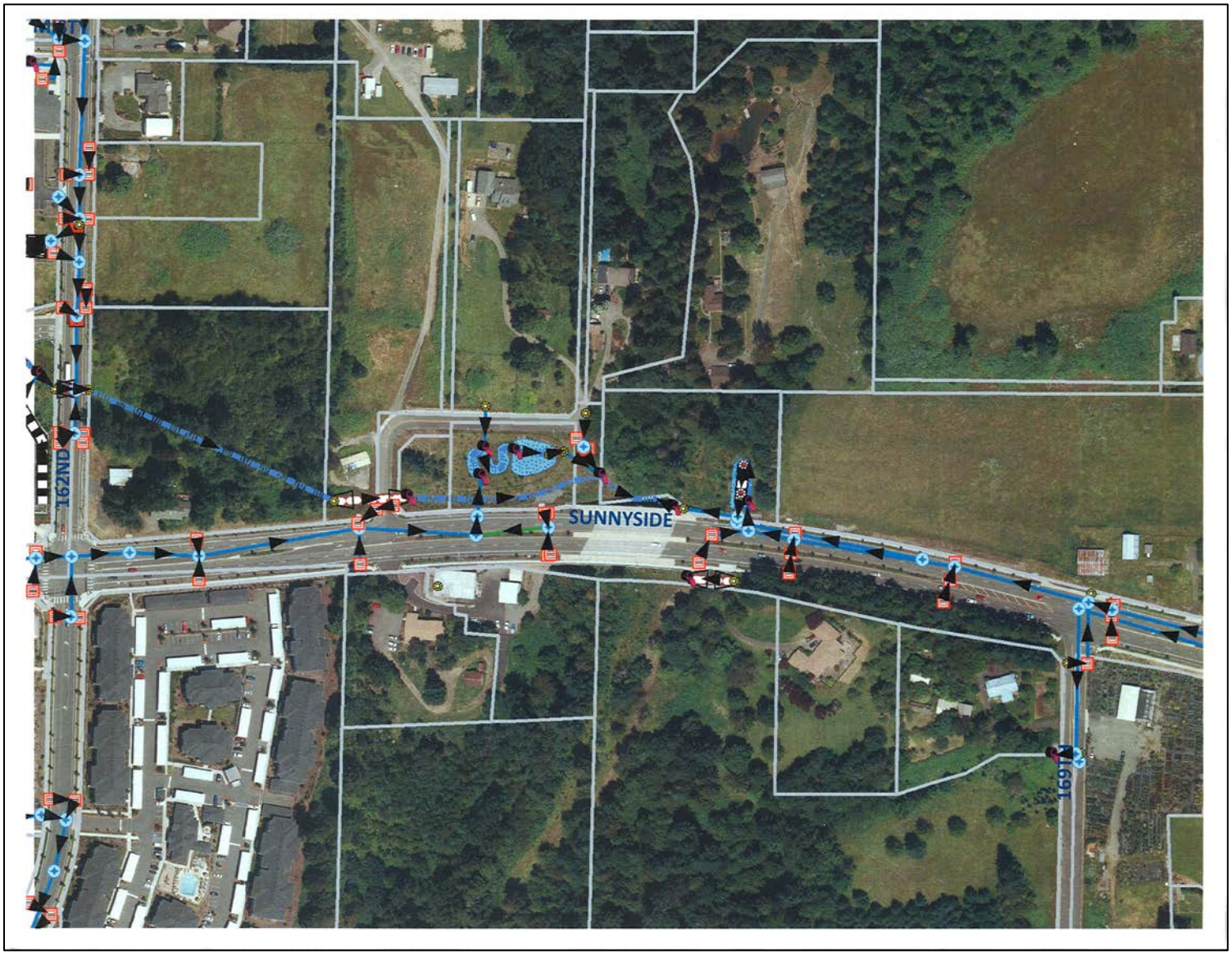

162ND
SUNNYSIDE
169TH

Exhibit 3
Strategy for qualifying Municipal Facilities owned/operated by the City of Happy Valley, Clackamas County, CCSD#1, and/or SWMACC which are also located in the City of Happy Valley, SWMACC, or CCSD#1 – June 28, 2013

June 28, 2013 Strategy for qualifying Municipal Facilities owned/operated by the City of Happy Valley, Clackamas County, CCSD#1, and/or SWMACC which are also located in the City of Happy Valley, SWMACC, or CCSD#1

Schedule A(4)(g)(iii) in the March 16, 2012 MS4 permit requires all co-permittees, including Clackamas County, CCSD#1, SWMACC, and the Cities of Happy Valley and Rivergrove, to do the following: *"By July 1, 2013, inventory, assess, and implement a strategy to reduce the impact of stormwater runoff from municipal facilities that are used to treat, store or dispose municipal waste, such as yard, landscaping, or catch-basin cleaning waste, and are not already covered under a 1200 series NPDES, a DEQ solid waste permit, or other permit designed to reduce the discharge of pollutants;…".*

In response to this requirement, the Strategy for these Municipal Facilities is described in this document. To the best of our knowledge, the facilities which are owned and/or operated by the City of Happy Valley, Clackamas County, CCSD#1, and/or SWMACC that are also located in the portions of the City of Happy Valley, SWMACC, or CCSD#1 which are regulated by Schedule A(4)(g)(iii) are in Table 1 (below):

Table 1

FACILITY NAME	LOCATION	FACILITY OWNER
Decant Facility	16561 SE Evelyn Street/Clackamas, OR 97015	CCSD#1
Public Works Maintenance Facility	13910 SE Ridgecrest Road/ Happy Valley, OR 97086	City of Happy Valley

Table 2 (below) provides additional information about each facility, as required by Schedule A(4)(g)(iii) of the MS4permit.

Table 2

	DECANT FACILITY	PUBLIC WORKS MAINT. FACILITY
Watershed	Cow Creek (Clackamas River)	Mt. Scott Creek (Kellogg Creek)
Municipal Waste	Solid and liquid wastes which have been removed from storm sewer systems, etc. are dumped from trucks at the facility only after having entered the facility's largest building. Solids are separated from liquids in this building. All liquid wastes drain into the public sanitary sewer system and the de-watered solids are hauled off-site for proper disposal	Three categories: 1) Street sweeping solids are temporarily stored at this Facility. The solids are periodically hauled off-site for beneficial re-use or for disposal at a landfill. 2) The Facility occasionally serves as a leaf drop site for leaves that citizens have collected from their property and self-hauled to the Facility. During 2012, the leaf drop site was open for 2 days. Leaves which are received from citizens are hauled off-site by the City to a composting facility. 3) A small amount of vegetation which has been removed from one or more park sites in the City is brought to the Facility by City employees and temporarily stored. This vegetation is periodically hauled off-site for beneficial re-use.

1 | Page

	DECANT FACILITY	PUBLIC WORKS MAINT. FACILITY
Storm Sewer System	The down-gradient end of the facility's storm sewer system terminates at a dry pond. The bottom of this dry pond is vegetated. In the year 2006, a plug was installed in the dry pond's low-flow outlet. This plug causes stormwater to be temporarily stored in the pond during heavy rain events. WES Field Operations crews have observed this dry pond during the past 7 years, and they believe it is likely that it hasn't discharged stormwater off-site into the MS4 (outfall #CC16A-106) during even the largest storms during this time. The soils which the dry pond is situated in have a high water percolation rate.	Drainage from the entire facility flows through a swale. Stormwater runoff from the facility has been visually assessed by City of Happy Valley staff as it enters the swale and they've determined that the stormwater is generally quite clean. The swale's length is roughly 200 feet and its width is roughly 15 feet. Cattails grow in the bottom of this swale. If pollutants are ever present in significant concentrations in the stormwater which enters this swale, at least some of that pollution is expected to be removed as the water passes through the swale.
Strategy to reduce the impact of stormwater runoff	WES will continue to watch this dry pond in future years to confirm that it continues to infiltrate the Decant Facility's stormwater runoff. If it does continue to infiltrate the Decant Facility's stormwater runoff, no further action is proposed unless the dry pond is suspected of causing groundwater pollution.	The City will continue to visually inspect and assess the stormwater as it enters the swale from time to time in future years to: 1) view the quality of the stormwater which enters the swale from the Facility, and 2) inform discussions about the swale's pollutant removal effectiveness.
Other items stored at this facility	1) some non-leachable materials, such as steel pipes, which are stored in outdoor areas, and 2) a CCSD#1-owned wastewater pumpstation is also located on the property.	1) a 1,500 gallon gasoline tank and a 300 gallon diesel tank in a curbed fueling area, 2) sand for road traction which is applied during ice/snow events, and 3) bark chips for landscaping.

Table 3 (below) includes a description of selected facilities which could potentially be regulated as a Municipal Facility by the permit's Schedule A(4)(g)(iii), but they are not located in the portions of the City of Happy Valley, SWMACC, and CCSD#1 which are regulated by the MS4 permit. Municipal Facilities listed in Table 3 are not addressed by this strategy.

Table 3

FACILITY NAME	LOCATION	FACILITY OWNER	REGULATED FUNCTION WHICH OCCURS AT FACILITY
Temporary storage facility for yard debris	The County's Red Soils Campus in the City of Oregon City. Doesn't have a street address; is behind a bldg which is used by Corrections Crews. Is ~12 ft from the Western edge of 1810 Red Soils Ct.	Clackamas County	This uncovered storage area is emptied several times/year. Storm-water which falls here doesn't discharge into a MS4 or other type of storm sewer system. Runoff flows into a large grassy area. During a large, heavy rain event, runoff could enter Mud Ck, although the creek is ~ 319 feet away.

FACILITY NAME	LOCATION	FACILITY OWNER	REGULATED FUNCTION WHICH OCCURS AT FACILITY
Maintenance Facility for Clackamas County's Transportation Maintenance Group	902 Abernethy Road in the City of Oregon City	Clackamas County's Dept. of Transportation & Development (DTD)	Car/truck/equipment maintenance is conducted at this facility. Solid waste which has been captured by street sweepers may also be temporarily stored here. DTD has a separate MS4 Permit SWMP. See this document for more information.
Various	Various	Clackamas River Water (CRW), Sunrise Water Authority (SWA), Clackamas Fire District No. 1 (CFD#1), Rivergrove Water District (RWD), etc.	CRW, SWA, etc., are special service districts. They're separate legal entities with their own separately elected Board of Directors, etc. Although they may have 1 or more facilities in the MS4-permitted portions of CCSD#1, SWMACC, and/or the City of Happy Valley, those facilities are not defined as Municipal Facilities per Schedule A(4)(g)(iii).

Table 4 (below) includes information about MS4 permit holders/partners which do not own or operate any Municipal Facilities which are regulated by the permit's Schedule A(4)(g)(iii).

Table 4

NAME	DESCRIPTION
City of Rivergrove	On May 28, 2013, Sheri Richards, the City of Rivergrove's City Manager, confirmed that the City of Rivergrove does not own or operate any Municipal Facilities which are regulated by the permit's Schedule A(4)(g)(iii).
North Clackamas Parks & Recreation District (NCPRD)	On May 28, 2013, Kevin Cayson, the NCPRD's Parks Maintenance Supervisor, confirmed that the NCPRD does not own or operate any Municipal Facilities which are regulated by the permit's Schedule A(4)(g)(iii) that are also located in the portions of the City of Happy Valley, SWMACC, and CCSD#1 which are regulated by the MS4 permit. The NCPRD is a Clackamas County Service District which might be regulated by the MS4 permit.
Clackamas County Development Agency (CCDA)	The CCDA is the urban renewal authority for Clackamas County. A compost manufacturing facility at 11678 SE Capps Road in CCSD#1 is located on land which is owned by the CCDA. A for-profit business owns and operates this facility under a lease from the CCDA. It is our understanding that this facility is not a Municipal Facility as defined by the permit's Schedule A(4)(g)(iii). Although this facility does accept yard debris and other vegetation, only a small percentage of the facility's raw materials are brought to this facility by the Cities of Happy Valley & Rivergrove, Clackamas County, CCSD#1, and/or SWMACC. The upper-most section of the driveway at SE Capps Road is the only fraction of the facility which discharges into the MS4; much of the remaining area drains into an on-site infiltration pond.

Exhibit 4
Declaration and Maintenance Agreement for On Site Stormwater Facilities – Hidden Falls Subdivision – May 6, 2013

TP 45-12
50 lots

Clackamas County Official Records
Sherry Hall, County Clerk

2013-041091

$78.00

01690445201300410910070076

06/13/2013 02:57:28 PM

D-MA Cnt=1 Stn=4 KANNA
$35.00 $16.00 $17.00 $10.00

NO CHANGE IN TAX STATEMENTS

AFTER RECORDING, RETURN TO:

Clackamas County Service District #1
150 Beavercreek Rd. Suite 430
Oregon City, OR 97045

DECLARATION AND MAINTENANCE AGREEMENT FOR ON SITE STORMWATER FACILITIES

THIS DECLARATION AND MAINTENANCE AGREEMENT FOR ON-SITE STORMWATER FACILITIES is made this 6th day of May, 2013, by and between CLACKAMAS COUNTY SERVICE DISTRICT NO. 1, a County service district (District) and Hidden Falls Development LLC (Developer).

RECITALS: On or about July 1, 1993, District was delegated the responsibility and authority to implement a comprehensive and integrated stormwater program to provide for water quality and quantity control arising from property development. The Board of County Commissioners, acting as governing body of the District, made a policy decision that stormwater systems could be owned privately by the landowner(s), by an entity representing landowners or, under certain circumstances, by the District. Developer has asked District to consider accepting the on-site stormwater improvements for the development as part of the public stormwater system which would require facilities and rate setting studies, amendments to the existing Rules and Regulations, program manuals, and standard agreements. The District is willing to accept these program modifications and the parties agree, in consideration of the Developer executing this Agreement, to provide for the ownership of the on-site stormwater facilities. This Agreement will be recorded and binding upon Developer and Developer's heirs, successors, and assigns, shall run with the land as to each successive owner of any lot in the development served by this facility ("Owners"), and shall bind each such Owner with respect to its period of ownership. Therefore, the parties agree as follows:

1. Property. Developer is the owner of the property referred to in Clackamas County Case File No. Z0028-12-SL, known as Hidden Falls Subdivision. A full description of the property subject to this Declaration is set forth on Exhibit 1, attached hereto and incorporated by reference (hereinafter the "property" or "development").

2. Plat Approval. In consideration of the execution by Developer of this Agreement and performance of Developer's obligations hereunder and reference on the plat that the property is subject to the terms of this Agreement and the District's Rules and Regulations, District agrees to approve the plat as submitted by the Developer.

3. Ownership. In consideration of Developer's execution of this Agreement and compliance with its terms, District hereby acknowledges that it shall assume ownership of the stormwater facilities described on Exhibit 2, attached hereto and incorporated by reference.

Developer specifically agrees as follows:

1

a. To obtain District approval of facility plans for the property;

b. To record this Agreement in the Clackamas County real property records so that it becomes a covenant running with the land and waiver of remonstrance to an assessment district, on site maintenance fee, or other funding mechanism chosen by the District to collect fees or charges against the property for operation, maintenance, repair, and replacement of the stormwater facilities;

c. To design and construct the stormwater facilities with approved materials and good workmanship according to District standards at the Developer's sole cost and expense.

d. Developer must provide a statement of design and construction costs acceptable for use in the District's fixed asset accounting system;

e. To allow District to inspect, at its own expense, the facility following completion of construction; any repairs or maintenance work shall be performed by the Developer as determined by the District following inspection; any repair or maintenance shall be subject only to those District standards which were in place at the time the permit for construction of the facility was issued; and

f. To provide a maintenance bond in favor of the District and to follow the maintenance schedule established by the District set forth on Exhibit 2 for the first year following District's Acceptance.

4. Maintenance Obligation. The Developer shall be obligated to operate, maintain, and repair the stormwater facilities for the first year. The District shall be obligated to operate, maintain, and repair the stormwater facilities after the first year and throughout its period of ownership of the facility. Operation and maintenance shall be performed according to the District's defined schedule that details tasks and time of performance, a copy of which is attached as Exhibit 2. The requirements of Exhibit 2 may be modified following District inspection if as-built facilities differ from originally proposed facilities. Nothing in this Agreement shall obligate the District to any construction standards other than those which were in place at the time the permit for construction of the facility was issued.

5. Indemnity. Each party hereto agrees to indemnify and hold harmless the other from any and all damages, claims, liability, and the like, including attorneys' fees, arising out of the negligence or activities of that party resulting in damage to or affecting the on site stormwater facilities.

6. Guaranty. Developer and Developer's heirs, successors, and assigns hereby warrant the design and construction of the stormwater facilities as being free from defects for a period of one (1) year after the earlier of (i) final inspection and approval of the facilities by the District or (ii) the facilities first being put into operation, except for such work performed by District on behalf of Developer as required in Section 4 above. Developer shall cause any defective work to be remedied for which the District gives written notice of warranty claim during such period.

7. Easements. Developer and Developer's heirs, successors and assigns hereby grants to the District an easement for it to effectively perform operation, maintenance, repair, and replacement of the stormwater facilities, as shown on the plat, if any.

8. Waiver of Remonstrance. Developer, and for Developer's heirs, successors, and assigns, hereby voluntarily consents to those charges and fees imposed by the District for operation, maintenance, repair, and replacement of the on site surface water facilities, which will not exceed Three Dollars ($3.00) per month or until further District action. This will be in addition to the base fee under the District's Rules and Regulations, which is presently Six Dollars ($6.00) per month per equivalent service unit as set by the Board of County Commissioners. Developer, and for Developer's heirs, successors, and assigns, further consents to the formation of an assessment district if the District determines that is the best method of charging for these services, and waives any right of remonstrance against the formation thereof. District agrees to provide Owners with forty-five (45) days advance written notice of Districts desire to create such an assessment district. The undersigned hereby acknowledges that this Agreement is voluntarily executed for the purpose of inducing the District to accept ownership of the on site facilities.

9. Attorneys Fees. If a dispute should arise regarding any term of this Agreement, the prevailing party shall be entitled to such reasonable attorneys' fees.

10. Breach/Termination. If either party breaches any term of this Agreement, then the non defaulting party may upon ten (10) days prior written notice, give notice of such default. If such default is not cured within thirty (30) days following such notice, or if not reasonably susceptible to cure within such time, cure is not commenced within such time and thereafter diligently prosecuted to completion, then the non defaulting party may declare this Agreement at an end or pursue any other remedy available including injunctive relief. In the event of an Owner default under this Agreement not cured within the foregoing period, then the District may record a document terminating this Agreement, and District shall have no further obligation therefor.

11. Disputes. The parties agree that all disputes shall be resolved through mediation, and if such mediation is not successful, then through arbitration by an arbitrator appointed by the Presiding Judge of the Circuit Court of Clackamas County, Oregon pursuant to ORS Chapter 36.

12. Notices. Any notice required hereunder shall be sufficient if deposited in the United States Mail, postage prepaid, addressed to the following:

District:	Developer:
Clackamas County Service District #1 Attn: Director 150 Beavercreek Rd. Suite 430 Oregon City, OR 97045	Hidden Falls Development LLC 1980 Willamette Falls Dr. #200 West Linn, OR 97068

13. Representation. The undersigned represent (s) to the District that he/she/they is/are the owner (s) of the property and have full authority to execute this document and bind all owners and the property.

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IN WITNESS WHEREOF, the parties have executed this Agreement as of the date set forth above.

CLACKAMAS COUNTY SERVICE DISTRICT No. 1

By: _____
Director, Water Environment Services

STATE OF OREGON)
) ss.
County of Clackamas)

This instrument was acknowledged before me on this 13th day of May, 2013, by Michael Huenzi [name] as Director [title] on behalf of Clackamas County Service District No. 1.

OFFICIAL SEAL
CHARO R HERNDON
NOTARY PUBLIC - OREGON
COMMISSION NO. 452983
MY COMMISSION EXPIRES NOVEMBER 15, 2014

Charo R. Herndon
Notary Public for Oregon
My Commission expires: November 15, 2014

DEVELOPER

_____

Name: Mark Handris

Title: Member

STATE OF OREGON)
) ss.
County of Clackamas)

This instrument was acknowledged before me on this 6th day of May, 2013, by Mark Handris [name] as Member [title] on behalf of Hidden Falls Development LLC, Developer.

OFFICIAL SEAL
MELANIE E ALBEN
NOTARY PUBLIC-OREGON
COMMISSION NO. 440109
MY COMMISSION EXPIRES JULY 14, 2013

Melanie E Alben
Notary Public for Oregon
My Commission expires: July 14, 2013

Exhibit 1

LEGAL DESCRIPTION

A duly recorded subdivision situated in Section 1, Township 2 South, Range 2 East, of the Willamette Meridian, County of Clackamas and State of Oregon, more particularly described as:

Hidden Falls Subdivision, Clackamas County Plat Number 4361 Clackamas County Plat Records, Oregon.

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Exhibit 2

This agreement applies to stormwater conveyance pipes and related appurtenances as follows:

A) The developer will be responsible for all storm facilities constructed as part of this subdivision plus any additional facilities that are specifically identified in this agreement. This responsibility shall continue until the District or some responsible agency takes them over.

B) After CCSD #1 takes over the storm system for ownership and maintenance, its responsibility will include only facilities that meet all of the following criteria:

Were constructed as part of this subdivision.
and
Are outside of the road Right-of-Way.
and
Are contained in public easements, or tracts.
and
Are neither individual roof drain lines nor lines smaller than 8" in diameter.

These facilities shall be cleaned at the expense of the developer at least once immediately before acceptance by CCSD #1 for maintenance. The sediment and debris shall be disposed of at an approved disposal site.

Any of the facilities listed below that are located on the site shall be cleaned as outlined below and any necessary repairs performed. Any facilities not mentioned below, will be maintained and/or repaired as needed.

Detention Pond ---------- Remove sediment from bottom of pond. Clean associated pond outlet structures, and overflow weirs.

Detention Pipe ---------- Clean all sediment & debris form detention pipe.

Sedimentation M.H. --------- Located at one or both ends of detention pipe. Clean out sump.

Storm Manhole ---------- Clean sediment and debris from bottom of manhole.

Pollution Control M.H. ------ Clean out sump and baffles.

Control Manhole ---------- Clean out sump. Inspect overflow riser & orifice for obstructions.

Private Storm Pipe ---------- Remove sediment from pipe and 18" sumps of affected catch basins and junction boxes.

Storm sewer cleanout ---------	For access purposes to clean and maintain storm sewer pipes.
Bio-Swale ----------	Remove sediment & inspect any weirs, orifice, and control structures for obstructions.
Drywell ----------	Remove sediment from sump in the drywell, & the sediment from the sump of the associated sedimentation manhole.
Access Portal ----------	For access purposes to clean and maintain a storm detention pipe.
Drainage Swale ----------	Remove sediment, debris. Do not remove roots of vegetation.
Modified Trapped CB -------	Clean sump. Inspect riser tee and orifice for obstructions.
Ditch Inlet Catch basin ------	Clean sump and grate.
Pond Outlet Structure --------	Clean sump. Inspect associated overflow riser, and orifice for obstructions.
Siltation Basin----------	Remove sediment from bottom of basin. Clean associated overflow structure.

Exhibit 5
WES Annual Reporting Reminder Letter for Private, Non-Residential Stormwater Controls

WATER ENVIRONMENT SERVICES
A Department of Clackamas County

KMK 12/18/14

October 9, 2013

Mr. Sherry Uchytil
PCC Structurals, Inc.
4600 SE Harney Drive
Portland, OR 97206-0898

On behalf of Clackamas County Service District No 1(CCSD #1), Water Environment Services (WES) is reminding property owners of the annual requirement regarding the maintenance of stormwater collection and treatment devices at your facility. The requirement is outlined in the Commercial Maintenance Agreement between you and the District. Among the actions outlined in the agreement is the requirement to submit an annual report to WES documenting the storm drainage maintenance activities undertaken each calendar year. Before December 31, 2013, please submit the following:

- The number of storm drainage devices located on your property
- Date(s) of maintenance activities
- Name(s) of company performing the maintenance
- Type and weight of waste removed
- Current contact information

For your convenience, an on-line report form is available for use and can be found on the WES website at http://www.riverhealth.org/annual-stormdrain-structure-maintenance-report. If you prefer, your annual report can be emailed to johnnagy@co.clackamas.or.us or faxed to 503-742-4599. If you wish to mail your annual report, please submit to:

Water Environment Services
Attn: John Nagy
150 Beavercreek Rd
Oregon City, OR 97045

CCSD #1 is committed to providing you with high quality, reliable services that protect the environment and public health. As part of that, we appreciate your compliance with the agreement terms. To provide a cost savings option to our business partners, WES is working with a storm drain cleaning service to assist you with these efforts. Information on this discounted rate has been mailed to you and it can also be found at *http://www.riverhealth.org*.

If you have any questions, please contact myself at 503-742-4594 or email johnnagy@co.clackamas.or.us.

Sincerely,

John Nagy, WES

Agreement Number: SW 00685

Exhibit 6
Clackamas Promenade Shopping Center Maintenance Agreement

CLACKAMAS PROMENADE
Storm Drainage Facilities
Maintenance Schedule

RECEIVED
JUN 2 0 1997
CLACKAMAS COUNTY
DEPT. OF UTILITIES

Location:
Tax Lot 3200
Clackamas County, Oregon

Facilities to be maintained:

* 2 catch basins on the south side of the Target store building
* 2 detention ponds on the south side of the Target store building
* 1 outlet control manhole at the western end of the western most detention pond

Acknowledgment:

The Owner agrees to maintain the above private storm drainage facilities per the following schedule:

1. The facility will be inspected annually during the months of October or September, prior to the onset of the heavy rainfall. All oils, sediments and other debris shall be removed and deposited at an approved dump site from the trapped catch basins and pollution control manholes.
2. The grates on the catch basins shall be kept clean of debris and leaves.
3. The facilities shall be inspected annually to ensure that there are no plugged or damaged equipment. All repairs will be made as soon as identified that corrections are necessary.

LANDLORD:

STATE OF CALIFORNIA PUBLIC
EMPLOYEES' RETIREMENT SYSTEM
an agency of California

By: RREEF AMERICA, L.L.C.,
a Delaware limited liability company,
its Agent

By: Timothy K. Gonzalez
Timothy K. Gonzalez

Its: Authorized Representative

Date: 6/16/97

This instrument was acknowledged before me on attached
Notary