# Oak Lodge Sanitary District
## Surface Water Management Program

# 2015-2016
# Annual Report

For
National Pollutant Discharge Elimination System (NPDES)
Municipal Separate Storm Sewer System (MS4)
Permit Compliance
Permit #101348

**Prepared by:**
Oak Lodge Sanitary District, Surface Water Management Program

October, 2016

2016 Oak Lodge Sanitary District
March 2012 MS4 Permit
ANNUAL REPORT REQUIREMENTS

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# 1. Background

The Board of Directors of Oak Lodge Sanitary District created a Surface Water Management program with the adoption of Ordinance 1001 in May of 1993. The purpose of the Surface Water Management Program is to:

- prevent pollutants from entering rivers, lakes, and streams;
- maintain and/or improve water quality; and
- restore or enhance properly functioning conditions in the watersheds.

Program development began officially on July 1, 1993, with the collection of Surface Water Management fees based on impervious surface area.

Permit History

The Department of Environmental Quality issued a National Pollutant Discharge Elimination System Waste Discharge (NPDES) Permit No. 100986 dated December 15, 1995 to the District as a joint permit with Clackamas County. This five-year permit required the District to implement a stormwater management program to reduce the contribution of stormwater pollutants to the maximum extent practicable and to discharge stormwater to public waters through a municipal separate storm sewer system in conformance with the conditions in the permit.

That original NPDES permit expired on November 30, 2000 and the State of Oregon Department of Environmental Quality (DEQ) issued a new permit in March 2004 (NPDES-MS4 Permit 101348). Due to public comment, the DEQ reopened the permit in June 2004. After a public comment process, the DEQ issued the final Municipal Stormwater Permit on July 25, 2005. This permit was appealed by third party groups, and the Oregon Court of Appeals upheld the issued permit in 2010; the Oregon Supreme Court did not allow further review.

The District was issued another MS4 Permit on March 15, 2011. Based upon the new permit, the District prepared a revised Surface Water Management Plan and Surface Water Monitoring Plan. The Clackamas County MS4 permit was appealed after issuance by a co-permittee. The current MS4 permit was issued to the co-permittees in March, 2012, and that permit is the basis for this annual report.

# 2. Report Organization

This report is organized based on the requirements of the March, 2012 NPDES permit, Schedule B.5.a through B.5.k. The numbers listed after the report headings indicate the portion of the permit schedule that the section addresses. The report covers the activities of the district from July 1, 2015 to June 30, 2016. Information about implementation of required BMP's is summarized in Table 1. Brief summaries of each topic are described in this document.

# 3. Status of SWMP Program and Associated Elements (B.5.a)

The Oak Lodge Sanitary District (OLSD) implemented the Surface Water Management Plan in 2012 and was based on the two permits because the new/current permit was issued mid-cycle in March 2012. However, for the purpose of the annual report preparation, implementation of the SWMP is being reported based on the requirements in the current permit (permit 101348). This information is summarized in Table 1 of this report.

# 4. Status of Public Education Effectiveness Programs (B.5.b)

OLSD has a series of ongoing methods to communicate information to the community about the various elements associated with surface water. Over time, the District has implemented a variety of methods to communicate with, and educate, the community about surface water issues. These have included outreach and education efforts such as the "Dump Smart – It's Just Not Water" program, the "Pledge Your Pooch" program, and "River Rangers" environmental education program. As mentioned in previous reports, we have learned that some methods are more

effective in changing behavior than others – for example, ratepayers have indicated that they read the information shared in our bimonthly newsletter, but we also know that reading information does not necessarily create behavior change. Please see the BMP's for Public Education listed in Table 1 for full detail on the District's progress toward public education and outreach efforts.

Currently, OLSD is implementing a program called the "Stormdrain Cleaning Assistance Program", targeting commercial and multi-family storm drains in partnership with 4 other regional municipalities. Ratepayers are offered a discounted rate for cleaning out drains on their properties through postcard mailers and a targeted letter to all customers who have a higher level of impervious surface on their properties. Based on research, 18 months is the target timeframe for regular cleanouts, and this program offers a heavily discounted rate for drain cleanings. After the service is performed, OLSD tracks participation through owners sending in proof of cleaning. Out of a targeted population the district will then be able to track participation by property and map which drains are behind in their cleaning.

For the 2016-17 year OLSD added the targeted letter to the postcard mailers in order to raise awareness with owners, and the district will be able to rate a change in effectiveness from the 2015-2016 fall and winter in the next annual report. These efforts will be summarized in Table 1.


## 5. Adaptive Management Process (B.5.c)

Over time, OLSD will continue to evaluate the overall health of local watersheds using the information collected through the monitoring program. That information provides a valuable 'snapshot' of water quality in the district, and provides District program management the opportunity to determine where to focus limited financial resources for program implementation. The District will target water quality issues that are trending toward exceeding state water quality standards; adjustments can be made to focus the messaging to the community about different water quality problems being observed. The anticipated outcome would be a reversal of negatively trending water quality factors because of actions taken by the District. Examples of actions might include stepped up inspection and enforcement in areas with documented water quality issues, targeted public outreach to smaller neighborhood or watershed groups that are the source of the problem, and targeted monitoring activities to try to minimize the area where the source of the water quality problems are coming from.

## 6. Proposed Changes to SWMP (B.5.d)

OLSD amended the SWMP during the 2012-2013 permit year as a result of the special conditions required of OLSD and Clackamas County related to public infrastructure maintenance. The SWMP amendment was approved by DEQ. There are currently no proposed changes to the SWMP anticipated.

OLSD will be revising its SWMP during the upcoming permit renewal process.

## 7. Summary of SWM Program Expenditures (B.5.e)

Oak Lodge Sanitary District is a sanitary district formed and operating under Oregon Revised Statutes. The District's principal act is ORS 450. Oak Lodge Sanitary District began enactment of a surface water management program in July 1993. At that time, the District adopted Ordinance No. 1001, codified as Oak Lodge Sanitary District Rules and Regulations for Surface Water Management. This ordinance and subsequent revisions provides the regulatory framework for developing and implementing a surface water management plan and program with the District's jurisdictional boundary.

Also included in the ordinance are provisions for the assessment and collection of fees and charges associated with operating the program. Monthly service charges are collected from each developed property within the District as incurred charges for the provision, operation, maintenance, repair and replacement of surface water management services. Additional fees are assessed for new and redevelopment plan review, and compliance determination. The revenue generated by these fees and charges is applied to the cost of providing the various services and activities contained in the surface water management program including capital facility construction. All revenue generated by the fees and charges associated with the surface water management program are retained within the program. All expenses generated within the surface water management program are funded through program generated fees and charges. FY2016 fees were $7.25 per month for residential households, and a calculated rate for commercial and industrial users based on their area of impervious surface.

For the 2015-2016 Fiscal Year, OLSD's expenditures for the surface water program totaled $1,077,620. The majority of expenditures ($990,223) were operational expenditures.

## 8. Summary of SWM Program Monitoring (B.5.f)

Surface water sampling occurred four times annually as is required in the NPDES permit. The sites sampled included instream samples from each site, and two outfalls. In reviewing the water quality data, water quality elements for sediment and bacteria are elevated, with periodic exceedances of the state standard for e Coli.
Lab missed the instream dissolved metals on 11/8/15. OLSD will make up the sample during this permit year 16/17.

Other testing elements appear to be within DEQ range, and program monitoring will continue per the procedures outlined in the 2012 Monitoring Plan.

Sample results are provided in Appendix A.

## 9. Proposed Modifications to Monitoring Plan (B.5.g)

OLSD is current on its 2015-2016 Monitoring Plan with no changes during this permit year.

OLSD did seek Modifications to its Storm Water Monitoring Plan. A letter was sent in July of 2016 requesting these modifications for the 2016-2017 permit years. OLSD did not receive a response from DEQ within the 30 day grace period. OLSD has implemented these modifications into its Monitoring Plan.

## 10. SWMP Enforcement (B.5.h)

OLSD routinely inspects the various elements of the Surface Water system within the District. A summary of the inspections, enforcements, and ongoing activities related to illicit discharges can be found in Table 1.

## 11. Development Activities (B.5.i)

Land within the Oak Lodge Sanitary District is largely built-out, with very little raw land available for new development and redevelopment activities are more common. Economic factors currently prohibit large scale redevelopment, although several permits were issued during this permit cycle. Table 1 summarizes the number and type of development activities that OLSD reviewed. At this time, there are no proposals for land annexations, and OLSD does not implement any part of the Urban Growth Boundary.

## 12. District Boundary Expansion (B.5.j)

The Oak Lodge Sanitary District currently has no boundary expansions this reporting year.

## 13. Public Notice of 2014-2015 Annual Report

OLSD solicited public comment on this annual report in the following manner:

- Public Notice and Solicitation of Comments on the OLSD Website: 1 week in October 2016
- October OLSD Board Meeting: Planning and Engineering Staff Report mentions availability of report on website for public review and comment.
- North Clackamas Urban Watersheds Council: OLSD's monthly report mentions availability of report on website for Public Review and Comment.
- The 2015/2016 Annual Report was posted on OLSD Website.

## 14. Appendix A – See Attached BMP Table on the following pages

## 15. Appendix B – See Attached FY2016 Sampling Summary on the following pages.

# Table 1: OLSD 2015-2016 Summary of BMP Implementation

| *Best Management Practice* | *MS4 Permit Schedule A Requirement* | *BMP Description* | *Performance Measure* | *Annual Report 2015-2016* |
|---|---|---|---|---|
| **Illicit Discharge Detection and Elimination**<br><br>**Enforcement Response Plan and Pollution Parameter Action Levels** | **4.a.i – iii** | **BMP Description:** In cases where an illicit discharge has resulted in a discharge that OLSD suspects resulted in a violation of state water quality standards, water quality samples may be collected at the suspected discharge point, as well as upstream and downstream of the discharge point. This is done in an effort to prove the impact on water quality that the illicit discharge has had. The samples will be tested at the laboratory based on field observations of the discharge in an effort to identify any pollutants present in the discharge. Staff will also investigate the source of the discharge by looking in the surface water system upstream of the discharge point; samples may be taken at locations suspected of originating the illicit discharge.<br><br>In cases of an oily discharge, OLSD will notify DEQ through the OERS (Oregon Emergency Response System), which is in place to address oil spills into waterways and ditches. If the DEQ and/or EPA become involved, OLSD will provide a support role to these agencies. When the source of the illicit discharge is identified, OLSD will determine whether this discharge violated the District's Surface Water Management Code, and if so, fines may be levied against the offending party, including all cleanup costs, investigative and sampling costs, and OLSD staff costs, including legal fees.<br><br>OLSD will rely on State of Oregon water quality standards to determine a pollutant level that violates water quality as a trigger to initiate full enforcement action. | (1) Documentation of Enforcement Plan<br>(2) Response Procedures<br>(3) Pollutant Parameter Action Levels | 1. Illicit discharges are managed through the Districts documented Illicit Discharge Program.<br><br>2. OLSD maintains an SOP (Standard Operation Procedure) for staff to perform enforcement actions with illicit discharges.<br><br>3. OLSD has determined pollutant parameter action levels to match Oregon State water quality standards. |
| | **4.a.iv** | **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. | (1) Number of outfalls inspected during dry-weather.<br>(2) Number and type of illicit discharges that were encountered and controlled.<br>(3) Status of updating procedures to address new permit requirements<br><br>Measurable Goals:<br><br>• Inspect major or priority outfalls for the presence of illicit discharges at least once per year.<br>• Update maps of major outfalls on an annual basis.<br>• Update dry weather field screening program to address new permit requirements by November 1, 2012. | 1. All four Dry Weather Outfalls were inspected during the dry season of the 2015/2016 Permit year.<br><br>2. No illicit discharges were noted from the outfall inspections.<br><br>3. No new requirements where established for the 2015/2016 OLSD Storm water Monitoring Plan. |

# Table 1: OLSD 2015-2016 Summary of BMP Implementation

| *Best Management Practice* | *MS4 Permit Schedule A Requirement* | *BMP Description* | *Performance Measure* | *Annual Report 2015-2016* |
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| **Illicit Discharge Detection and Elimination**<br><br>**Implement the Spill Response Program** | **4.a.v** | **BMP Description:** The District's Spill Response Program prevents, contains, and responds to spills of dangerous, hazardous and other materials. 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. | (1) Number of reported spills to the MS4 system.<br>(2) Number and type of response to the reported spills.<br><br>Measurable Goals:<br>• Implement the spill response program and associated protocols. | 1. During the reporting period 2015/2016 the District received and investigated 10 storm water complaints of potential spills.<br><br>2. District found that none of the reported complaints required any response. |
| **Respond to reports involving illicit discharges** | **4.a.V – 4.a.xii** | **BMP Description:** Reports are often received from Oregon's DEQ, Oregon's ODOT, Water Districts, Fire Districts, cities, citizens, district 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, OLSD 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:<br><br>• The removal of certain pollutants from the wastewater prior to discharge to the storm sewer system (i.e. cease usage of soap when washing).<br>• 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.<br>• 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.<br>• Wastewater reuse without any discharge.<br>• Hauling the wastewater off-site for proper disposal.<br>• With the necessary permits, discharge the wastewater to OLSD's sanitary sewer system. | (1) Number of alleged illicit discharges and non-stormwater discharges which were reported each year<br><br>(2) Number of illicit discharges that were controlled.<br><br>Measurable Goals:<br>• Respond to reports involving alleged illicit discharges within two weeks. | OLSD received 10 possible Illicit discharge complaints during the reporting year 2015/2016.<br><br>1 complaint was found to be Illicit discharges.<br>• A dumpster of used oil filters spilled on HWY99. Clean up was completed immediately by Contractor. Spill was reported to OERS by District staff. |
| **Screen Existing and New Industrial Facilities** | **4.b.i – 4.b.iii** | **BMP Description:** Once during the permit term, OLSD will review 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. | **Track the number of existing or new industrial facilities subject to a stormwater industrial NPDES permit during the permit term.**<br><br>Measurable Goals:<br>• Review new industrial development applications once during the permit term to identify additional facilities needing to obtain 1200-Z permits. | The District on has 2 1200Z Industrial users within District boundaries.<br>No new Industrial users were opened in 2015/2016.<br>The District continually reviews all new industrial facilities through its development review process. |

# Table 1: OLSD 2015-2016 Summary of BMP Implementation

| *Best Management Practice* | *MS4 Permit Schedule A Requirement* | *BMP Description* | *Performance Measure* | *Annual Report 2015-2016* |
|---|---|---|---|---|
| **Address Other Industrial Facilities** | **4.b.i - iii** | **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.<br><br>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.<br><br>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.<br><br>Industrial users permitted under the pretreatment program 40CFR403 have an annual facility inspection which includes a review of storm water facilities. | 1. The number of inspections performed, and where applicable, monitoring data collected.<br>2. The number of letters, enforcement actions, or other contacts made.<br>3. Number of pretreatment inspections performed<br><br>Measurable Goals:<br>• Notify and work with industries to improve stormwater management if an inspection is conducted that indicates improvement is needed. | There are no commercial or industrial sites that were anticipated to contribute a substantial load of pollutants to the MS4.<br><br>There is no storm event monitoring work or routine monitoring work showing excessive levels of pollutants present.<br><br>There are no industrial users that are permitted under OLSD's pretreatment program.<br><br>There was no monitoring performed on stormwater discharged by OLSD's commercial or industrial accounts.<br><br>There were no letters or enforcement actions made regarding stormwater discharged from OLSD commercial or industrial accounts.<br><br>There were four pretreatment inspections performed – Cascade Record Pressing, Architectural Specialties, Jazzman Customs, and Premier Tool & Die – there were no instances of surface water contamination found during these inspections. |
| **Construction Site Runoff Control**<br><br>**Erosion Control Ordinances** | **4.c.i – 4.c.vi** | **BMP Description:**<br><br>*OLSD Surface Water Management Code*<br><br>The District updated the Surface Water Management Code in 2011-2012 to match updated requirements through the MS4 permit. The code addresses regulatory and review requirements related to erosion control, tree removal, undisturbed buffers, and flow control and treatment requirements. 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. OLSD has an agreement with CCSD#1 for administration of the 1200-C permitting program for the areas inside OLSD. | (1) Implement Code<br><br>Measurable Goals:<br>• Update SWMC and implement new code | Completed; Code update adopted in July 2012.<br><br>The District updated it's SWMC in 2015 and OLSD is enforcing the current 2015 SWMC |

# Table 1: OLSD 2015-2016 Summary of BMP Implementation

| *Best Management Practice* | *MS4 Permit Schedule A Requirement* | *BMP Description* | *Performance Measure* | *Annual Report 2015-2016* |
|---|---|---|---|---|
| **Public Education and Outreach**<br><br>**Topic: Reduce Discharges of Pesticides, Herbicides and Fertilizers** | 4.d.iii | BMP Description: OLSD 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:<br>• Articles in newsletters<br>• District's ' website.<br>• Through local public involvement campaigns. A recent example of a relevant public involvement campaign is one that has been launched annually over the past several years throughout the Portland Metro area by many municipal partners, including the Districts. This group is called the Regional Coalition for Clean Rivers and Streams.<br>• Brochures<br>Common topics that are addressed by this program include:<br>• 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.<br>• 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.<br>• Users are reminded that pesticide and herbicide products need to be used in a manner consistent with the product's label. | (1) Track programs messages delivered, type of communication piece, and where appropriate, the number of people affected<br><br>Measurable Goals:<br>• Continue to maintain relevant public education materials on the district's website.<br>• Prepare a minimum of one relevant article per year for inclusion with customer billing statements. | The following outreach efforts occurred last year:<br><br>Two Newsletters with surface water education topics in each and Annual Report with District facts and<br>School Outreach: Administered WHEP with our high school partner, Rex Putnam. Conducted seven group plant tours for 3rd- 12th grade students. Macroinvertebrates workshop for high school students. Native planting and watershed observations for 6-12th grade students. Rex Putnam Green Team annual report and Board presentation. Planting at Rinearson Creek site with WHEP students. Partnered with Schoolyard Farms to teach about runoff risks within gardens. Partnered with Ecology in Classrooms and Outdoors to conduct water quality lessons, restoration, and plantings at Riverside Elementary School.<br>Events: OLSD sponsored or participated four events (SOLV*E* Green Team Student Summit, CWET Watershed Teacher Workshop, CWET Celebrating Water Forum, and Children's Clean Water Festival)<br>Brochure: "*Dump Smart:"* Proper Disposal for Paint, Power Washing, and Carpet Cleaning; Plant workflow diagram for students,<br>Participation in the Regional Coalition for Clean Rivers and Streams, Clackamas County Water Education Team, Watershed Health Education Program,<br>Participation in Boardman Rinearson Wetlands cleanups and plantings with SOLV*E*.<br>Website: Streamlined access to information for property owners, tenants, and educators on water quality, water-related maintenance, conservation and other general issues. |

# Table 1: OLSD 2015-2016 Summary of BMP Implementation

| *Best Management Practice* | *MS4 Permit Schedule A Requirement* | *BMP Description* | *Performance Measure* | *Annual Report 2015-2016* |
|---|---|---|---|---|
| **Education and Outreach**<br><br>**Privately Owned SWM Facility Education** | 4.d.iv | **BMP Description:** Privately owned SWM facilities require periodic inspection and maintenance to keep them working correctly. This effort focuses on outreach and education to those private landowners who own these types of facilities | (1) Number and Type of Education and Outreach efforts specific to privately owned facility inspection and maintenance. | Participation in SCAP (Stormdrain Cleaning Assistance Program) with mailers sent to 200+ property owners who has/may have private storm drains on their property. Participation increased from first year of SCAP. |
| **Education and Outreach**<br><br>**Erosion Control Contractor Training Opportunities** | 4.d.v | **BMP Description:** Provide notice to construction site operators concerning where education and training to meet erosion prevention and sediment control requirements can be obtained. | (2) Describe efforts to provide this notice | OLSD Plan Review Staff refers contractors to the WES Erosion Control manual and to WES for information on and certification opportunities as well as regional training and certification resources.<br>OLSD Provides education at the counter during permit review at both the intake and approval stage. OLSD staff is certified by the states of Oregon and Washington for erosion and sediment control. |
| **Education and Outreach**<br><br>**Effectiveness Evaluation** | 4.d.vi | **BMP Description:** Over the permit term, OLSD 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 OLSD education and outreach strategy. | (3) Report on activities annually.<br><br>Measurable Goals:<br>• Provide/compile information regarding a public education effectiveness evaluation over the permit term. | During the 2013-2014 permit year, OLSD participated in a regional study about the effectiveness of various stormwater-related public outreach efforts within Oregon. The report was commissioned through Oregon Association of Clean Water Agencies. See Appendix B for a copy of the study.<br>In addition, staff evaluated the participation levels in the SCAP and sought ways to further participation in the program. |
| **Education and Outreach**<br><br>**Employee Training** | 4.d.vii | **BMP Description:** A variety of training is provided to staff associated with surface water 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. | Track the number of employees receiving training in stormwater management annually**.**<br><br>Measurable Goals:<br>• Attend relevant stormwater management related training based on need and availability. | An OLSD internal Stormwater Summit took place, which involved key staff from Oak Lodge Sanitary District as well as consolidation partner, Oak Lodge Water District. The summit was an in-depth informational presentation covering all aspects of OLSD's stormwater program.<br><br>Specific Trainings:<br>Key staff attended the ACWA Stormwater Summit in spring 2016. |

# Table 1: OLSD 2015-2016 Summary of BMP Implementation

| *Best Management Practice* | *MS4 Permit Schedule A Requirement* | *BMP Description* | *Performance Measure* | *Annual Report 2015-2016* |
|---|---|---|---|---|
| **Public Education and Outreach**<br><br>**Topic: Facilitate Public Reporting of Illicit Discharges** | 4.d.viii | **BMP Description:** The District implements a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges and other types of improper disposal of materials into the MS4. After District staff has received a report which relates to one of these discharges, they investigate and, if appropriate, apply control measures. See BMP #3. | (1) Number illicit discharges reported.<br>(2) Number of illicit discharges requiring action.<br>(3) Number of educational events educating public about illicit discharges and procedures to report.<br>(4) Number of publications educating public about illicit discharges and procedures to report.<br><br>Measurable Goals:<br>• Create a page for public complaints on the District's website and track number of complaints for reporting. | Potential illicit discharges reported:10<br>Actions taken: 10<br><br>Educational Events: 3<br><br>Educational Publications: 4 |
| **Public Involvement and Participation** | 4.e | **BMP Description:** Schedule A.4.e of the District's MS4 NPDES permit requires OLSD to provide opportunity for public participation in the development, implementation, and modification of the Stormwater Management Plan (SWMP). Prior to submittal of various milestone reports, OLSD will provide the public with an opportunity to comment for a period of 2 weeks prior to submittal dates. Comments on the documents will be collected and considered.<br><br>Additionally, OLSD has many opportunities for members of the community to participate in various sub committees that provide oversight and guidance to OLSD management related to MS4 implementation. | Measurable Goals:<br>• Provide for public participation with the SWMP and pollutant load reduction benchmarks prior to the permit renewal application deadline.<br>• Provide for public participation with the monitoring plan due to the Department by September 1, 2012 | SWM Annual Report and Permit<br>• Notice to Board October 11, 2016<br>• Website: October 18-25, 2016<br>• Notice to North Clackamas Urban Watershed Council October 19, 2016<br><br>Boardman Watershed Community Committee: 1 community meeting occurred, with community participating in development of a capital project design to support Boardman Watershed Initiative.<br><br>Website contains a variety MS4 related material, ongoing opportunity for public to comment. |
| **Construction Site Runoff Control** | **4.f.i - 4.f.iv** | **BMP Description:**<br>*OLSD Development Review*<br>The District reviews all development plans for new construction or redevelopment projects in the District's service area through the building permit process. All reviews are conducted in accordance with the Oak Lodge Sanitary District Code Division 3 — Surface Water. These regulations require submittal of a surface water management plan and enforcing code that addresses post-construction pollutant and runoff control measures. | (2) Annual number of permitted, active construction projects (i.e., those projects disturbing 800 s.f. or more).<br>(3) Annual number of site plan reviews and approved plans.<br><br>Measurable Goals:<br>• Review all applicable erosion and sediment control plans submitted as part of the building permit | Number of development permits issued: 24<br><br>Acreage of development activity: 24.35 Acres<br><br>Number of erosion control permits issued: 43<br><br>Number of erosion control inspections completed: 240<br><br>Number of enforcements (violations that needed enforcement action): 3<br><br>Identify any new industrial businesses in OLSD: 2<br><br>Variance Requests: 1<br><br>The OLSD maintains a surfacewater management plan and |

# Table 1: OLSD 2015-2016 Summary of BMP Implementation

| *Best Management Practice* | *MS4 Permit Schedule A Requirement* | *BMP Description* | *Performance Measure* | *Annual Report 2015-2016* |
|---|---|---|---|---|
| | | | | enforcing code which requires at least a minimum of the standards contained in the MS4 permit. The Code was updated during this reporting year. No new regulations or standards were introduced or significantly changed. The code changes were generally administrative. Though, the changes make the code easier to administer and enforce.<br><br>Appeals: 0<br><br>Estimate of total new and replaced impervious surface area related to development projects: 12 acre |
| **Pollution Prevention for Municipal Operations**<br><br>**Street Sweeping** | **4.g** | **BMP Description:** Major arterial curbed streets within the DTD service area (which includes OLSD) 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. | (1) Number of miles that were swept OLSD<br>(2) Mass or volume of material removed during sweeping<br><br>For DTD roads, see tracking measures in the DTD MS4 NPDES SWMP. | Clackamas DTD Street Sweeping within OLSD Boundary:<br><br>(1) 561 Curb/ Shoulder Miles<br>(2) 362 Cubic Yards debris removed<br><br>(3) The district has entered into an agreement with the City of Milwaukie to have its WRF impervious surface's swept once a month. This BMP is a result of the Districts 1200Z Permit. |
| **Operations & Maintenance for Public Streets** | **4.g** | **BMP Description:** Operations and maintenance of public streets within the DTD service area (which includes OLSD) is the responsibility of DTD. For information on their activities, refer to the DTD MS4 NPDES SWMP. | Measurable Goals:<br>• DTD Roads: See DTD's MS4 NPDES SWMP.<br>• Remove illegal solid waste dumps as they are discovered.<br>• Collect sand applied for ice/snow events within 10 days of the end of the event. | See Clackamas County/DTD's MS4 Annual Report |

# Table 1: OLSD 2015-2016 Summary of BMP Implementation

| *Best Management Practice* | *MS4 Permit Schedule A Requirement* | *BMP Description* | *Performance Measure* | *Annual Report 2015-2016* |
|---|---|---|---|---|
| **Control Infiltration and Cross Connections to the District's Stormwater System** | **4.g** | **BMP Description:** The District prevents exfiltration of flows from municipal sanitary 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.<br><br>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 OLSD'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:<br><br>• Performing dry-weather inspections at all major or priority outfalls on an annual basis to detect non-stormwater flows, and<br>• Receiving and promptly responding to reports from citizens of unusual colors, odors and solids. | (1) Number of cross-connections/ sanitary discharges identified.<br><br>Measurable Goals:<br><br>Eliminate any identified sanitary discharges to the storm system. | During this permit year 2015/2016 OLSD identified 1 cross connections through routine inspections.<br>• The cross connection found during erosion control inspection. Homeowner corrected cross connection which was confirmed by District staff. |
| **Flood Management Projects and Water Quality** | **4.g** | **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.<br><br><u>CIPs:</u> The District develops a 5-year Capital Improvement Plan to identify major projects necessary to address water quality concerns. One of the main goals and outcomes of the CIP is 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 CIP is to build projects to protect, restore, and enhance the health and function of a watershed. | (1) Number of retrofits constructed that address water quality treatment.<br>(2) Number of flood management projects implemented or constructed and the percentage of those projects that include water quality Components.<br><br>Measurable Goals:<br>Ensure all planned stormwater CIPs include consideration of water quality. | (1) There were no retrofits during this permit year due to preparation of next years (summer 2017) large capital project. However, properties were purchased from private landowners in order to accomplish the end goal of a large wetland rehabilitation.<br>(2) OLSD is currently in design of the first phase of the Boardman Wetland Complex. This project is expected to begin construction June of 2017 and be completed later that fall. There is a specific emphasis on water quality along with stream habitat and flood control contained within the project. |
| **Maintenance of Conveyance System Components and Structural Controls** | **4.g** | **BMP Description:** The District maintains conveyance and treatment components of the storm water system that are located outside the right-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.<br><br>The District and DTD are working on the development of an intergovernmental agreement to clarify and coordinate maintenance activities. | (1) Miles of ditches and storm lines maintained<br>(2) Number and type of components inspected and/or cleaned, and<br>(3) Mass or volume of material removed during cleaning | (1) <u>Ditch Cleaning: 196 ft – By Clackamas DTD</u><br>(2) <u>Storm Pipe Cleaned: 188' by OLSD</u><br>(3) <u>Mass Removed: tons of material (storm line cleaning)</u><br>(4) <u>6 culverts @ 265ft Clackamas DTD)</u><br>(5) <u>Mass Removed: 9.34 cubic yards of material (Ditch Cleaning By Clackamas DTD)</u> |

# Table 1: OLSD 2015-2016 Summary of BMP Implementation

| *Best Management Practice* | *MS4 Permit Schedule A Requirement* | *BMP Description* | *Performance Measure* | *Annual Report 2015-2016* |
|---|---|---|---|---|
| **Catchbasin Cleaning and Maintenance** | **4.g** | **BMP Description:** OLSD cleans all District owned or District operated/maintained catch basins once every five years. 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. | (1) Track the number of District owned or District operated/maintained catch basins cleaned per year.<br>(2) Track the mass or volume of debris removed during cleaning activities.<br><br>Measurable Goals:<br>• Clean OLSD District operated/maintained public catch basins on a 5-year rotational basis.<br>Schedule repair or replacement of catch basins based on inspection results. | During this reporting period, OLSD and Clackamas Co. continued a coordinated approach to storm system inspection and maintenance (see updated SWMP Zone Map).<br><br>(1) Catch basin Inspections: 417<br>(2) Catch basins Cleaned:<br>OLSD: 128<br>CCDTD: 20<br>Sedimentation Manholes Cleaned:<br>OLSD: 2<br>(3) Mass of Debris Removed: 23 Cubic Yards by OLSD + 2.79 Cubic Yards by CCDTD |
| **Private Surface Water Facility Maintenance Program** | **4.g** | **BMP Description:** This BMP includes maintenance agreements for stormwater quality and detention structures in residential areas. There are very few of these facilities in OLSD.<br>This infrastructure varies from subdivision to subdivision, but may include any 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. | (1) Number of structures inspected and cleaned. | 4 Private Facility inspections were completed in the 2015/2016 permit year.<br><br>The Facilities that meet the criteria for cleaning will be cleaned. |
| **Hydromodification Assessment** | 5.a – 5.d | **BMP Description:** OLSD anticipates partnering with adjacent co-permittees (CCSD#1, Clackamas County DTD) to 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. | (1) Net impervious area treated by LID.<br>(2) Number of applications submitted using tool.<br>(3) Customer Feedback/ Community Relations.<br><br>Measurable Goals:<br><br>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. | See Hydromodification Assessment submitted to DEQ on June 29, 2015. |

## Table 1: OLSD 2015-2016 Summary of BMP Implementation

| *Best Management Practice* | *MS4 Permit Schedule A Requirement* | *BMP Description* | *Performance Measure* | *Annual Report 2015-2016* |
|---|---|---|---|---|
| **Stormwater Retrofit Strategy** | 6.a – 6.c | **BMP Description:** Develop a stormwater quality retrofit strategy that applies to developed areas identified as impacting water quality. | (5) Submit plan to DEQ by July 1, 2015. | See Stormwater Retrofit Strategy and Plan submitted to DEQ on June 29, 2015.<br><br>Implemented in stormwater code |

# OLSD Water Quality Sampling Data Results: Storm Sampling and Quarterly Stream Sampling
## July 1, 2015 - June 30, 2016

SW 8 – SE Naef Rd / SE Blanton St – South Boardman Creek, 60' north of intersection

MS4 Sample Type: WET WEATHER, 3 events per year

| DATE | TSS (mg/L) | BOD (mg/L) | Fecal coliform (MPN) | pH | Temp (celsius) | E. Coli (col/100) | CL2 (mg/L) | TDS (MGL) | COD (mg/L) | O&G (mg/L) | Tot Phosphate (mg/L) | TKN (mg/L) | FLOATING SOLIDS | O&G SHEEN | Luminescent DO (mg/L) | Conductivity (µS/cm) | Nitrate (mg/L) | Hardness (mg/L) | Calcium (µg/L) | Magnesium (µg/L) | Total Copper (µg/L) | Total Lead (µg/L) | Total Zinc (µg/L) | Dissolved Copper (µg/L) | Dissolved Lead (µg/L) | Dissolved Zinc (µg/L) | Ortho-Phosphorous (mg/L) | Ammonia Nitrogen (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/28/2015 | 12 | 4.08 | N/A | 7.48 | 13.8 | 1730 | N/A | 46 | ND | | ND | NO | NO | NO | 9.92 | 46.8 | 0.403 | 18.3 | 5.17 | 1.3 | 0.0094 | 0.00128 | 0.0529 | 0.00434 | 0.000344 | 0.0333 | 0.158 | 0.107 |
| 2/4/2016 | 18 | ND | N/A | 7.5 | 8.5 | >2420 | N/A | 74 | ND | 0.152 | 0.152 | NO | NO | NO | 11.36 | 73.6 | 0.999 | 31.5 | 8.47 | 2.51 | 0.00402 | 0.00193 | 0.0532 | ND | ND | 0.0237 | 0.079 | 0.025 |
| 5/15/2016 | 7 | ND | N/A | 7.23 | 15 | 2420 | N/A | 56 | ND | 0.122 | 0.122 | NO | NO | NO | 9.69 | 44.1 | 0.647 | 20.9 | 5.85 | 1.52 | 0.00734 | 0.00113 | 0.0863 | 0.00453 | 0.0002 | 0.0496 | 0.075 | 0.051 |

SW 5 – 15100 SE Woodland Way – River Forest Creek – 48" CMP outfall on west side of road

MS4 Samlpe Type: WET WEATHER, 3 events per year

| DATE | TSS (mg/L) | BOD (mg/L) | Fecal coliform (MPN) | pH | Temp (celsius) | E. Coli (col/100) | CL2 (mg/L) | TDS (MGL) | COD (mg/L) | O&G (mg/L) | Tot Phosphate (mg/L) | TKN (mg/L) | FLOATING SOLIDS | O&G SHEEN | Luminescent DO (mg/L) | Conductivity (µS/cm) | Nitrate (mg/L) | Hardness (mg/L) | Calcium (µg/L) | Magnesium (µg/L) | Total Copper (µg/L) | Total Lead (µg/L) | Total Zinc (µg/L) | Dissolved Copper (µg/L) | Dissolved Lead (µg/L) | Dissolved Zinc (µg/L) | Ortho-Phosphorous (mg/L) | Ammonia Nitrogen (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/28/2015 | 5 | 5.24 | N/A | 6.85 | 13.2 | 1300 | N/A | 37 | ND | 0.116 | 0.116 | NO | NO | NO | 9.92 | 26.5 | 0.253 | 10.1 | 2.93 | 0.666 | 0.00764 | 0.00119 | 0.0571 | 0.00529 | 0.000356 | 0.0435 | 0.091 | 0.107 |
| 2/4/2016 | 19 | ND | N/A | 7.8 | 8.2 | 914 | N/A | 44 | ND | ND | ND | NO | NO | NO | 11.24 | 31.8 | 0.953 | 19.8 | 5.64 | 1.4 | 0.00501 | 0.003 | 0.0567 | 0.00357 | ND | 0.0573 | 0.031 | 0.029 |
| 5/15/2016 | 5 | ND | N/A | 7.41 | 14.5 | 1730 | N/A | 24 | ND | ND | ND | NO | NO | NO | 9.95 | 25.7 | 0.351 | 8.22 | 2.47 | 0.495 | 0.00687 | 0.00168 | 0.0627 | 0.00507 | 0.000456 | 0.058 | 0.028 | 0.151 |

SW 2 – SE Courtney Ave / SE Rupert Dr – MH on SW corner

MS4 Sample Type: WET WEATHER, 3 events per year

| DATE | TSS (mg/L) | BOD (mg/L) | Fecal coliform (MPN) | pH | Temp (celsius) | E. Coli (col/100) | CL2 (mg/L) | TDS (MGL) | COD (mg/L) | O&G (mg/L) | Tot Phosphate (mg/L) | TKN (mg/L) | FLOATING SOLIDS | O&G SHEEN | Luminescent DO (mg/L) | Conductivity (µS/cm) | Nitrate (mg/L) | Hardness (mg/L) | Calcium (µg/L) | Magnesium (µg/L) | Total Copper (µg/L) | Total Lead (µg/L) | Total Zinc (µg/L) | Dissolved Copper (µg/L) | Dissolved Lead (µg/L) | Dissolved Zinc (µg/L) | Ortho-Phosphorous (mg/L) | Ammonia Nitrogen (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/28/2015 | 7 | 5.78 | N/A | 8.15 | 13.3 | >2420 | N/A | 53 | ND | 0.148 | 0.148 | NO | NO | NO | 9.39 | 32.6 | 0.684 | 17.9 | 5.07 | 1.28 | 0.00809 | 0.00218 | 0.0747 | 0.00432 | 0.000533 | 0.0432 | 0.108 | 0.074 |
| 2/4/2016 | 28 | ND | N/A | 7.3 | 8.9 | 2420 | N/A | 52 | ND | 0.132 | 0.132 | NO | NO | NO | 10.7 | 33.9 | 0.862 | 25.6 | 7.18 | 1.86 | 0.00474 | 0.00326 | 0.062 | ND | ND | 0.0524 | 0.029 | 0.029 |
| 5/15/2016 | 7 | 3.7 | N/A | 7.47 | 14.8 | >2420 | N/A | 42 | ND | 0.146 | 0.146 | NO | NO | NO | 9.14 | 40.1 | 0.458 | 12.6 | 3.69 | 0.831 | 0.00559 | 0.0012 | 0.0642 | 0.00417 | 0.000211 | 0.039 | 0.077 | 0.126 |

SW 15 – 15000 SE Fairoaks Ave – River Forest Creek – River Forest Lake influent

MS4 SAMPLE TYPE: Instream Sample, 4 times per year

| DATE | TSS (mg/L) | BOD (mg/L) | Fecal coliform (MPN) | pH | Temp (celsius) | E. Coli (col/100) | CL2 (mg/L) | TDS (MGL) | COD (mg/L) | O&G (mg/L) | Tot Phosphate (mg/L) | TKN (mg/L) | FLOATING SOLIDS | O&G SHEEN | Luminescent DO (mg/L) | Conductivity (µS/cm) | Nitrate (mg/L) | Hardness (mg/L) | Calcium (µg/L) | Magnesium (µg/L) | Total Copper (µg/L) | Total Lead (µg/L) | Total Zinc (µg/L) | Dissolved Copper (µg/L) | Dissolved Lead (µg/L) | Dissolved Zinc (µg/L) | Ortho-Phosphorous (mg/L) | Ammonia Nitrogen (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/9/2015 | 16 | ND | N/D | 7.2 | 25.3 | 727 | N/A | 147 | ND | 0.124 | ND | NO | NO | NO | 7.07 | 185.4 | 0.532 | 74 | 18.8 | 6.54 | 0.0014 | 0.000211 | 0.0226 | 0.00121 | ND | 0.0221 | 0.094 | 0.032 |
| 11/8/2015 | ND | ND | N/D | 7.27 | 20.1 | 1120 | N/A | 120 | ND | ND | ND | NO | NO | NO | 9.98 | 159.6 | 3.53 | 60.4 | 15.7 | 5.17 | 0.0028 | 0.000533 | 0.0278 | Lab Error | Lab Error | Lab Error | 0.059 | ND |
| 2/2/2016 | ND | ND | N/D | 7.47 | 17.5 | 48.7 | N/A | 122 | ND | ND | ND | NO | NO | NO | 11.25 | 162.9 | 1.83 | 63.4 | 16.4 | 5.45 | ND | 0.000711 | 0.0232 | ND | ND | 0.0194 | 0.03 | ND |
| 4/28/2016 | ND | ND | N/D | 6.67 | 11.6 | 980 | N/A | 151 | ND | ND | ND | NO | NO | NO | 9.49 | 177.9 | 0.99 | 68.5 | 17.3 | 6.16 | 0.00118 | 0.0002 | 0.0107 | ND <2.00 | ND | 0.00837 | 0.048 | ND |

SW 12 – 3131 SE Walta Vista Ct – Lower Boardman Creek – 48" CMP outfall

MS4 SAMPLE TYPE: Instream Sample, 4 times per year

| DATE | TSS (mg/L) | BOD (mg/L) | Fecal coliform (MPN) | pH | Temp (celsius) | E. Coli (col/100) | CL2 (mg/L) | TDS (MGL) | COD (mg/L) | O&G (mg/L) | Tot Phosphate (mg/L) | TKN (mg/L) | FLOATING SOLIDS | O&G SHEEN | Luminescent DO (mg/L) | Conductivity (µS/cm) | Nitrate (mg/L) | Hardness (mg/L) | Calcium (µg/L) | Magnesium (µg/L) | Total Copper (µg/L) | Total Lead (µg/L) | Total Zinc (µg/L) | Dissolved Copper (µg/L) | Dissolved Lead (µg/L) | Dissolved Zinc (µg/L) | Ortho-Phosphorous (mg/L) | Ammonia Nitrogen (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/9/2015 | 5 | 1.76 | N/A | 7.56 | 24.8 | 150 | N/A | 180 | ND | 0.1 | ND | NO | NO | NO | 7.39 | 264 | ND | 88.5 | 21.9 | 8.23 | 0.00153 | 0.000333 | 0.0211 | 0.00109 | ND | 0.0159 | 0.049 | 0.036 |
| 11/8/2015 | 9 | ND | N/A | 6.94 | 20.3 | 1200 | N/A | 97 | ND | 0.124 | ND | NO | NO | NO | 8.51 | 135.8 | 1.75 | 52.3 | 13.4 | 4.56 | 0.00379 | 0.0011 | 0.0307 | Lab Error | Lab Error | Lab Error | 0.056 | 0.037 |
| 2/2/2016 | 5 | ND | N/A | 7.3 | 16.5 | 272 | N/A | 134 | ND | ND | ND | NO | NO | NO | 9.68 | 168.1 | 1.31 | 66.1 | 16.9 | 5.77 | 0.0053 | 0.000544 | 0.0282 | ND | ND | 0.0214 | 0.026 | 0.031 |
| 4/28/2016 | ND | ND | N/A | 6.84 | 12.4 | 173 | N/A | 159 | ND | 0.146 | ND | NO | NO | NO | 7.86 | 193.5 | 0.705 | 74.2 | 18.5 | 6.76 | 0.00139 | 0.0003 | 0.0138 | ND | ND | 0.00959 | 0.078 | 0.074 |

SW 3 – Courtney Springs Creek on east side of SE McLoughlin Blvd, 350' north of SE Park Ave – outfall of 5' x 5' concrete box culvert

MS4 SAMPLE TYPE: Instream Sample, 4 times per year

| DATE | TSS (mg/L) | BOD (mg/L) | Fecal coliform (MPN) | pH | Temp (celsius) | E. Coli (col/100) | CL2 (mg/L) | TDS (MGL) | COD (mg/L) | O&G (mg/L) | Tot Phosphate (mg/L) | TKN (mg/L) | FLOATING SOLIDS | O&G SHEEN | Luminescent DO (mg/L) | Conductivity (µS/cm) | Nitrate (mg/L) | Hardness (mg/L) | Calcium (µg/L) | Magnesium (µg/L) | Total Copper (µg/L) | Total Lead (µg/L) | Total Zinc (µg/L) | Dissolved Copper (µg/L) | Dissolved Lead (µg/L) | Dissolved Zinc (µg/L) | Ortho-Phosphorous (mg/L) | Ammonia Nitrogen (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/9/2015 | ND <5.00 | ND <1.62 | N/A | 7.31 | 15.5 | 222 | N/A | 179 | N/A | ND | ND | N/A | NO | NO | 9.43 | 268 | 1.05 | 110 | 28.6 | 9.45 | 0.00228 | 0.000467 | 0.0109 | 0.00207 | ND | 0.00753 | 0.047 | 0.025 |
| 11/8/2015 | 7 | ND | N/A | 7.27 | 20 | 1550 | N/A | 144 | N/A | ND | ND | N/A | NO | NO | 9.86 | 189.9 | 3.49 | 77.7 | 13.4 | 6.58 | 0.00359 | 0.00206 | 0.0244 | Lab Error | Lab Error | Lab Error | 0.038 | 0.023 |
| 2/2/2016 | ND <5.00 | ND | N/A | 7.53 | 15.9 | 8.6 | N/A | 133 | N/A | ND | ND | N/A | NO | NO | 10.55 | 168.1 | 1.95 | 64 | 17.2 | | ND | 0.000378 | 0.0168 | 0.00133 | ND | 0.02 | 0.022 | 0.021 |
| 4/28/2016 | ND <5.00 | ND | N/A | 7.33 | 12.1 | 313 | N/A | 157 | N/A | ND | ND | N/A | NO | NO | 9.82 | 182.5 | 1.34 | 69.9 | 18.3 | 5.9 | 0.00188 | 0.000844 | 0.0153 | ND | ND | 0.0126 | 0.043 | 0.063 |

ND = non detect
NO = None Observed