Appendix A
OLSD Best Management Practice Activity Summary

Appendix A
OLSD Best Management Practice Summary

OLSD Best Management Practices

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Planning Measures Best Management Practices
SWMP Section 4.1.2 and Section 6.0

Planning Measure 1	
BMP	Trapped Sumps in Catch Basins and Water Quality Manholes
BMP Description	This BMP involves installing traps and sumps in catch basin and manholes for new development. The sumps and traps remove sediment and floatable material
Schedule for Implementation	On-going
Performance Measure	Number of BMP devices installed during development activities.
Estimated Pollution Reduction	This BMP anticipates that trapped catch basin and water quality manholes will remove pollutants to the Maximum Extent Practicable standard.
2010/2011 Activity Reporting	The District installed two catch basins and two water quality manholes this year.
2010/2011 Assessment of BMP Effectiveness	This BMP involves installing traps and sumps in existing un-serviced areas and in new development. This BMP reduces the current pollutant loading to the watersheds and precludes new loadings associated with development activities. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Planning Measure 2	
BMP	Erosion Control Measures
BMP Description	This BMP involves regulating construction practices for erosion control. OLSD requires that property owners/contractors practice erosion control measures whenever activities disturb the soil. OLSD requires the contractor/owner submit a plan, obtain a permit, install and maintain erosion control measures during the construction process. OLSD inspects the erosion control measures and requires upgrades to meet water quality guidance. This BMP reduces the sediment and other pollutants from construction activities.
Schedule for Implementation	On-going
Performance Measure	Number of permits issued, number of inspections, responses to complaints, number of corrective actions. Summarize in annual report.
Estimated Pollution Reduction	This BMP anticipates that erosion control measures remove pollutants to the Maximum Extent Practicable standard.
2010/2011 Activity Reporting	The District reviewed/issued 69 permits, performed 95 initial inspections, 73 final inspections, and 103 other inspections. The District responded to 1 erosion control complaint.
2010/2011 Assessment of BMP Effectiveness	This BMP reduces the amount of sediment loads into the receiving bodies associated with construction activities. Field measurements indicate that turbidity and suspended solids are not excessive within the District. Due to the low number and minor nature of erosion concerns compared to the total construction activity in the District, this BMP is considered effective and changes to the Stormwater Management Plan are not required.

Planning Measure 3	
BMP	Development Review Measures
BMP Description	This BMP involves the OLSD review of land use actions and development plans. OLSD reviews potential land use actions submitted to Clackamas County Planning. OLSD submits specific comments regarding stormwater facilities, including WQ requirements, to the County, where they are incorporated into the conditions of approval. After land use approval, the developer submits plans to OLSD for review. OLSD reviews the plans/documents for compliance with OLSD requirements.
Schedule for Implementation	On-going
Performance Measure	Number and types of reviews. Summarize in annual report.
Estimated Pollution Reduction	This BMP anticipates that development reviews measures remove pollutants from new development to the Maximum Extent Practicable standard.
2010/2011 Activity Reporting	The District did not receive any new development applications this fiscal year.
2010/2011 Assessment of BMP Effectiveness	This BMP insures that new development meets the District's ordinance water quality requirements. This BMP is considered effective for improving existing water quality concerns, mitigating impacts with development, and ensuring that water quality concerns are addressed prior to any construction. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Planning Measure 4	
BMP	Sensitive Land Measures
BMP Description	This BMP involves the implementation of sensitive land requirements in the riparian zones. OLSD requires that developer protect, maintain or mitigate activities in the stream areas. OLSD generally prohibits construction of structures within 25 feet from the creek or stream. If encroachments are necessary, OLSD requires mitigation of the impacts. This protection of the riparian zones not only maintains the quality of the ecozone, but provides many natural methods of pollution treatment.
Schedule for Implementation	On-going
Performance Measure	Summarize sensitive lands activities in annual report.
Estimated Pollution Reduction	This BMP anticipates that sensitive lands activities will remove pollutants to the Maximum Extent Practicable standard.
2010/2011 Activity Reporting	The District did not receive any sensitive lands encroachment applications and responded to one complaint.
2010/2011 Assessment of BMP Effectiveness	Enforcing the Districts sensitive lands requirements improves wildlife habitat, flood storage and conveyance, removes sediment and bacteria, and encourages shade. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Planning Measure 5	
BMP	BMP Implementation and Adaptive Management
BMP Description	This BMP involves the OLSD ongoing adaptive management program. This program evaluates and improves the existing stormwater infrastructure in the District. From this program, the District will implement new BMPs, install new pollution control devices, upgrade failing storm water systems, repair existing riparian areas and other benefits.
Schedule for Implementation	On-going
Performance Measure	Annual review of BMP effectiveness, implementation of new measures, Annual report to DEQ.
Estimated Pollution Reduction	This BMP will remove pollutants to the Maximum Extent Practicable standard.
2010/2011 Activity Reporting	• The District continued implementation of its $6.625 million 10-Year Capital Improvements Plan. • The District engaged in a strategic planning process for the surface water program. Utilizing the District's standing committee, a consultant reviewed the District's program for customer satisfaction, regulatory requirements, jurisdictional responsibilities, ordinances, funding, program focus and environmental concerns. The District progressed on the strategic planning process to begin establishing an action plan for the future. This strategic plan will establish the surface water needs of the District, set priorities, and guide operational, capital and financial decisions into the future. The District Board of Directors adopted the plan in February 2011. • The District upgraded its efforts to get water quality information into the schools. • The District continued its partnership with the North Clackamas Park and Recreation

Planning Measure 5 - 2010/2011 Activity Reporting (continued)	District for improvement of riparian areas at Stringfield Park, Risley Park, and Rivervilla Park. These improvements will improve riparian areas and establish shade in the stream corridors. • The District continued with Trimet and the North Clackamas Park and Recreation District with improving the natural areas associated with the proposed Park Avenue Light Rail Station. This project enhances a riparian natural area and treats runoff from both the station and McLoughlin Blvd. • The District's stormwater monitoring program continued monitoring the quality of the water entering and leaving River Forest Lake. The monitoring indicates minimal levels of urban pollution flowing into the lake. • The District continued water quality sampling in the Kellogg and Boardman Creek watersheds. The data indicates generally good quality surface water leaving the District. • The District continued its monitoring program to periodically sample the 11 regulatory outfalls in the District. This monitoring indicates low pollution loadings from these discrete basins. • The District's monitoring program indicates a general low level of pollution in the urban streams and sediments. Nutrients, sediments, BOD and temperature do not exceed water quality concerns. Bacteria levels, most probably due to natural causes, can occasionally exceed water quality standards and the District continues to investigate the sources of this bacteria and methods to control it. • The District's erosion control program continued to ensure that contractors prevented sediments from leaving construction sites. The success of this program is evidenced by the low turbidity measurements in the creek.

	• The District's public education efforts broadened through pollution investigations, publication of educational brochures and pollution prevention tips in its newsletter, participation in the Regional Coalition for Clean Rivers and Streams, and participation in the Regional Erosion Prevention and Sediment Control Awards Program. The District continues to work with local commercial and industrial customers through the development review process to prevent pollutant discharges to surface water. The District intends to increase resources assigned to this BMP to potentially prevent accidents from occurring in the future. The lack of industrial pollution indicates this management practice proves effective in improving water quality. • The District responded to 6 pollution incidents this year. None of the incidents were considered significant or resulted in enforcement action. Otherwise the nature of the types of discharges, their general low impact to water quality, the District's ability to quickly correct the situation and the mitigating factors demonstrate the District's pollution prevention efforts to be effective. • The Oak Lodge Sanitary District utilized its geographic data of the stormwater components for the GIS system. The District purchased a new Computerized Maintenance Management System and began conversion of its surface water assets onto the system. This news system is GIS driven and allows the District to engage in proactive management of its surface water assets. • The District continued monitoring and cleaning sedimentation manholes to determine their effectiveness in capturing suspended particles and to establish an appropriate cleaning schedule. • The District initiated a preventative maintenance program for District owned pipes, catchbasins and other assets. • The District initiated a surface water ordinance revision process to update the District legal authority. • The District participated in two major land use studies to ensure that water quality concerns are incorporated into planning efforts.

Planning Measure 5 (Continued)	
2010/2011 Assessment of BMP Effectiveness	Based upon measured water quality, the District considers its stormwater program effective in controlling stormwater discharges to the maximum extent practicable. The District's adopted BMPs provide a sound mechanism to prevent pollution, regulate illicit discharges, educate the public on water quality, control sediments, mitigate impacts of new development, improve existing conditions, and maintain the stormwater discharge system. All the BMPs contained in the Stormwater Management Plan are considered effective with modifications or addition unnecessary. While changing the Stormwater Management Plan isn't necessary, the District intends continue improving implementation of each BMP.

Public Education/Outreach Best Management Practices
SWMP Section 4.2

Public Education/Outreach Measure 1	
BMP	Household Waste, Pesticide, Herbicide Education
BMP Description	This BMP involves OLSD providing information on household wastes, pesticides and herbicides. OLSD makes an effort to specifically address these issues through newsletter articles, media exposure, brochures, and educational opportunities.
Schedule for Implementation	On-going
Performance Measure	Number of annual educational activities. Summarize in the annual report.
Estimated Pollution Reduction	Public Education activities assist the District in achieving a Maximum Extent Possible Standard.
2010/2011 Activity Reporting	The District sponsored to two Drug Take-Back events this year. The District partnered with the Clackamas County Sheriff to offer the community an opportunity to safely dispose of unwanted pharmaceuticals to prevent them from being flushed down the drain. The District participated in three public education events during the last fiscal year. The District continued distributing pamphlets and publishing newsletter articles. .
2010/2011 Assessment of BMP Effectiveness	The District's efforts to reduce residential waste discharge are on-going and effective. Public awareness of individual actions reduces the amount of pollutants in the watershed. With low levels monitored during previous fiscal years, this BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Public Education/Outreach Measure 2	
BMP	OLSD Newsletters
BMP Description	This BMP involves OLSD providing information on stormwater related topics through its newsletter mailed out seasonally. This is a very directed method of disseminating educational information.
Schedule for Implementation	On-going
Performance Measure	Number of articles and type of articles. Summarize in the annual report.
Estimated Pollution Reduction	OLSD newsletters assist the District in achieving a Maximum Extent Possible Standard.
2010/2011 Activity Reporting	The District distributed 15 newsletter articles containing stormwater related topics including the District's Capital Improvement Plan, naturescaping, the District's surface water strategic plan, and other topics .
2010/2011 Assessment of BMP Effectiveness	The Districts newsletter publishing is on-going and effective. In the past over1000 out 8000 accounts responded to the District's surface water survey. Public awareness of individual actions reduces the amount of pollutants in the watershed. These newsletters allow contact to a targeted audience with water quality messages. The District intends continued use of newsletter articles with expanded topics. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Public Education/Outreach Measure 3	
BMP	Catch Basin Stenciling
BMP Description	This BMP involves stenciling catch basins in the District. OLSD utilizes volunteers for this activity. Stenciling raises public awareness of the ultimate destination of the runoff and the potential environmental impacts.
Schedule for Implementation	On-going
Performance Measure	Summary of stenciling program in annual report.
Estimated Pollution Reduction	Catch Basin stenciling activities assist the District in achieving a Maximum Extent Possible Standard.
2010/2011 Activity Reporting	The District stenciled two catch basins this year.
2010/2011 Assessment of BMP Effectiveness	Catch basin stenciling educates the public on the ultimate discharge destination of stormwater. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Public Education/Outreach Measure 4	
BMP	Educational Brochures and Signage
BMP Description	This BMP involves preparation of educational brochures. Periodically OLSD will prepare or participate in the preparation of new brochures regarding environmental topics.
Schedule for Implementation	On-going
Performance Measure	Description of existing brochures in annual report.
Estimated Pollution Reduction	Public Education activities assist the District in achieving a Maximum Extent Possible Standard.
2010/2011 Activity Reporting	This year the District introduced a new informational brochure titled "Living Green." Previously the District produced a brochure titled "A Watershed Moment – It Only Takes a Moment to Start Saving Our Future" which was mailed to all owners of property abutting a waterway within the District. Other educational brochures that continue to be available in the Administration Building foyer are: "The River Starts Here" (a brochure regarding the impact of individual actions on surface water quality), "Treating Our Waters With Care…An Investment In Our Future" (a description of the cycle of waste and surface water in the environment), "Managing Paint Waste Wisely" (information on paint waste and how best to dispose of different types of paints), "Stream Friendly Home and Yard Care" (alternatives to the "chemical" approach to home and yard care), and "Stream and Wetland Enhancement Guide" (information on care of riparian areas and lists of both "good" and "bad" plants to use in these areas). The District hosted a booth at the Milwaukie Farmers Market. Staff educated booth visitors about District projects and services and distributed brochures and other educational materials.

	The District continued distribution of existing brochures.
20109/2011 Assessment of BMP Effectiveness	The Districts use of brochures is on-going and effective. Public awareness of individual actions reduces the amount of pollutants in the watershed. These brochures provide detailed information about specific water quality messages which assists the District in promoting clean water. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Public Education/Outreach Measure 5	
BMP	OLSD Website
BMP Description	This BMP involves using the OLSD website for education. OLSD posts articles, regulations, announcements, reports, links and other pertinent information on the website. This makes the OLSD information easily accessible.
Schedule for Implementation	On-going
Performance Measure	Summary of website activities in annual report.
Estimated Pollution Reduction	The OLSD website assists the District in achieving a Maximum Extent Possible Standard.
2010/2011 Activity Reporting	This year, the District has worked to use the website as a major communication tool by keeping information up to date and encouraging customers to use it. The District produced a video describing the importance our water resources called Protecting Our Community's Watersheds and Streams . This video was is available for distribution in the District office and is also available for viewing on the District website. The District continued utilizing the website for posting articles, announcements, publishing reports and minutes, providing links, and other pertinent activities.
2010/2011 Assessment of BMP Effectiveness	The District's website remains a resource for information regarding stormwater activities and requirement in the District. The District intends to continue and expand use of the website in the future. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Public Education/Outreach Measure 6	
BMP	OLSD Participation in Regional Educational Activities.
BMP Description	This BMP involves the OLSD involvement in regional educational activities. When available, OLSD participates in regional media efforts with other jurisdictions in the Portland Metro area. These activities allow OLSD to utilize media outlets that are normally cost prohibitive, and allow a wider dissemination of educational information.
Schedule for Implementation	On-going
Performance Measure	Summary of activities in annual report.
Estimated Pollution Reduction	Regional public education activities assist the District in achieving a Maximum Extent Possible Standard.
2010/2011 Activity Reporting	Risley Park Meeting- February 1, 2011. The District conducted a neighborhood meeting to discuss the upcoming riparian improvements to Risley Park. OLSD and NCPRD intend to restore approximately 400 feet of creek by removing invasive species and planting natives for shade and water quality. The meeting was intended to educate the neighbors on the project and obtain feedback on the design. School Outreach Program This year the District visited 9 classrooms to present water environment education programs. The District expanded its school outreach program to include additional lessons outside the River Ranges Program. The District now offers:

	Water Cycle Play Grades: K-2nd Program Length: 30-45 minutes Students learn about the water cycle through an active role playing activity. Students become water drops and also learn the value of water to their community and the importance of keeping it clean. *The Incredible Journey* Grades: 1st -5th Program Length: 30-45 minutes This activity gets students up out of their seats so that they can experience the movement of water through the water cycle. Students also learn the impact we have on the water cycle, pollution, and the importance of water and wastewater treatment. Students get the opportunity to role play a water molecule to help them conceptualize the water cycle as more than a predictable two-dimensional path. *River Rangers* Grades: 3rd-6th Program Length: 30-40 minutes This interactive program offers students the opportunity to learn how everyday activities impact water quality via sewer and storm systems. Students learn about the water cycle, watersheds, surface water pollution, water conservation and wastewater treatment. The presentation helps students understand they can make a difference. The presentation and activity book are designed to provide clean water fundamentals in a manner that incorporates active group and individual participation as well as take home activities.

	So You Want to be a Salmon? Grades: 3rd-6th Program Length: 45 minutes This activity allows students to role play the life of a salmon or steelhead in order to understand the difficulties they face during migration. Students will discuss the natural and man-made obstacles that these fish face and how some everyday activities can impact their lives. *A Drop in the Bucket* Grades: 3rd-Adult Program Length: 30 minutes Students learn how old water really is and just how much is available for use. Through a visual demonstration, students begin to appreciate the value of water and the importance of keeping it clean. *Enviroscape® Wastewater Model* Grades: 4th-8th Program Length: 30 minutes Learn how a wastewater treatment plant really works. This hands-on model allows students to see a process that is usually out of sight and out of mind. Students are introduced to thinking about what happens when water goes down the drain; how wastewater moves through homes and businesses and the difference between sewer and storm water lines. *Amazing Water* Grades: 2nd-6th Program Length: 30 minutes Students learn what happens when water goes down the storm drains and the importance of protecting run-off from pollution. This hands-on activity allows students to see first-hand how water is easily polluted as they guide a water drop through a maze.

	Keep it Flowing, Know Where it's Going! Grades: K-12 Program Length: 30 minutes- I hour Students see a sanitary sewer and surface water pipe inspection truck first hand. Oak Lodge Sanitary District field workers bring the truck to your school and show your students how the closed circuit TV camera is used to inspect sewer and surface water pipes. Discussion of the process can be catered to any age group! The District has a staff person who participates in the Clackamas Water Education Team. This is a group who represents the public water environment education interests of agencies within Clackamas County. In addition, the District participated in the Clackamas County Water Education Team's Celebrate Water Event and The Children's Clean Water Festival. These events allowed the District to reach around 1500 4th and 5th grade students. The District's booth gave students the opportunity to see how pollution is washed into streams and how they can help prevent it. The District is also pursuing opportunities to reach high school students. Staff gave a presentation to New Urban High School students regarding the importance of surface water management and the issues surrounding it. Staff also gave a series of presentations to Rex Putnam High School students regarding their impact on their watershed and how to build a rain garden including lessons on soil percolation testing. Regional Coalition for Clean Rivers and Streams Oak Lodge Sanitary District is a partner in the Regional Coalition for Clean Rivers and Streams in providing and disbursing environmental information. A group of cities and surface water utilities in the Portland Metro area established the Regional Coalition for Clean Rivers and Streams to pool resources in developing a broad-based, coordinated public information campaign. This campaign raises awareness of surface water pollution and its negative effects on water quality and fish health. The cooperative effort resulted in an annual media campaign targeted at more than one million residents in the tri-county area.

	The Coalition worked together to draw up a five-year intergovernmental agreement outlining the roles and responsibilities of the member agencies and cities. The agreement, which was renewed for another five years in May 2007, allows for an annually updated work plan. The District continued participating in the regional consortium (Coalition for Clean Rivers and Streams) for advertising. The consortium provided a variety of mass media advertising. The campaign uses a combination of media to reach a broad audience with a water quality/pollution prevention message. The message, media, and effective number of residents reached by the media are outlined in the annual report. This past year's campaign utilized a cable TV ad program, and updated web site (http://www.cleanriversandstreams.org/) and informational phone numbers. Naturescaping The District hosted naturescaping workshops on November 6, 2010 and April 2, 2011 to help attendees learn the value of planting native species in their landscapes. Community members who attended learned that planting native species helps them save on their ices to restore the stream area of the park. This has been a great tool to use to show the community the benefits of natural landscape. In addition, the District completed a project to implement naturescaping techniques in the landscaping around the Administration Building that can be used as a teaching tool for future workshops.
2010/2011 Assessment of BMP Effectiveness	The District's participation in the regional consortium allows for wider dissemination of water quality messages both in the District and throughout the metro area. For a reduced investment, the District's water quality message gets exposure in media normally beyond District financial resources. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Public Education/Outreach Measure 7	
BMP	SWM Citizens Advisory Committee.
BMP Description	This BMP involves the on-going activities of the OLSD SWM CAC. This group advises staff and the Board of Directors on SWM concerns, represents the District in the community, participates in the adaptive management process, advises on fiscal matters, and assists in prioritizing District resources.
Schedule for Implementation	On-going
Performance Measure	Annual report SWM CAC activities.
Estimated Pollution Reduction	Public involvement activities assist the District in achieving a Maximum Extent Possible Standard.
2010/2011 Activity Reporting	The District's Surface Water Management Citizen Advisory Committee (SWMCAC) is comprised of volunteers from the committee who are dedicated to protected water resources. The SWMCAC met on October, 2010, January 18, 2011, January 24, 2011, March 22, 2011, and April 5, 2011. These meetings were facilitated by Libby Barg and Clark Worth of Barney and Worth. The District hired Barney and Worth to help facilitate public involvement in the creation of the District's Surface Water Strategic Plan. At these meetings committee members participated in discussions regarding the values of the community and what the District's surface water management priorities should be moving forward. They were asked to review customer surveys as well as participate in electronic polling. The input from these volunteers has proven to be extremely helpful to the District as it helps guide staff through the planning process.

	The CAC reviewed, discussed and advised on capital projects, water quality requirements, fiscal policy, reviewed stormwater operations, public survey results, impacts of the recent flood, and participated in the watershed strategic plan. .
2010/2011 Assessment of BMP Effectiveness	The SWM CAC remains a fundamental public involvement tool. This group brings public perspective and review to many stormwater concerns. With wide representation and interests, the CAC offers many excellent suggestions that make the District more effective in its water quality mission. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Structural Best Management Practices
SWMP Section 4.1

Structural Measure 1	
BMP	Trapped Sumps in Catch Basins and Water Quality Manholes
BMP Description	This BMP involves installing traps and sumps in catch basins and manholes. The sumps and traps remove sediment and floatable material
Schedule for Implementation	On-going
Performance Measure	Frequency of cleaning, amounts of material removed. Summarize in the annual report.
Estimated Pollution Reduction	Installing trapped sumps assists the District in achieving the Maximum Extent Practicable Standard.
2010/2011 Activity Reporting	The District did not install any sumps or catch basins this year.
2010/2011 Assessment of BMP Effectiveness	The District increased the number of water quality facilities in 2009/2010. The majority of these new facilities served older un-serviced areas. These facilities reduce pollutant load from both existing urbanized areas and new development. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Structural Measure 2	
BMP	Car Washing BMPs
BMP Description	This BMP involves regulating auto related industry car wash practices. OLSD requires auto related industries perform car washing operation under rain cover and discharge the flows to the sanitary sewer. This BMP reduces the sediment, oil, detergent and other pollutants from car wash activities.
Schedule for Implementation	On-going
Performance Measure	Reporting of new development activities in the annual report.
Estimated Pollution Reduction	Regulating commercial washing activities assists the District in achieving the Maximum Extent Practicable Standard.
2010/2011 Activity Reporting	The District did not receive any development applications with potential for car washing. The District responded to two minor car washing pollutions complaints .
2010/2011 Assessment of BMP Effectiveness	With the large amount of auto related business inside the District, regulating this sector addresses a large potential for pollution. With the absence of incidents and complaints, this BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Structural Measure 3	
BMP	Fuel Dispensing Regulations
BMP Description	This BMP involves regulating fuel dispensing practices. OLSD requires that fuel dispensing operations disconnect the active areas from the stormwater system. The discharges are sent through an oil water separator that discharges to the sanitary system. This BMP reduces the amount of gasoline, oils and greases reaching the water bodies.
Schedule for Implementation	On-going
Performance Measure	Lack of oil and grease entering surface waters from these sites.
Estimated Pollution Reduction	Fuel dispensing regulation assists the District in achieving the Maximum Extent Practicable Standard.
2010/2011 Activity Reporting	The District inspected one fuel dispensing development applications in 2010/2011 for compliance with the ordinance requirements. The District did not experience any fuel dispensing related discharge.
2010/2011 Assessment of BMP Effectiveness	This BMP is considered effective in preventing fuel and oil discharges to the watershed evidenced by the lack of incidents and low levels of oil and grease present in the monitoring data. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Structural Measure 4	
BMP	Detention System Requirements
BMP Description	This BMP involves installing detention facilities on new developments over 2600 square feet in new impervious surface. These detention systems trap oil and sediments, reduce the site runoff, reduce stream velocities and prevent flooding.
Schedule for Implementation	On-going
Performance Measure	Number of installations, frequency of cleaning, amounts of material removed. Summarize in the annual report.
Estimated Pollution Reduction	Detention systems assist the District in achieving the Maximum Extent Practicable Standard.
2010/2011 Activity Reporting	No detention systems was installed in the District during 2009/2010.
2010/2011 Assessment of BMP Effectiveness	This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Structural Measure 5	
BMP	OLSD Capital Improvement Projects
BMP Description	This BMP involves the OLSD ongoing SWM Capital Improvement Program. This program improves the existing stormwater infrastructure in the District. These projects install new pollution control devices, upgrade failing storm water systems, repair existing riparian areas and other benefits.
Schedule for Implementation	On-going
Performance Measure	Number of projects and specific water quality benefits associated with each project. Summarize in the annual report.
Estimated Pollution Reduction	Implementing a capital improvement program assists the District in achieving the Maximum Extent Practicable Standard.
2010/2011 Activity Reporting	The District implemented the following Capital Improvement Projects: 1. The District engaged in a strategic planning process for the surface water program. Utilizing the District's standing committee, a consultant reviewed the District's program for customer satisfaction, regulatory requirements, jurisdictional responsibilities, ordinances, funding, program focus and environmental concerns. The District progressed on the strategic planning process to begin establishing an action plan for the future. This strategic plan will establish the surface water needs of the District, set priorities, and guide operational, capital and financial decisions into the future. The District Board adopted this plan in February 2011. A coy is attached as Appendix C of this report.

	3. The District began construction on its wastewater treatment plant. This project will include extensive surface water facilities. This project also includes invasive plant removal and native plantings in the adjacent park. 4. The District continued a natural areas project with the North Clackamas Park and Recreation District and TriMet for the proposed Park Avenue Station. This project was awarded a Nature in the Neighborhoods Grant by Metro. This project is scheduled for construction in 2012. 5. The District entered into an intergovernmental agreement with the North Clackamas Park and Recreation District for riparian improvements at the Risley, Rivervilla and Stringfield Parks. These improvements will improve habitat/water quality and provide shade. 6. The District obtained a Metro Nature in the Neighborhoods Grant for the Walta Vista Culvert project. This $485,000 grant will assist in removing a ancient culvert blocking natural flow in Boardman Creek. Replacing this culvert with a bridge will create fish passage and improve water quality. 7. The District began the process of updating its surface water ordinance by procuring a consultant team to lead the process. The new ordinance is scheduled for adoption in Fiscal Year 2011/2012. 8. The District participated in two major land use studies in the area assuring that future planning considers water quality requirements.

Structural Measure 5 (Continued) 2010/2011 Assessment of BMP Effectiveness	The District's capital improvement program and projects improves water quality throughout the watershed. The District's installation of water quality facilities in existing developed areas without facilities reduces the current pollutant load into the watershed. The District CIP is promoting riparian restoration on both public and private property. The District is also undertaking detailed water quality studies that will enhance the understanding of the watershed and the effectiveness of the District BMPs. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Operations and Maintenance (O&M) Best Management Practices
SWMP Section 4.1.1

O&M Measure 1	
BMP	Street Sweeping
BMP Description	This BMP involves street sweeping within the District. ODOT and Clackamas County operate and maintain the road system within the District. OLSD coordinates with these jurisdictions to insure that the District receives adequate coverage. This BMP removes sediment, oils, greases, and other pollutants from the roadway.
Schedule for Implementation	On-going
Performance Measure	Frequency of cleaning, miles of road cleaned, and amounts of material removed. Summarize in annual report.
Estimated Pollution Reduction	Street sweeping assists the District in achieving the Maximum Extent Practicable Standard.
2010/2011 Activity Reporting	Clackamas County and ODOT continued street sweeping activities in the District. Clackamas County reports that they swept 561 curb miles of road in OLSD and removed 408 tons of material. ODOT did not provide a report of activities.
2010/2011 Assessment of BMP Effectiveness	Street sweeping provides effective pollution reduction from public streets. Targeting high traffic areas allows for reductions in sediment, oils and greases, toxics, and other pollutants. Continued sweeping of streets is considered effective and revisions to the Stormwater Management Plan are not required.

O&M Measure 2	
BMP	Water Quality Sump Cleaning
BMP Description	This BMP involves periodic inspection of water quality sumps/manholes in the District. OLSD annually inspects each sump/WQ manhole in the District. OLSD cleans the sumps on a 4 year cycle or when the sediment accumulation reaches a specific point.
Schedule for Implementation	On-going
Performance Measure	Frequency of cleaning and amounts of material removed
Estimated Pollution Reduction	Water quality sump maintenance assists the District in achieving the Maximum Extent Practicable Standard.
2010/2011 Activity Reporting	The District inspected 82 sumps, cleaned 6 sumps, and removed 10.9 cu yds of debris. Table 2 contains the sump cleaning data.
2010/2011 Assessment of BMP Effectiveness	Maintenance of sumps and catch basins promotes the effectives of these facilities. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

O&M Measure 3	
BMP	Catch Basin/Area Drain Cleaning and Maintenance
BMP Description	This BMP involves periodic inspection and maintenance of catch basins in the District. OLSD periodically inspects each catch basin in the District. OLSD cleans or repairs the catch basin sumps on a regular basis or when the sediment/leaf accumulation reaches a specific point. This BMP reduces the amount of sediment, organic material, and trash reaching the receiving stream.
Schedule for Implementation	On-going
Performance Measure	Frequency of cleaning and amounts of material removed. Summarize in annual report.
Estimated Pollution	Catch basin and area drain maintenance assists the District in achieving the Maximum Extent

Reduction	Practicable Standard.
2010/2011 Activity Reporting	The District inspected 192 catch basins, cleaned 144 catch basins, and removed 19.7 cu yds of debris. The District initiated an annual catch basin maintenance program.
2010/2011 Assessment of BMP Effectiveness	Sump inspection and cleaning provides effective pollution reduction from public streets and other areas. Sump maintenance allows for reductions in sediment, oils and greases, toxics, and other pollutants. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

O&M Measure 4	
BMP	Detention System Maintenance
BMP Description	This BMP involves maintaining detention facilities on new developments where OLSD has maintenance arrangements with the property owners. These detention systems trap oil and sediments, reduce the site runoff, reduce stream velocities and prevent flooding. OLSD cleans the systems, checks the flow control devices and insures proper operation of the systems.
Schedule for Implementation	On-going
Performance Measure	Number of installations, frequency of cleaning, amounts of material removed. Summarize in annual report.
Estimated Pollution Reduction	This BMP assists the District in achieving the Maximum Extent Practicable Standard.
2010/2011 Activity Reporting	The District did not inspect the two detention systems with service agreements. Maintenance or cleaning was not required.

O&M Measure 4 (Continued)	
2010/2011 Assessment of BMP Effectiveness	Detention maintenance provides effective pollution reduction from developed areas. Detention systems reduce in sediment, oils and greases, toxics, and other pollutants. Detention systems reduce scouring in riparian areas. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

O&M Measure 5	
BMP	Pipe Cleaning and Maintenance
BMP Description	This BMP involves periodic inspection and maintenance of storm pipes in the District. OLSD periodically inspects pipes in the District. OLSD cleans or repairs the pipes when the sediment/leaf accumulation reaches a specific point or to correct specific damage. This BMP reduces the amount of sediment, organic material, and trash reaching the receiving stream.
Schedule for Implementation	On-going
Performance Measure	Number and length of pipes cleaned/repaired. Summarize in annual report.
Estimated Pollution Reduction	Pipe maintenance assists the District in achieving the Maximum Extent Practicable Standard.
2010/2011 Activity Reporting	The District inspected 555 feet and cleaned 1590 feet of storm pipe this year removing approximately 2 yds. of material..
2010/2011 Assessment of BMP Effectiveness	Storm pipe maintenance provides effective pollution reduction from public streets and other areas. These storm systems contribute to reductions in sediment, oils and greases, toxics, and other pollutants. Continued pipe system maintenance is considered effective.

O&M Measure 6	
BMP	Ditch Cleaning and Maintenance
BMP Description	This BMP involves periodic inspection and maintenance of the ditch in the District. OLSD periodically inspects ditches in the District. OLSD cleans or repairs these ditches when the sediment/leaf accumulation reaches a specific point. This BMP reduces the amount of sediment, organic material, and trash reaching the receiving stream.
Schedule for Implementation	On-going
Performance Measure	Number and length of ditches cleaned/repaired. Amount of material removed. Summarize in annual report.
Estimated Pollution Reduction	Ditch cleaning assists the District in achieving the Maximum Extent Practicable Standard.
2010/2011 Activity Reporting	The District did not perform any ditch cleaning activities this year.
2010/2011 Assessment of BMP Effectiveness	Ditch maintenance provides effective pollution reduction from public streets and other areas. These ditch systems contribute to reductions in sediment, oils and greases, toxics, and other pollutants. This BMP is considered effective and revisions to the Stormwater Management Plan are not required. Continued ditch system maintenance is considered effective.

O&M Measure 7	
BMP	Implementation of GIS System and Asset Management Database.
BMP Description	This BMP involves the development of a geographical information system (GIS) that maps storm drainage facilities in the District. An asset database will be developed from this GIS information. This asset database will then be used to improve maintenance records and scheduled activities associated with the Districts stormwater facilities.
Schedule for Implementation	On-going
Performance Measure	Development of GIS data, conversion of GIS information to a computerized management system accuracy of base information, and utilization of asset inventory in on-going SWM maintenance activities.
Estimated Pollution Reduction	Implementation of a GIS/Hansen management system assists the District in achieving the Maximum Extent Practicable Standard.
2010/2011 Activity Reporting	The Oak Lodge Sanitary District utilized its geographic data of the stormwater components for the GIS system. The District purchased a new Computerized Maintenance Management System and began conversion of its surface water assets onto the system. This news system is GIS driven and allows the District to engage in proactive management of its surface water assets.
2010/2011 Assessment of BMP Effectiveness	The District's continued efforts in locating and quantifying the stormwater assets provide increased ability to manage these assets. With an accurate representation of the assets, the District can explore better operations and maintenance strategies to improve the effectiveness of the stormwater system. The District began scheduling stormwater assets on a preventative maintenance program. The District intends increase frequency and methods of stormwater facility operations, improving the effectiveness of these facilities. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Illicit Discharge Best Management Practices
SWMP Section 4.3 and Section 6.0

Illicit Discharge Measure 1	
BMP	Visual Inspection of Outfalls
BMP Description	This BMP involves semi-annual inspection of major outfalls for presence of illicit discharge. OLSD staff inspects the outfall during winter and summer months for presence of illicit discharges.
Schedule for Implementation	On-going
Performance Measure	Reporting of inspection activity on annual report.
Estimated Pollution Reduction	This BMP anticipates preventing, detecting and removing illicit discharges in a timely fashion to minimize the impact on the aquatic environment.
2010/2011 Activity Reporting	The Oak Lodge Sanitary District performed visual outfall inspections on 9/8/10 and 3/1/11.
2010/2011 Assessment of BMP Effectiveness	The District did not detect any illicit discharge through this detection method. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Illicit Discharge Measure 2	
BMP	Water Quality Monitoring
BMP Description	OLSD performs regular water quality monitoring at fixed sites and specific monitoring at areas of concern.
Schedule for Implementation	On-going
Performance Measure	Quarterly sampling of designated sites. Specific sampling as needed in areas of concern. Reporting analytical results in annual report.
Estimated Pollution Reduction	This BMP anticipates preventing, detecting and removing illicit discharges in a timely fashion to minimize the impact on the aquatic environment.
2010/2011 Activity Reporting	The Oak Lodge Sanitary District performed regular monitoring at the River Forest Lake inlet and outlet, on Boardman Creek at Walta Vista, on Kellogg Creek at Park, and at several outfall locations in the District. Appendix B contains the monitoring data.
2010/2011 Assessment of BMP Effectiveness	In continuing the previous efforts, expanding the normal monitoring and engaging in a specific water quality study, the District gathered a large body of data on Water Quality within OLSD boundaries. This information indicates the following. a. A lack of illicit discharges in the District due to absence of detrimental pollutants. b. The effectiveness of the erosion control program due to low levels of sediment and turbidity observed during sampling. c. The temperature of District stormwater discharges is normally below the migratory standard of 20 degrees Celsius. d. The District stormwater discharges generally contain a low level of nutrients that create oxygen demand or promote algae growth. e. The bacterial levels in the watersheds are highly variable with some moderate counts during portions of the year. Sources of bacteria seem mostly from natural sources

Illicit Discharge Measure 2 (continued)	
2010/2011 Assessment of BMP Effectiveness (continued)	and occur during storm flows. Median values remain at water quality levels. f. Sediment testing indicates that toxics are either below detection levels or at concentrations below concern. Detectable toxics relate to legacy compounds and do not relate to current discharges. g. Low levels of BOD and COD indicate insignificant levels of organic pollution in the water shed
Illicit Discharge Measure 3	
BMP	Industrial Inspections and Inventory
BMP Description	OLSD identifies significant industrial users through its pretreatment program. OLSD staff periodically visits and inspects sites for potential pollution problems.
Schedule for Implementation	On-going
Performance Measure	Any pollution concerns will be reported in the annual report.
Estimated Pollution Reduction	This BMP anticipates preventing, detecting and removing illicit discharges in a timely fashion to minimize the impact on the aquatic environment.
2010/2011 Activity Reporting	The Oak Lodge Sanitary District did not experience any business related pollution concerns during 2010/201. The District inspected multiple sites during the reporting period.
2010/2011 Assessment of BMP Effectiveness	The District did not detect any illicit discharge through this detection method. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.

Illicit Discharge Measure 4	
BMP	Pollution Complaint Investigation
BMP Description	OLSD investigates all pollution related complaints. OLSD will visit the site, determine the extent of the problem, sample and perform chemical analysis, perform emergency response, work with the property owner to correct the situation. OLSD will enforce the provisions of the stormwater ordinance and/or refer regulatory action to DEQ.
Schedule for Implementation	On-going
Performance Measure	Report any pollution incidents in the annual report.
Estimated Pollution Reduction	This BMP anticipates preventing, detecting and removing illicit discharges in a timely fashion to minimize the impact on the aquatic environment.
2010/2011 Activity Reporting	The Oak Lodge Sanitary District responded to 6 pollution related incidents in 2010-2011. All incidents were considered minor.
2010/2011 Assessment of BMP Effectiveness	The District has many residents who monitor local water quality and report any concerns. Generally the incidents involve minor water quality impacts and corrective action revolves around education. Continued vigilance by District staff and the general public combined with effective response prevents pollution from entering the watershed or mitigates any pollution incident in an expedient fashion. This BMP is considered effective and revisions to the Stormwater Management Plan are not required.