

Transportation Division

November 1, 2016

Mark Riedel
Oregon Department of Environmental Quality
811 SW 6th Ave
Portland, OR 97204

SUBJECT: NPDES MS4 Permit Annual Report 2016

Dear Mr. Riedel:

I am pleased to submit the enclosed National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System (NPDES MS4) Phase I Permit – Annual Report 2016. This report fulfills reporting requirements for the NPDES MS4 Phase I Permit #103004.

The report demonstrates the County's progress toward meeting the permit requirements and stormwater program goals for the past year. The report details the activities implemented, and program status.

Electronic downloads can be found at multco.us/water-quality-program/reports-and-plans. If you have any questions concerning this report, please contact Roy Iwai, Water Resources Specialist at (503) 988-0195, or by email at roy.iwai@multco.us.

Sincerely,



Ian B. Cannon, P.E.
Transportation Director



**Multnomah County NPDES MS4 Phase I Permit
Stormwater Management Program**

**Annual Report 2016
Permit year 21**

Submitted to:

*Oregon Department of Environmental Quality
November 2016*

*Submitted in Accordance with the Requirements
of the National Pollutant Discharge Elimination System
(NPDES) Permit Number 103004, File Number 120542*

Submitted by:

*Water Quality Program
Department of Community Services
Multnomah County*

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1. Introduction

Multnomah County implements a comprehensive stormwater management program with the goal of reducing pollutants into the municipal stormwater system to the maximum extent practicable. This program is maintained and prioritized in response to the federal Clean Water Act and the County's responsibility to protect the health and welfare of its citizens and natural environment. The Stormwater Management Plan is the main component of the stormwater management program. This plan is submitted to and approved by the Oregon Department of Environmental Quality (DEQ) under the National Pollutant Discharge and Elimination System Municipal Separate Storm Sewer Phase I (NPDES MS4 Phase I) permit. The County's roles and responsibilities for complying with the permit term falls under seven categories of Best Management Practices (BMPs) with a focus on operating and maintaining the County bridges and roads.

This Annual Report summarizes the implementation activities of Multnomah County's Stormwater Management Plan in the County's permit area for the Permit Year 21 (Fiscal year 2016: July 1, 2015 – June 30, 2016).

2. Program Overview

History

From 1995 to 2010, the Oregon Department of Environmental Quality (DEQ) regulated stormwater from Multnomah County through two separate NPDES MS4 Phase I Discharge permits: Permit #101314 for the areas within the City of Portland permit boundary and Permit #108013 for the areas within the Gresham permit boundary. Multnomah County was a co-permittee on both Portland and Gresham's MS4 Permit.

The County had a limited amount of regulatory area under each permit under the two separate MS4 permits. To reduce the administrative burdens for program management and reporting, Multnomah County requested to DEQ that the permit areas be combined under a single individual permit for the 2010 permit renewal. DEQ granted this request and issued the new individual Phase I permit on December 30, 2010.

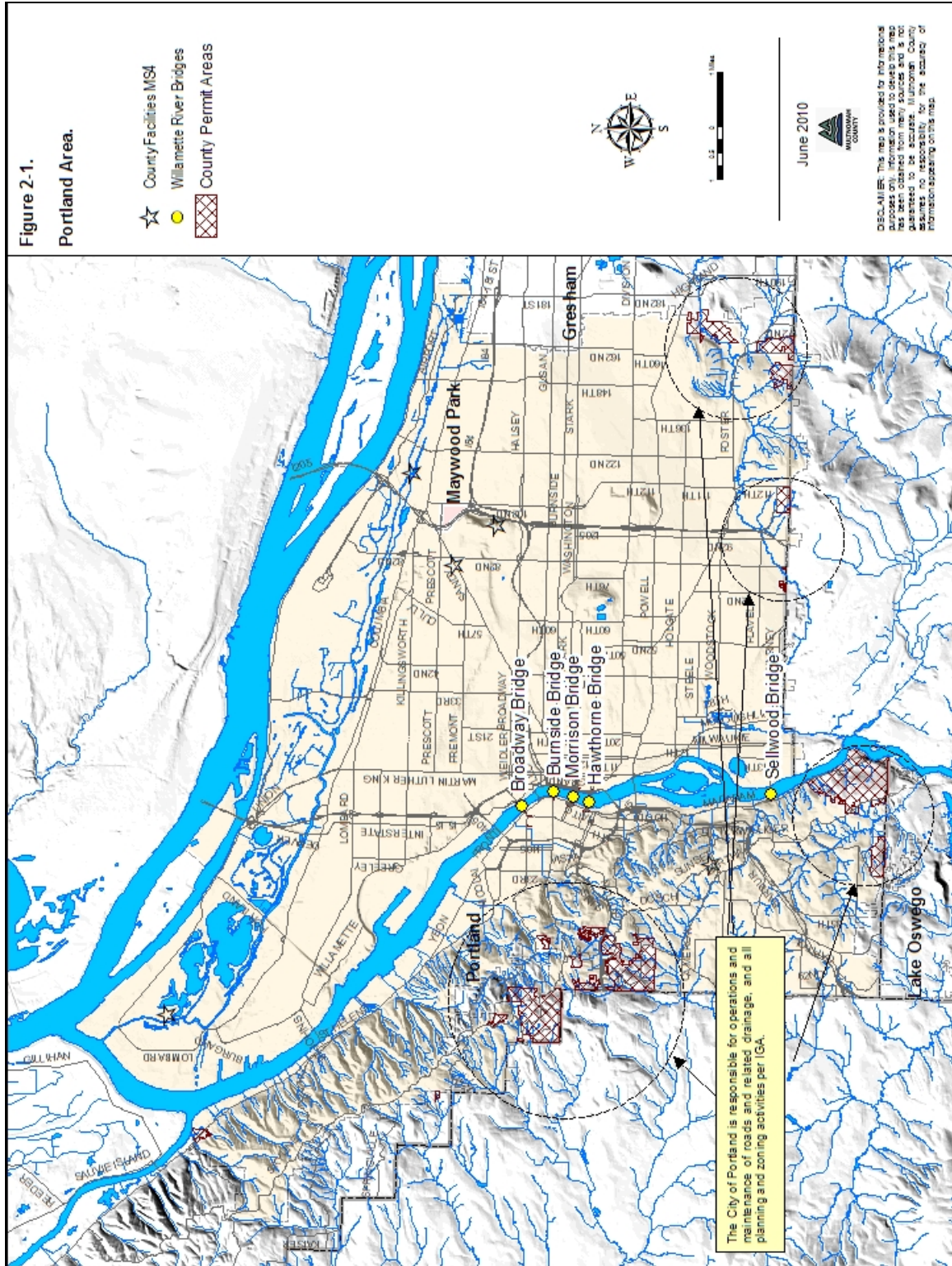
Permit area description

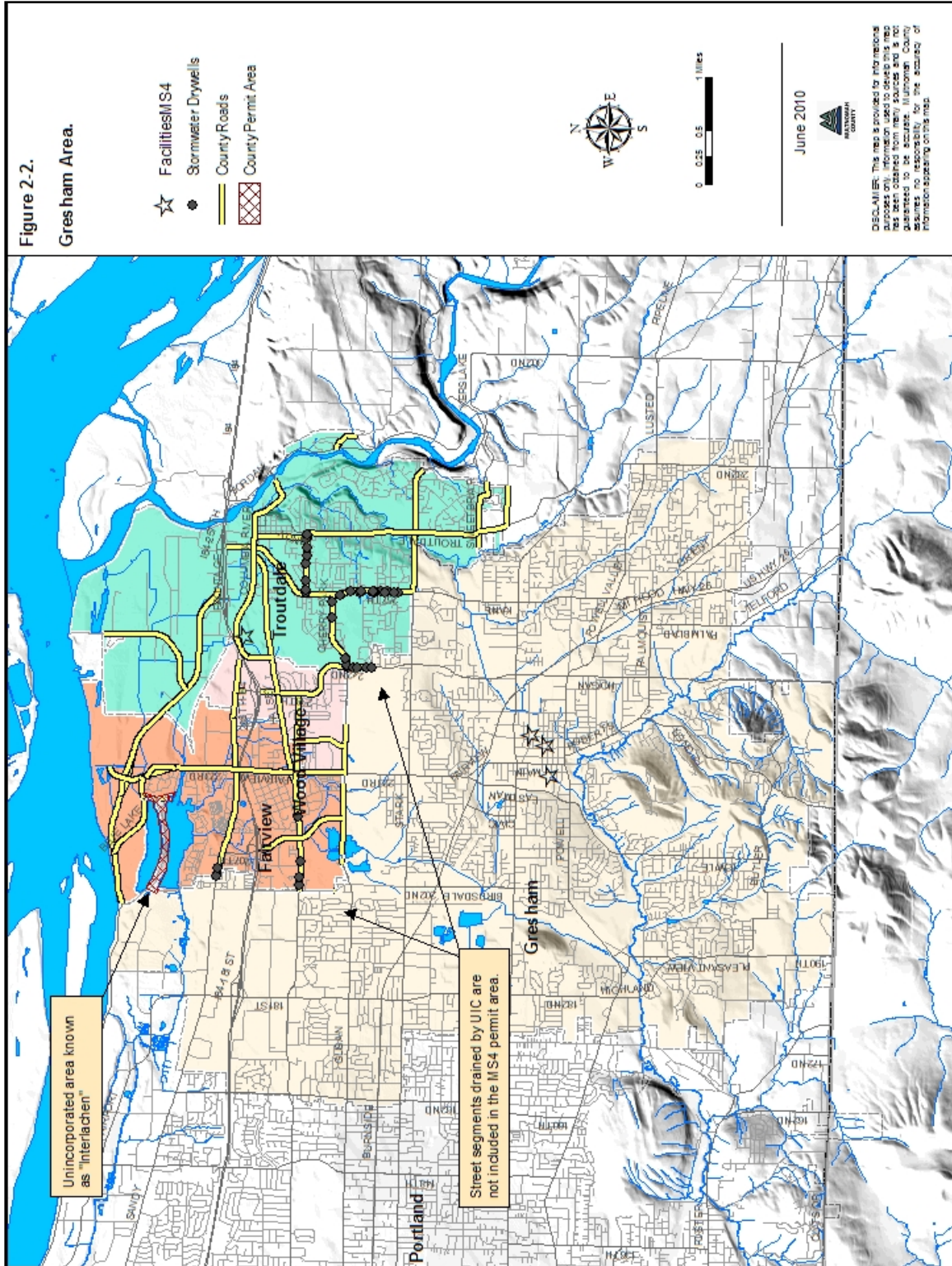
Multnomah County is a unique jurisdiction with NPDES permit areas composed of several discrete urban pockets, and approximately twenty-eight miles of road and bridge right-of-ways. The terms "Portland Area" and "Gresham Area" are used in this report to provide clarity in the area descriptions, and to provide continuity from the previous reporting areas.

Within the Portland Area, Multnomah County is responsible for five Willamette River bridges (see Figure 2-1). A few small unincorporated pocket areas within the Portland Urban Services boundary are under Portland's stormwater management through an Intergovernmental Agreement with the City of Portland. These areas are also under the City of Portland's land use authority.

Within the Gresham Area, Multnomah County is responsible for approximately twenty-eight miles of arterial roadways in the Cities of Fairview, Troutdale, and Wood Village, and the unincorporated residential area known as "Interlachen" that is located between Fairview Lake and Blue Lake (see Figure 2-2). In 2007, Troutdale and Wood Village came under NPDES Phase II coverage, and the County roads in those communities also came into permit coverage. Some road segments shown in the following maps are served by Underground Injection Controls or lack curb/gutter systems and do not discharge to surface waters.

More specific details regarding the County's jurisdiction are provided in the Stormwater Management Plan (updated April 2011).





Reporting requirements

The following table summarizes the requirements for the annual report as described in Schedule B.5 of the permit:

<i>Permit reporting requirement</i>	<i>Annual report section</i>
a. Status of each SWMP program element and progress in meeting measurable goals	BMP summary - status
b. Status or results of any public education program effectiveness evaluation conducted during the reporting year and summary of how the results were or will be used for adaptive management	BMP summary PI-1
c. Summary of the adaptive management process implementation during reporting year, including proposed changes or additions to BMPs	BMP summary – adaptive management
d. Proposed changes to SWMP elements designed to reduce TMDL pollutants	BMP summary
e. Summary of total stormwater program expenditures and funding sources over the reporting year and those anticipated in the next reporting year	Stormwater program budget
f. Summary of monitoring program results, including monitoring data and analyses	Environmental monitoring; also see Gresham and Portland permit annual reports
g. Proposed modifications to the monitoring plan	Environmental monitoring
h. Summary of the enforcement actions, inspections, public education programs, and illicit discharge screening and investigations	BMP summary
i. Overview of land use changes, concept planning and new development activities in the reporting year, including number of new post-construction permits issued and an estimate of the total new or replaced impervious surface area related to new development and redevelopment projects	Permit area description; BMP summary (ND, STR)
j. Results of ongoing field screening and follow up related to illicit discharges.	BMP summary (ILL-5)

Environmental monitoring

The City of Gresham and City of Portland have historically collected, managed, and analyzed stormwater and instream data on behalf of the County as the lead Permittee for the respective NPDES permits when the County was a co-permittee on both permits. Because the County's jurisdiction is part of the fabric of both permit areas, the data for each permit represented the overall quality of stormwater and instream health. This environmental monitoring was a component of the Intergovernmental Agreements (IGA) with both the City of Portland and City of Gresham.

Beginning December 2010, the County managed its stormwater program under a single individual permit. The monitoring requirements are met through a new IGA with the City of Gresham, and the monitoring plan is available online through the City of Gresham website.

The environmental data and analysis presented in the Annual Reports for City of Gresham independent of this report fulfill the monitoring requirement for the County's Annual Report, per the respective IGA. A monitoring summary is provided at the end of this report.

The data includes monitoring requirements from the County permit: two instream monitoring sites, two macroinvertebrate monitoring sites, and one mercury monitoring site. These are fulfilled by data from Fairview and Beaver Creeks, and the Columbia Slough Water Quality Facility.

Mercury monitoring

The mercury monitoring requirement is part of a special study to further the development of the Mercury TMDL. Two full years of Hg monitoring were completed during 2011-2013, which fulfills the mercury monitoring requirement as described in Table B-1 of the NPDES permit. To date, the Hg monitoring conducted by Multnomah County (and other MS4 Phase I permittees) has contributed to the characterization of urban stormwater runoff, a stormwater monitoring program objective. DEQ will review the monitoring data once all of the results from the MS4 permittees have been submitted. DEQ anticipates that additional Hg monitoring will not be required for the remainder of Multnomah County's permit term (Benjamin Benninghoff, personal communication 2013). Written request that the monitoring be eliminated was submitted to DEQ on November 1, 2013.

The mercury monitoring data analysis by the City of Gresham was included as an appendix to the 2013 Annual Report.

Adaptive management process

The assessment of BMPs occurs annually during preparation of the County NPDES annual report, to be submitted to DEQ by November 1 of each permit year. Among other reporting requirements, the MS4 annual report must contain (Schedule B.5) the following:

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

By providing a summary in the NPDES annual report of progress toward attaining BMP measurable goals (through data collection and tracking measures), the County both: 1) meets the aforementioned reporting requirement, and 2) facilitates a critical step in adaptively managing its stormwater program by assessing each BMP.

While preparing this MS4 annual report, the County collected data and feedback from staff responsible for implementing/reporting on each BMP to facilitate the BMP assessment process. Key factors considered in the annual evaluation include but are not limited to:

- *Was the BMP measurable goal attained? If not, describe circumstances why, and how progress will be made toward future attainment.*
- *For multi-year BMPs, were milestones or timelines met?*
- *Can we feasibly refine or improve the BMP to gain efficiency or effectiveness in removing stormwater pollutants?*
- *Are staffing/financial resources available to support such a BMP improvement or refinement?*

3. BMP Summary

The Multnomah County Stormwater Management Plan is a set of Best Management Practices (BMPs) designed to reduce stormwater pollutants to the maximum extent practicable. The County's stormwater management plan is made up of thirty-two BMPs grouped into seven categories as shown below. The following table summarizes the task, measurable goals, status, and changes for each BMP.

PI	Public Involvement and Education
OM	Operations and Maintenance
ILL	Illicit Discharges Control
ND	New Development Standards
STR	Structural Controls
NS	Natural Systems
PM	Program Management

Managers and staff in several Multnomah County workgroups implement the Stormwater Management Program. The functional groups are:

Public Affairs	Public Affairs Office
Bridge Engineering	Department of Community Services
Bridge Maintenance	Department of Community Services
Land Use Planning	Department of Community Services
Transportation Planning	Department of Community Services
Code Compliance	Department of Community Services
Facilities	Department of County Assets
Emergency Response	Department of Community Services
Right-of Way Permits	Department of Community Services
Road Maintenance	Department of Community Services
Road Engineering	Department of Community Services
Asset Management	Department of Community Services
Nuisance Code	Health Department, Community Health Services
Program Management	Department of Community Services

PI – Public Involvement and Education

Overall goal: *To inform and educate the public about the causes of stormwater pollution, the effects on local streams and rivers, and the need for stormwater management, and to encourage active participation in pollution reduction efforts.*

<i>BMP</i>	<i>Tasks</i>	<i>Measurable Goal</i>	<i>Status</i>	<i>Adaptive Management</i>
PI-1 Participate in Regional Public Education Efforts	<p>Provide County representative to attend the <i>Regional Coalition for Clean Rivers and Streams</i> (RCCRS) meetings.</p> <p>Plan and Implement public education campaign promoting behaviors that improve water quality.</p>	<p>Help develop and implement RCCRS annual strategy to promote behavior change through the RCCRS website, television, radio and social media.</p> <p>Evaluate education campaign effectiveness by November 1, 2014.</p>	<p>RCCRS continued to contract with EviroIssues to manage and outreach campaign for 2015-2016. A new campaign, “The River Starts Here” was launched in 2015 with a new website, social media, print advertisement. and local events.</p> <p>County staff led the planning of a regional outreach forum held on June 8, 2016, with help from the Intertwine Alliance and a steering committee of six NPDES jurisdictions. 25 people attended the forum to discuss broader regional collaboration and resource sharing.</p>	The outreach forum steering committee continues to meet and is planning another forum in fall 2016.
PI-2 Participate in Public Meetings	Attend public meetings related to water quality.	Track participation in watershed council and ad hoc committee meetings.	Water Quality (WQ) staff shared monitoring and project updates at regular monthly meetings of the Johnson Creek Watershed Council and Sandy River Watershed Council. WQ Staff participates in the Interjurisdictional Committee for Johnson Creek, a technical workgroup that coordinates stream monitoring and analysis for Johnson Creek watershed. WQ staff facilitates a similar group, known informally as the Beaver Creek Conservation Partnership. All meetings are held approximately once a month.	No change
PI-3 Distribute Public Education Information Regarding Stormwater	<p>Make brochures and other educational materials from Soil & Water Conservation Districts and Watershed Councils available at the planning office.</p> <p>Ensure that public education materials are current and cover relevant topics.</p>	Track the number of materials distributed at meetings, front counters and online.	Although the landowners who visit the planning office are largely rural property owners not included in the NPDES permit area, this public education outlet is maintained for the TMDL pollutant reduction. 88 brochures on various topics from septic maintenance, riparian management and livestock care were taken from the office.	Because there are not stormwater specific brochures available, this BMP will likely be modified at permit renewal

<p>PI-4 Conduct Training and Education for County Personnel</p>	<p>Send a representative(s) to water quality conferences when feasible. Share information learned in training with other staff.</p> <p>Train volunteers, maintenance and operations crews, as well as inspectors on impacts of activities on water quality and MS4 in addition to new approaches to water quality protection and proper reporting procedures.</p>	<p>Conduct a minimum of one staff training session a year.</p>	<p>WQ staff attended the regional Urban Ecology symposium (2/2016), and ACWA Stormwater Summit (5/2016).</p> <p>Vegetation staff continued to participate in regular meetings of the Cooperative Weed Management Areas group, and also participated in the Oregon Vegetation Management Association (Oct 2015).</p> <p>Seven road maintenance staff attended the ODOT Transportation 2 training (8/2015) and obtained the Road Scholar certificate.</p>	<p>No change</p>
<p>PI-5 Implement the Adopt-a-Road Program</p>	<p>Develop a strategy to promote the adopt-a-road program.</p> <p>Track road segments where volunteer roadside litter removal and clean-up is performed through participation in County Adopt-A-Road programs.</p>	<p>Continue to advertise and support the adopt-a-road program as interest exists.</p>	<p>Adopt-a-road program is promoted through an updated County webpage.. Thirty-two groups are active in Multnomah County. Clean ups range from once a month to once a year depending on the group. Adopt a Road is a trash pickup, but additional eyes on the road for illegal dumping is a benefit to the Roads program, as well as increasing the stewardship ethic in the community.</p>	<p>Changes to the website allow easier access to the program through an online form. Training is done through an online video.</p>
<p>PI-6 Maintain Signage to Protect Water Quality</p>	<p>Determine whether any areas need to be marked or re-marked and provide staff and materials to carry this out.</p> <p>Maintain signs in right-of-way promoting watershed awareness, as requested by watershed councils.</p>	<p>Inspect drain markers and signage once per permit term at all catch basins and stream crossings in the permit area.</p>	<p>GIS mapping of catch basins was completed with drain marker inspection in 2012.</p>	<p>No change</p>
<p>PI-7 Provide Opportunities for Public Involvement During the CIP Process</p>	<p>Involve the public in the process of updating the Capital Improvement Plan and Program (every two years) and in evaluating the stormwater quality impacts and issues associated with the program.</p>	<p>Ensure opportunities for public participation in the CIP update process through public meetings.</p> <p>Ensure that public comment period is established for permit renewal.</p>	<p>The Capital Improvement Plan and Program (CIPP) is reviewed annually and updated biennially to ensure that limited resources for projects are efficiently and equitably allocated to the most critical capital needs, including where equity can be improved, as well as to leverage County funds. The CIPP is readily available for review online where feedback can be submitted to the County. In addition, as part of the development of the annual budget a robust public outreach process was conducted by the county to get feedback. FY 15 included the biennial update of the Capital Improvement Plan and Program. Key components of the biennial update in FY 15 included programming corrections, updates to the</p>	<p>No change</p>

			Willamette River Bridges and Fish Passage Culvert criteria and project list. The public involvement program for the Sellwood Bridge project also continues from previous years. In FY16, the CIP was reviewed for final adoption of the budget and public outreach was conducted as part of the budget development and adoption process.	
PI-8 Facilitate Public Reporting of Illicit Discharges	Determine where signs need to be posted regarding illegal dumping and place them.	Install and maintain signage in all known areas that are problematic in terms of dumping.	No activity in permit area.	No change

OM – Operations and Maintenance

Overall goal: *To implement operations and maintenance practices for public streets, bridges, storm sewers, and other facilities to reduce pollutants in discharges from the municipal separate storm sewer system.*

<i>BMP</i>	<i>Tasks</i>	<i>Measurable Goal</i>	<i>Status</i>	<i>Adaptive Management</i>
OM-1 Review the RMOM for Potential Updates to Address Water Quality	Review the Road Maintenance Operations Manual annually. When manual revisions are made, conduct refresher staff training as provided for under BMP PI-4.	Annually review of the RMOM to ensure current practices are incorporated respect to water quality.	The RMOM was last revised in April 2015 and is posted online at multco.us/water-quality-program/reports-and-plans .	No change
OM-2 Inspect and Maintain the Storm Drainage System	Inspect the entire stormwater conveyance system on an annual basis. Utilize the record keeping system and database to record findings and follow-up work completed by field crews.	Establish criteria used to determine catch basin (CB) cleaning frequency to maintain effective pollutant removal by July 1, 2011. Clean all roadway catch basins (CB) a minimum of 2 times per year, unless catch basin cleaning records indicates less frequent or more frequent cleaning is appropriate.	Criteria for roadway CB and sweeping frequency were submitted to DEQ on June 22, 2011. The program involves remote data entry from vehicles in the field and GIS to store data. Catch basin fullness analysis using two years of cleaning showed that effective cleaning could be optimized with cleaning intervals between 1-3 times a year, depending on the catch basin type. Data was analyzed to determine cleaning frequency at individual catch basins for the next two-year cycle. Parking lot CBs maintained by County Facilities were inspected and cleaned on annual basis by Road Maintenance.	Catch basin cleaning frequency is adjusted depending on the fullness of the catch basin..
OM-3 Conduct Street Sweeping	Track street sweeping efforts to record the sweeping frequency.	Use catch basin cleaning records or inspections to inform the necessary sweeping frequency. Establish criteria used to determine street sweeping frequencies to maintain effective pollutant removal, and identify high priority street sweeping areas by July 1, 2011	(See OM-2 and PM-3) Sweeping routes were driven approximately twice a month for County arterial roads. Sweeping routes and frequency is adjusted for heavy leaf areas in fall.	See OM-2

OM-4 Properly Dispose of Road Waste Material	Identify alternatives for a new decant facility to be used for the dewatering of road wastes, or upgrades to the existing facility.	Annually review disposal options that protect water quality.	Vactor waste and sweepings are disposed at a private transfer facility. Vactor liquid is field decanted into public sewer trunk with approval from Fairview. Ditching spoils from the urban area will continue to be disposed at a waste facility.	No change
OM-5 Minimize Impacts from Anti-icing Operations	Continue to follow the County RMOM procedures for the application, collection, and washing of sanding materials applied to roadways. Continue to research alternative anti-icing methods.	Conduct street sweeping to recover sanding materials within two weeks after the Road Maintenance Manager determines that the roads are free from the threat of an ice or snow event.	Sanding materials were used very sparingly on steep hills and freeway ramps during ten freezing events in FY16 and were removed within two weeks after the threat of ice was gone. The effectiveness of MgCl has allowed us to reduce sanding materials.	No change
OM-6 Minimize Impacts from County Truck Hauling Practices	Follow the RMOM procedures for conducting equipment checks when hauling materials.	See OM-1	No activity in permit area.	See OM-1
OM-7 Minimize Impacts From Right-of-Way and Road Shoulder Maintenance	Conduct maintenance according to RMOM	See OM-1	No activity in permit area.	See OM-1
OM-8 Minimize Impacts from Ditch Maintenance	Conduct maintenance according to RMOM	See OM-1	No activity in permit area.	See OM-1
OM-9 Maintain County-owned stormwater facilities	Inventory facilities by January 1, 2013	Annual inspection of treatment facility	Road Maintenance contracted Bravo Environmental to replace Contech Stormfilters in two vaults in FY15. The vaults were visually inspected in FY16. Stormfilters on County bridges were inspected and replaced in FY16. Vegetated facilities were maintained by Road Maintenance staff and the inmate work crew labor. County Facilities maintains several Vortex units which were cleaned.	No change

ILL – Illicit Discharge

Overall goal: *To prevent, identify, investigate, and if appropriate, control/eliminate any non-stormwater discharges into the municipal separate storm sewer system.*

<i>BMP</i>	<i>Tasks</i>	<i>Measurable Goal</i>	<i>Status</i>	<i>Adaptive Management</i>
ILL-1 Implement the Spill Response Program	Continue to follow and implement the Multnomah County Spill Response Plan. Track and record spills and information regarding spills as they occur.	Conduct spill response procedures when spills are reported.	County crews inspect the Spill Response Truck monthly to ensure proper spill control materials are stocked. A concrete truck spilled concrete in the intersection of Sundial Rd and Marine Drive in August 2015. Concrete was removed by hand and vacuum sweeper. No concrete entered the stormwater system.	No change
ILL-2 Address Spills from Private Truck Haulers	Report to the appropriate agency of the private truck hauling practices impacting the County right-of-way and the stormwater conveyance system.	Contact all private haulers when spills are observed to ensure proper clean up	See incident response from concrete truck spill above.	No change
ILL-3 Require Erosion and Pollution Controls for Public Projects (formerly ILL-4 and ILL-5)	Execute formal contracting practices including pre-construction meetings, bonding, construction permit review, and erosion control inspections.	Inspect 100% of County project sites	FY 16 projects were all inspected for proper erosion control: <ul style="list-style-type: none"> • Troutdale and Sweetbriar Elementary Pedestrian Crossing • Arterial pavement overlays 	No change
ILL-4 Investigate Illegal Dumping	Continue to implement the existing field inspection program during routine maintenance activities. Record and report any noticeable illegal discharge and dumping in the right-of-way.	Clean up all reported discharge or debris dumped in the right-of-way	No threats to water quality were reported from illegal dumping activity in the permit area.	No change
ILL-5 Detect and Eliminate Illicit Discharges to the Storm Sewer	Continue to maintain the bridge restroom facility holding tanks quarterly. Document enforcement response plan for illicit discharges by November 1, 2011 Develop pollutant parameter actions levels and identify priority outfall locations by July 1, 2012.	Conduct quarterly maintenance of bridge facilities. Conduct tasks by date above, and annual inspection of dry weather flows at major outfalls.	Bridge facilities maintained quarterly without incident. Dry weather outfall inspection of four outfalls occurred in July 2015. No visible signs of illicit discharge were observed.	No change

ND – New Development

Overall goal: *New Development Standards (ND) BMPs are designed to mitigate pollutant discharges and other water quality impacts associated with new development and redevelopment during and after construction.*

<i>BMP Description</i>	<i>Tasks</i>	<i>Measurable Goal</i>	<i>Status</i>	<i>Adaptive Management</i>
ND-1 Require Erosion Control for Private Development	Review and provide comments on applications for grading permits and hillside development permits. Perform Erosion and Sediment Control Inspections for all approved construction projects.	Inspect 100% of sites once during the permit review, and a second time during active construction.	No activity in Interlachen area during permit year.	No change
ND-2 Regulate Stormwater Discharge	Continue to review new development permit applications to ensure proper connection to the storm sewer system and application of design standards. Inspect stormwater facilities during and after construction to ensure that the site is compliant with design standards.	Conduct plan reviews and inspections for 100% of permitted projects.	No activity in Interlachen area during permit year.	No change

STR – Structural Controls

Overall goal: *To implement structural modifications (constructed facilities) to existing systems/development to reduce pollutants in discharges from the municipal separate storm sewer system.*

<i>BMP</i>	<i>Tasks</i>	<i>Measurable Goal</i>	<i>Status</i>	<i>Adaptive Management</i>
STR-1 Address Water Quality with New Capital or Roadway Improvement Projects	<p>Develop criteria and strategy for when stormwater treatment will be incorporated into public projects.</p> <p>Conduct plan checks of stormwater quality treatment facilities that are included in capital improvement or roadway improvement projects to assure they follow standard design criteria that include stormwater quality considerations, and that the appropriate facility is selected for the intended purpose.</p>	Identify strategy or criteria used to determine when stormwater quality treatment will be incorporated into Capital Improvement Projects by November 1, 2013.	<p>The County submitted criteria for when stormwater treatment is incorporated into public projects to DEQ in 2013.</p> <p>Phase II of the Wood Village Blvd project is incorporated into the Arata Rd capital project. Stormwater treatment for existing impervious area on Arata Rd and Wood Village Blvd will include bioretention areas.</p> <p>Off-site stormwater treatment will be constructed for Sandy Blvd project: upgrade stormfilter vault on 223rd ave.</p> <p>Beaver Creek culvert projects at Stark St (2017) and Cochran Rd (2018) will have bioswale designs.</p>	No change
STR-2 Retrofit Existing Facilities for Water Quality Benefit	<p>Include consideration of stormwater treatment for water quality purposes in capital projects to reduce pollutants to the maximum extent practicable.</p> <p>Conduct a hydromodification assessment and develop a strategy to identify and prioritize potential retrofit projects by November 1, 2014.</p>	<p>Identify one retrofit project by November 1, 2013.</p> <p>Develop hydromodification and retrofit strategy by November 1, 2014.</p>	<p>Halsey St project was a second phase of the project which tied to an existing stormfilter vault.</p> <p>Hydromodification Assessment and Stormwater Retrofit Strategy was submitted to DEQ on November 1, 2014.</p>	No change
STR-3 Inventory and Map the County Storm Sewer System	Continue to update the County GIS storm sewer system map.	Complete GIS drainage system maps of the NPDES permit area by 2014, including catch basins, culverts, manholes, ditches and pipes systems.	Stormwater infrastructure mapping in GIS is completed. A multi-jurisdictional stormwater GIS group was established by the County in 2013, and coordination meetings are held semi-annually.	No change

NS – Natural Systems

Overall goal: *to help preserve and restore the natural environment/functions to reduce pollutants in discharges from the municipal separate storm sewer system.*

<i>BMP</i>	<i>Tasks</i>	<i>Measurable Goal</i>	<i>Status</i>	<i>Adaptive Management</i>
NS-1 Conduct Vegetation Management Activities	<p>Follow RMOM and IVM procedures.</p> <p>Maintain current Oregon Department of Agriculture (ODA) certifications for chemical applicators.</p> <p>Review and update integrated vegetation management practices (IVM) annually.</p>	Review RMOM vegetation activities and the Integrated Vegetation Management Program (IVM) annually.	No new updates.	No change
NS-2 Specify Native Vegetation in ROW and Permitted Projects	<p>Review the current contract specifications for landscaping in the right-of-way, and update as needed.</p> <p>Promote the use of native vegetation and develop contract specifications for landscaping. Condition plan approvals with invasive plants removal, if needed.</p> <p>Ensure contract specifications are followed which require certain landscaping materials and placement.</p>	Inspect 100% of project sites for landscaping specifications.	No activity in the permit area	No change

PM – Program Management

Overall goal: *Program Management BMPs ensure effective program management, coordination, and reporting.*

<i>BMP</i>	<i>Tasks</i>	<i>Measurable Goal</i>	<i>Status</i>	<i>Adaptive Management</i>
PM-1 Stormwater Program Management	<p>Continue to participate in the NPDES MS4 coordination meetings and any DEQ meetings. Continue to work with other NPDES MS4 permittees and DEQ to implement the stormwater management program.</p> <p>Review each BMP file annually. Prepare an annual report to demonstrate the County's compliance with requirements. Submit to DEQ.</p>	Annually review BMP implementation data and submit annual report by November 1 each year.	Annual report submitted to DEQ.	No change
PM-2 Assess and Evaluate the Stormwater BMP Program	Evaluate progress of BMPs for annual report using adaptive management approach.	Develop an adaptive management approach by November 1, 2011.	The adaptive management approach was discussed mainly in the context of our catch basin and sweeping efficiency program.	No change
PM-3 Maintain Environmental Management Database	<p>Pilot new GPS and onboard computer technology by July 2011.</p> <p>Develop GIS or other mapping technology to sync with GPS system by July 2012.</p> <p>Develop SAP work orders and tracking to integrate with GIS by July 2013.</p>	Ensure tasks are completed by dates shown.	Work orders for Road Maintenance are captured in Cartegraph operations management system. Cartegraph uses GIS to capture catch basin cleaning and sweeping data.	The County has moved to Cartegraph to manage work orders for ease of use and GIS integration.

4. Stormwater Management Program Budget

Program activity within the County's NPDES permit area is divided between areas that were previously managed under the Portland area and Gresham area NPDES permits. The Water Quality program, consisting of one staff manages the County stormwater program, and portions of two Asset Management staff provide mapping and database services across the entire permit area. Services specific to the two areas are described below.

Gresham area stormwater related services:

- Road Maintenance expenditures and anticipated budget allocations within the Fairview and Interlachen incorporate items including drainage maintenance, right-of-way, surface management, vegetation management, general administration, emergency road hazard response and training.
- Road Engineering expenditures and anticipated budget allocations within Fairview and Interlachen incorporate drainage studies and reviews, environmental compliance review, as-built plan drafting and inventory, GIS database entry, and training.
- Land Use and Transportation Planning expenditures and anticipated budget for design review of capital improvements and right-of-way impacts to the County roads in Fairview, Troutdale, and Wood Village, and for design review and permits for development within the Interlachen Area.

Portland area stormwater related services:

- Bridge Maintenance expenditures and anticipated budget allocations within the Portland Permit area incorporate items including, drainage maintenance, right-of-way, surface management, vegetation management, general administration, emergency road hazard response and training.
- Bridge Engineering expenditures and anticipated budget allocations within the Portland Permit area incorporate drainage studies and reviews, environmental compliance review, as-built plan drafting and inventory, GIS database entry, and training.
- Multnomah County Road Maintenance, contracts the City of Portland and Clean Water Services to maintain and operate County owned roads to their respective standards in the urban unincorporated pocket areas through Intergovernmental Agreements.
- Road Engineering continues to retain authority to review access and impacts to the right-of-way including stormwater discharge when such discharges cannot be retained on site.
- Transportation Planning within the Portland Permit area includes development review in the unincorporated pockets where such development has the potential to access or impact the county right-of-way.

Funding for stormwater program expenditures are derived from two sources. The Land Use Planning receives funding from County's General Fund. The Transportation Division (Road and Bridge Services and

Transportation Planning) receive funding from the State Highway Trust Fund, which includes includes the State gasoline tax, weight/mile tax on trucks, and vehicle registration fees. Highway Trust Funds are constitutionally dedicated to road related issues. The County has no revenue from dedicated stormwater fees. This is a result of the County roads and unincorporated pockets being nested within other city jurisdiction's service areas.

The table below outlines program expenditures for Fiscal Year 2016 and provides the anticipated budget for Fiscal Year 2017.

<i>Program Area</i>	<i>FY 2016 actual</i>	<i>FY 2017 budget</i>
Water Quality Program ¹	\$330,073	\$179,275
Asset Management ²	\$7,560	\$8,010
Gresham area		
• Road Maintenance ³	\$493,118	\$493,000
• Road Engineering ³	\$190,011	\$222,011
• Land Use & Transportation Planning	\$0	\$2,000
Portland Area		
• Bridge Maintenance/Operations	\$16,011	\$17,433
• Bridge Engineering ⁴	\$60,836,592	\$45,410,961
• Road Maintenance IGA	\$0 ⁵	\$100,000
• Road Engineering ⁶	\$14,535	\$14,625
• Transportation Planning	\$100	\$2,000

¹Figure includes entire Water Quality program includes one staff, monitoring budget for UIC, TMDL and NPDES programs, and additional program costs. Decrease from previous year is the result of the hire of a limited duration GIS technician for stormwater mapping.

²Estimate is based on a portion of time from two Asset Management staff.

³Budget estimate is based on actual spending from the previous year for time spent on water quality work plus a budget for training.

⁴The amount shown represents the entire Bridge Engineering program. The entire program is included because Bridge Services do not budget or collect charges for water quality tasks. Water quality best practices are integral in all aspects of design and construction and hence we are not able to be segregated from the other work. Increase in budget reflects Sellwood Bridge funding.

⁵Portland Road Maintenance IGA funds were used for non-water quality related maintenance, thus not reported here.

⁶Estimate of the amount of time spent on water quality issues in Portland area right-of-way.

5. Monitoring Summary

Environmental monitoring for the NPDES MS4 Phase I permit includes instream monitoring, macroinvertebrate monitoring, stormwater sampling for mercury, and pesticide monitoring. This summary describes the instream and macroinvertebrate monitoring. In previous permit terms, the mercury monitoring was completed. Pesticide monitoring is slated to be done in conjunction with the County's underground injection control (UIC) Water Pollution Control Facility (WPCF) permit requirements. The County received the UIC WPCF permit in March 2014, and stormwater sampling began in fall of 2014.

Instream Data

Instream monitoring is required at two sites in the permit area for a range of pollutant parameters shown in the table below. Monitoring is coordinated with the City of Gresham; the County maintains an intergovernmental agreement with Gresham to contract monitoring services, including monitoring scope, and sampling methods. Fairview Creek and Beaver Creek are the two priority watersheds in the Gresham area. Fairview Creek results are summarized in the Gresham NPDES Annual Report.

<i>Monitoring location</i>	<i>Sampling frequency</i>	<i>Parameters</i>
Lower Beaver Creek (BCI1) Upper Beaver Creek (BCI2)	4 events/year	Biological Oxygen Demand (BOD5) Total suspended sediment (TSS) Hardness Temperature Dissolved Oxygen (DO) Conductivity pH Nitrate (NO ₃) Ammonia nitrogen (NH ₃ -N) Total phosphorus (TP) Ortho-phosphorus (O-PO ₄) Copper, total and dissolved Lead, total and dissolved Zinc, total and dissolved E.coli bacteria
Lower Beaver Creek (BCI1) Upper Beaver Creek (BCI2)	1 event/year	Macroinvertebrate

Two sites in Beaver Creek are monitored by the County, one site at the boundary of the urban and agricultural land uses, and one near the mouth of the stream, where the stream joins the Sandy River. Instream monitoring results are generally within expected ranges, with exceedances in temperature and E.coli. Macroinvertebrate scores are low, which is consistent with previous sampling results.

Sample ID	Site ID	Date	Time	24-hr rain (in)	Field DO (mg/L)	Field pH	Field Temp (°C)	Conductivity (uS/cm)	Turbidity (ntu)	BOD5 (mg/L)	TSS (mg/L)	NH3-N (ug/L)	Chloro-phyll-a (mg/m3)	NO3-N (ug/L)	O-PO4 (ug/L)	TKN (ug/L)	Total-P (ug/L)	Hardness (mg CaCO3/L)
W14G236-10	BCI1	7/21/2015	13:57	0.00	8.21	8.68	20.9	138.2	1.76	2	2	20	2	1100	80	320	87	88.1
W14J304-10	BCI1	10/27/2015	13:23	0.00	7.19	7.37	11.8	52.7	3.75	2	4	20	2	820	60	410	90	50.6
W15A209-10	BCI1	1/28/2016	13:03	0.69	11.8	6.97	9.6	46.9	159	2	98	101	NM	1600	32	740	387	29.7
W15D235-10	BCI1	4/25/2016	12:33	0.26	9.15	7.47	11.9	64.2	9.53	2	2	20	NM	1200	22	45	56	39.5
W14G236-11	BCI2	7/21/2015	12:32	0.00	6.86	8.28	21.5	100.2	4.62	2	4	79	4	290	75	990	121	53
W14J304-11	BCI2	10/27/2015	11:50	0.00	10.39	7.38	9.6	58.8	5.7	2	4	25	2	1250	88	550	118	49.3
W15A209-11	BCI2	1/28/2016	11:52	0.68	12.65	6.72	9	52.5	370	2	229	87	NM	2800	27	1160	634	36.6
W15D235-11	BCI2	7/21/2015	13:57	0.00	8.21	8.68	20.9	138.2	1.76	2	2	20	2	1100	80	320	87	88.1

Sample ID	Site ID	Date	Time	Hg-Total (ug/L)	Cu-Total (ug/L)	Pb-Total (ug/L)	Zn-Total (ug/L)	Cu-Diss (ug/L)	Pb-Diss (ug/L)	Zn-Diss (ug/L)	E. coli (MPN/100ml)
W14G236-10	BCI1	7/21/2015	13:57	0.0010	0.92	0.1	2.0	0.759	0.1	0.933	86
W14J304-10	BCI1	10/27/2015	13:23	0.0021	1.7	0.1	4.6	1.48	0.1	3.41	290
W15A209-10	BCI1	1/28/2016	13:03	0.0128	5.06	2.78	39.6	1.09	0.1	3.09	500
W15D235-10	BCI1	4/25/2016	12:33	0.0022	1.82	0.208	6.4	1.42	0.1	2.85	530
W14G236-11	BCI2	7/21/2015	12:32	0.0025	2.09	0.117	1.5	1.79	0.1	0.654	63
W14J304-11	BCI2	10/27/2015	11:50	0.0022	2.3	0.1	1.7	2.06	0.1	1.17	660
W15A209-11	BCI2	1/28/2016	11:52	0.0122	6.94	5.01	34.0	0.767	0.1	0.635	350
W15D235-11	BCI2	7/21/2015	13:57	0.0010	0.92	0.1	2.0	0.759	0.1	0.933	86

Bold indicates results below reporting limits
Shaded cell indicates water quality standard exceedance

Macroinvertebrate Site	B-IBI score
BCI1	22
BCI2	16

Pesticide monitoring data

Pesticide data was collected through the County's Underground Injection Control (UIC) Program, as described in the letter to DEQ, April 25, 2011. Details of the pesticide selection process are found in the County's UIC Monitoring Plan (2014), which can be downloaded from the County's Water Quality Program website (<https://multco.us/water-quality-program/reports-and-plans>).

The objective of this pesticide sampling is to fill data gaps about pesticides that may be commonly used along County's urban roadways and at County facilities. 179 different pesticides were screened using two methods to provide a baseline of pesticide information: Pacific Agricultural Laboratory Multi-residue Pesticide Screen and the Chlorinated Acid Herbicide Profile. Data were collected from two UICs and three facilities.

Three pesticides were detected from the two UICs on roadways, and two pesticides were detected at two County facilities.

Pesticide detections are given below, followed by the complete data table.

Analyte	Sample Date	Result	QL	Unit	Location of Sample
2,4-D	12/01/15	0.13	0.08	ug/L	Midland Library
2,4-D	12/01/15	0.25	0.08	ug/L	SW Cherry Park Ave
Triclopyr	12/01/16	0.27	0.08	ug/L	SW Cherry Park Ave
Triclopyr	12/01/16	0.22	0.08	ug/L	SW 257 th Ave
Pentachlorophenol (EPA8270D)	1/28/16	1.6	1.0	ug/L	SW Cherry Park Ave
Pentachlorophenol (EPA8151A)	1/28/16	0.26	0.16	ug/L	SW Cherry Park Ave
Pentachlorophenol (EPA8151A)	1/28/16	1.3	0.16	ug/L	SW 257 th Ave
Pentachlorophenol (EPA8151A)	1/28/16	0.25	0.16	ug/L	Hanson Complex

Pacific Agricultural Laboratory	P160104-01	Multiresidue Profile	Methiocarb	1/28/2016	8:40 AM	1/29/2016	2/11/2016	Not Detected	0.06	µg/L	SW Cherry Park Road (west)
Pacific Agricultural Laboratory	P160104-01	Multiresidue Profile	Oxamyl	1/28/2016	8:40 AM	1/29/2016	2/11/2016	Not Detected	0.06	µg/L	SW Cherry Park Road (west)
Pacific Agricultural Laboratory	P160104-01	Multiresidue Profile	Thiobencarb	1/28/2016	8:40 AM	1/29/2016	2/11/2016	Not Detected	0.06	µg/L	SW Cherry Park Road (west)
Pacific Agricultural Laboratory	P160104-01	Multiresidue Profile	Aldicarb	1/28/2016	8:40 AM	1/29/2016	2/11/2016	Not Detected	0.06	µg/L	SW Cherry Park Road (west)
Pacific Agricultural Laboratory	P160104-01	Multiresidue Profile	Aldicarb Sulfoxide	1/28/2016	8:40 AM	1/29/2016	2/11/2016	Not Detected	0.06	µg/L	SW Cherry Park Road (west)
Pacific Agricultural Laboratory	P160104-01	Multiresidue Profile	Carbaryl	1/28/2016	8:40 AM	1/29/2016	2/11/2016	Not Detected	0.06	µg/L	SW Cherry Park Road (west)
Pacific Agricultural Laboratory	P160104-01	Multiresidue Profile	Fenobucarb	1/28/2016	8:40 AM	1/29/2016	2/11/2016	Not Detected	0.06	µg/L	SW Cherry Park Road (west)
Pacific Agricultural Laboratory	P160104-01	Multiresidue Profile	Methomyl	1/28/2016	8:40 AM	1/29/2016	2/11/2016	Not Detected	0.06	µg/L	SW Cherry Park Road (west)
Pacific Agricultural Laboratory	P160104-01	Multiresidue Profile	Propoxur	1/28/2016	8:40 AM	1/29/2016	2/11/2016	Not Detected	0.06	µg/L	SW Cherry Park Road (west)

APPENDIX A. Regional Coalition for Clean Rivers and Streams Annual Report 2016



REGIONAL COALITION FOR CLEAN RIVERS AND STREAMS

FISCAL YEAR 2015-2016 ANNUAL REPORT

JULY 29, 2016

PREPARED BY:



enviroissues



FY 2015-16 OVERVIEW

The Regional Coalition for Clean Rivers and Streams (Coalition) continued its work – initiated in the mid-1990s – of providing coordinated messaging to target behaviors linked to stormwater pollution from residential sources across the Portland metropolitan region. The Coalition deployed the previously developed *The River Starts Here* creative concept through a print advertising campaign in spring of 2016. Other Coalition activities in the 2015-16 fiscal year included convening the Clean Rivers and Streams Forum to discuss collaboration among agencies within and beyond the Portland metropolitan region to address non-point-source pollution and promoting the Coalition and its messages at community events.

Coalition participants include:

- Clackamas County Water Environment Services on behalf of members of the Clackamas co-permittee group
 - Clackamas County Service District No. 1
 - City of Gladstone
 - City of Lake Oswego
 - City of Milwaukie
 - City of Oregon City
 - City Wilsonville
 - Oak Lodge Sanitary District
 - Surface Water Management Agency of Clackamas County
- Clean Water Services (serving cities and other urban areas in Washington County)
- Multnomah County
- City of Gresham

The City of Gresham began participation in the Coalition in 2016 and indicated its intention to join in the next cost-sharing agreement among members. The Coalition continues active discussions with additional future members. The City of Portland left the Coalition in September, 2015, and transferred its role as Coalition fiscal agent to Multnomah County.

This report covers the time frame of July 1, 2015 - June 30, 2016. Supporting materials are included in an appendix.

BACKGROUND

As identified in the 2013 Strategic Plan, the mission of the Coalition is to collaborate across the Portland metropolitan region to improve watershed health by changing household behaviors, curbing polluted runoff and better connecting people with the environments in which they live and play. Coalition members leverage their collective resources to conduct outreach to communities across the region with common stormwater information and messages. Coalition activities complement individual agency efforts to raise awareness of stormwater runoff and affect behavior change to prevent pollution and protect regional surface water quality. Coalition activities support commitments relative to state permits under the federal Clean Water Act (administered by the Oregon Department of Environmental Quality),



including Total Maximum Daily Load and Municipal Separated Storm Sewer System (MS4) programs, as well as compliance with the federal Endangered Species Act.

Participants in the Coalition have diverse roles in conducting stormwater education and outreach. Clean Water Services, City of Gresham and Clackamas County Water Environment Services each have developed specific outreach programs for their jurisdictions. The Clackamas co-permittee group has used the creative materials developed by the Coalition to varying degrees. Multnomah County has more limited permit requirements focused on its roads and bridges.

The most recent cost sharing agreement among Coalition members was executed in September 2015 and expired in March 2016. As of July 2016, Coalition members are in the process of finalizing a new Intergovernmental Agreement for FY 2016-17.

REGIONAL AUDIENCE

The Coalition targets behaviors from residential sources linked to stormwater pollution prevention. Information and messages used by the Coalition are intended to reach those making purchasing and management decisions about yard care, pets and auto maintenance activities – some of the most likely sources of stormwater pollution from residents. Coalition activities address a range of surface water contaminants, including nutrients and toxics from fast-releasing synthetic fertilizers and chemical pesticides applied to yards and lawns, nutrient loads from car washing soaps, metals and other toxics from vehicle maintenance (and unmaintained vehicles), *E. coli* from pet waste, turbidity from eroded soils and other contaminants from illicit discharges.

KEY MESSAGES

The Coalition's key messages focus on raising awareness about pollution from stormwater runoff and motivating actions to protect surface water quality through action at the household level. The key messages are:

- Stormwater runoff is now our number one source of water pollution. When it rains, pollutants from your home, car, and garden wash into our rivers and streams.
- Bacteria from uncollected dog waste washes into our rivers and streams. You can protect our water by picking up after your pets.
- Yard and garden products wash into our rivers and streams. You can protect our water by using compost and slow-release fertilizer.
- Motor oil, solvents, and soaps wash into our rivers and streams. You can protect our water by keeping car-care chemicals out of storm drains.

FY 2015-16 ACTIVITIES AND RESULTS

Activities during the reporting period focused on continuing to implement the Coalition's strategic plan with messaging and outreach using *The River Starts Here* creative concept, developed in FY 2014-15. This concept was informed by the research summary about stormwater behavior (DHM Research, Feb. 2014) used by Coalition members in partial fulfillment of the FY 2014-2015 MS4 permit requirement to evaluate the effectiveness of permittee's education and outreach program.



STRATEGIC PLAN IMPLEMENTATION

A strategic plan, adopted in 2013, continued to guide Coalition efforts during the fiscal year. The Coalition acted on strategic plan goals as summarized below:

Goal 1: Maintain a functioning Coalition

Coalition members began preparing an updated cost sharing approach and budget for FY 2016-17. Discussions with additional agencies that wish to join the Coalition are active and ongoing. Specifically, members discussed the Coalition and its benefits with other municipal stormwater organizations at the annual meeting of the Association of Clean Water Agencies Oregon Chapter and during a special Clean Rivers and Streams Forum meeting for this purpose held in June 2016.

Goal 2: Develop and adapt creative products to fulfill the Coalition's mission

The Coalition continued to use collateral materials developed with *The River Starts Here* creative concept through newspaper and web advertising. The Coalition also produced temporary tattoos with *The River Starts Here* logo to promote clean water messaging among youth, as well as branded T-shirts and banners that can be used for booths at community events. Coalition members used collateral materials through individual outreach events held throughout the year.

Goal 3: Practice adaptive management

The Coalition is committed to leveraging available resources to maximize impact while setting the stage for a future collaboration among agencies. With changes in Coalition membership during the fiscal year, the Coalition worked to engage potential future partners. The Clean Rivers and Streams Forum, noted above, served as one method to educate potential new members and extend the reach of messages.

THE RIVER STARTS HERE MESSAGING AND OUTREACH

ADVERTISING

The advertising campaign conducted during the fiscal year included print ads in local newspapers and digital ads in local news websites.

Print advertisements

Print ads were placed in Pamplin Community Newspapers in the Coalition area. The three advertisements shown in Figure 1 were used. A summary of print advertising is shown in Table 1.



Figure 1: Print advertisements, Pamplin Community Newspapers (not to scale)



Table 1: Print advertisement placement and circulation

Pamplin Community Newspapers	Circulation	Readership
Portland	50,000	125,000
Beaverton	7,000	17,500
Tigard/Tualatin	5,250	13,125
Lake Oswego	7,250	18,125
West Linn	3,900	9,750
Wilsonville	3,500	8,750
Forest Grove	5,000	12,500
Hillsboro	10,000	25,000
Gresham	10,000	25,000
Clackamas / Oregon City	17,000	42,500
Molalla	3,500	8,750
Happy Valley Monthly	Not available	Not available
TOTAL	122,400	306,000



In addition to paid advertising, *The River Starts Here* messaging was also disseminated in publications and outlets produced by individual members through their communications channels. For instance, display ads were placed in the *Clackamas County Citizen News*, which is mailed to every household in the county, and an article expanding on the campaign message was in the July, 2015 *HelloLO* for the City of Lake Oswego, which reaches its population of approximately 37,000.

Web advertisements

Web advertisements, shown in Figure 2, were placed through Pamplin Media Group for websites in the Pamplin Network. The advertisements used the river, pets, and auto motifs and ran between March 1 and March 31, 2016. Web advertisements achieved 449,132 impressions and 792 clicks for a click rate of 0.17 percent.

Figure 2: Web advertisements, Pamplin Media Group (not to scale)



COMMUNITY EVENTS AND AGENCY COLLABORATION

Representatives of member agencies promoted Coalition messages throughout the fiscal year. The Coalition produced collateral materials emphasizing *The River Starts Here* brand and messages to support community events.

Clean Rivers and Streams Forum

The Clean River and Streams Forum was conceived as part of a series of workshops with goals to:

- 1) create a vision for broad regional collaboration,
- 2) create a formal organizational structure and operational model, and
- 3) begin planning and developing creative campaigns at the regional level.

A five-member steering committee planned and organized the initial Forum meeting to discuss broad collaboration among National Pollutant Discharge Elimination System (NPDES) permit holders for stormwater outreach. Steering committee members included staff from Multnomah County, City of Salem, Marion County, City of Eugene, City of Keizer and Clean Water Services. The steering committee held three conference calls to plan the event with David Cohen from the Intertwine Alliance, who participated as the facilitator for the event and coordinator.

The forum agenda was based on strategic plan concepts forwarded by Coalition members, including expanding partnerships and funding to amplify messaging, reaching new target audiences including diverse communities, and creating value-based and place-based messages to raise awareness about our connection with water quality.

The Forum was held at the Keizer Civic Center on June 8, 2016. Over 25 representatives from NPDES jurisdictions participated in the discussions. Staff from DEQ, the Willamette Partnership and an outreach firm participated as guests. The agenda for the forum included a review of examples of regional collaboration from various states, a visioning exercise, and breakout discussions on campaign ideas, diversity of audience, branding and program evaluation.

Forum attendees gave very positive reviews and over half expressed interest in helping plan future forums.

OMSI Science Pub tabling event: “Debunking the Myths of the Willamette”

Coalition members planned and participated in a tabling event hosted by the Oregon Museum of Science and Industry (OMSI) Science Pub series on June 21, 2016. The talk was hosted by the Human Access Project, the non-profit behind the annual The Big Float, a celebration on the Willamette River. The talk featured discussion of water quality issues related to swimming in the Willamette featuring guests from the City of Portland, Oregon Department of Environmental Quality, Oregon Health Authority and Oregon State University.



The tabling featured *The River Starts Here* campaign banners, T-shirts and temporary tattoos, a watershed model, informational materials and free dog waste bags. Staff from City of Gresham, Clackamas County Water Environment Services, Multnomah County and the City of Lake Oswego interacted with 30 or more people to promote good behaviors for clean water.

Figure 3: Coalition representatives at the OMSI Science pub



Additional community events

The River Starts Here messaging was also disseminated at the following community events during FY 2016-17:

- Tri-Met Orange Line Opening Celebration
- Clackamas County Fair
- Clackamas River Basin Council Down the River Clean Up
- Children’s Clean Water Festival
- Clackamas County Sustainability Fair
- Clackamas County Water Education Team’s “Celebrating Water” event

WEBSITE: THERIVERSTARTSHERE.ORG

TheRiverStartsHere.org launched in June 2015. The website uses a modern design featuring *The River Starts Here* creative assets (Figure 4). It features an image slider highlighting Coalition messages and includes links to member websites and additional web resources. The website URL was promoted through newspaper and web advertisements.

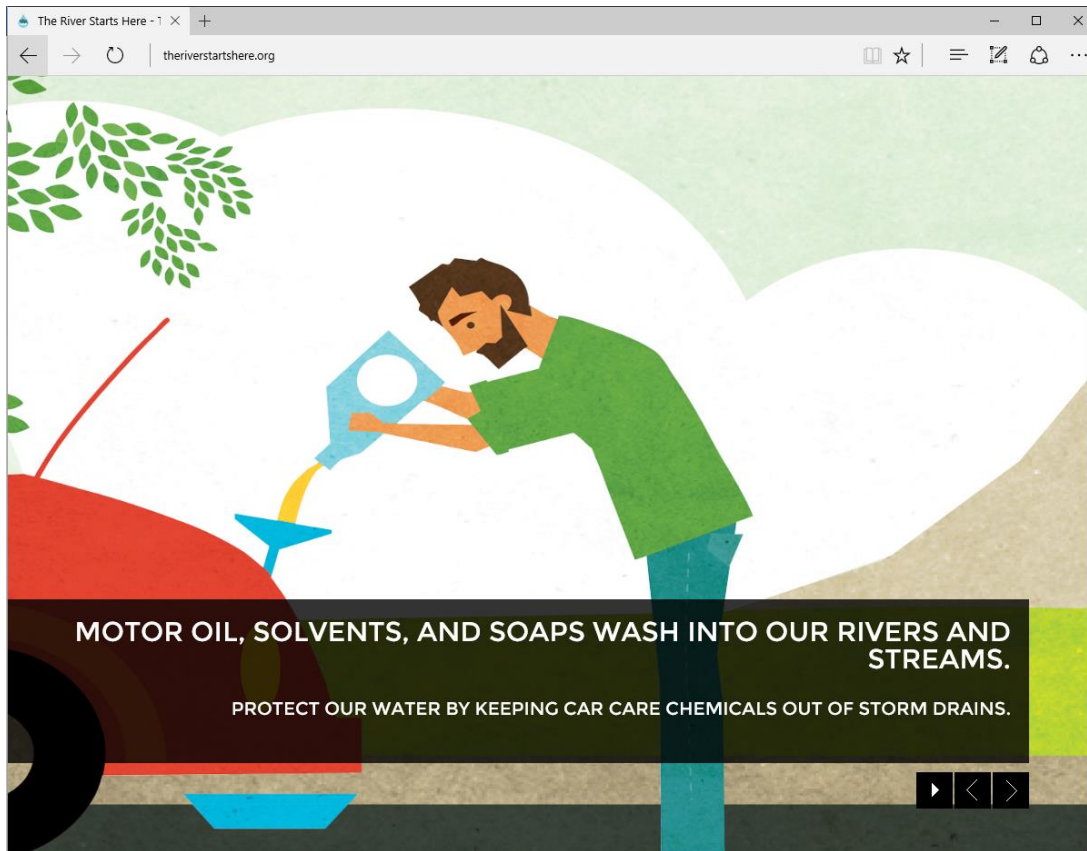
Summary website analytics for the fiscal year are shown below.

Total sessions: 1,194

- **Traffic type**
 - Direct: 36%
 - Organic (search engine): 19%
 - Referral: 45%
- **Bounce rate:** 89%
- **Time on site:** 35 seconds



Figure 4: One of four slider images featured on the TheRiverStartsHere.org



SOCIAL MEDIA

The Coalition resumed posting to its previously established social media channels in May 2016. As in past years, the Coalition concentrated social media activity in the late-spring to summer time period when households in the region have an increased interest in yard and garden activities relevant to surface water quality. Social media messages build on existing conversations and connect with organizations around the region. The Coalition delivers its messages on social media following its seasonal messaging calendar.

Facebook page, Clean Rivers and Streams

A summary of Coalition Facebook account use during the fiscal year is as follows:

- **Reach:** 1,171
- **Total new likes:** 37
- **Lifetime total likes:** 707
- **Posts:** 7



Twitter (@riverstartshere)

A summary of use during the fiscal year is as follows:

- **Followers:** 1,343
- **Following:** 1,325
- **Tweets during the period:** 11

FY 2015-16 BUDGET

Table 2: FY 2015-16 expenditures

Services		Investment
Advertisements		
Pamplin Community Newspapers	30 print ad placements in 14 local newspapers	\$6,266.40
Pamplin Community Newspapers	Digital ads on local news websites	\$1,000.00
Collateral materials		
Thorntown Screenin' ink	144 screen-printed T-shirts	\$1,319.68
BrandNex	5,000, 2" x 3" temporary tattoos	\$311.03
Fastsigns	78.5" x 31.5" retractable banner and stand	\$397.67
Coordination support		
Envirolssues	Meeting facilitation and member coordination, website maintenance, social media authoring	\$6,000
TOTAL		\$15,294.78

OBSERVATIONS

The following observations are based on results of FY 2015-16 activities and suggest future direction the Coalition may take in its mission of educating the public about the impact of stormwater runoff pollution on the health of our rivers and streams.

The Clean Rivers and Streams Forum renewed a collaborative conversation among clean water agencies and non-governmental organizations in the region. Interest in holding additional forums in the future shows promise for expanding membership in the Coalition and the reach of its messages beyond the Portland region. The Forum may also serve as a venue for discussing relevant topics and issues as the Coalition refreshes its strategic plan in the future. Core membership of the expanded Coalition is likely to be those with Clean Water Act requirements for education and outreach.



Social media channels connect Coalition messages with partner organizations, current and community events and topics. The Coalition may choose to expand its social media efforts in the future to provide more posts overall and beyond the spring and summer seasons.

The Coalition website is an easily accessible platform for sharing information with the public and potential future partners. At the start of the 2016-17 fiscal year, the Coalition seeks to increase use of the website with regular posting of new content through feeds for its social media channels. The Coalition may also review options for how to best manage its web presence over a longer time period.

The Coalition continued to use **low cost web advertising** as part of its campaign in FY 2015-16. The Coalition may choose to continue to expand and document the reach of its messages through strategic and targeted web advertising in coming years.

Direct, person-to-person outreach is a powerful way to share information, allows immediate feedback and compliments advertising. The Coalition may consider further integrating Coalition messages and creative assets with individual agency outreach programs to leverage existing investments and further coordinate clean water messaging throughout the region.



APPENDICES

- A. Pamplin Community Newspapers Print Ads
- B. Pamplin Community News Papers Digital Ads
- C. TheRiverStartsHere.org Analytics
- D. Social Media Seasonal Messaging Calendar
- E. 2015-16 Facebook Archive
- F. 2015-16 Twitter Archive

From: Johnson, Gari <GJohnson2@co.clackamas.or.us>
Sent: Tuesday, June 21, 2016 1:47 PM
To: Anne Presentin; Bridger Wineman
Cc: Mike PULLEN; 'Roy IWAI'; Karen DeBaker; MacDonald, Anne; Keri Handaly
Subject: FW: Only 3 days until the MEGA Sale at the Community Newspaper!! It's Back! June 23rd
Attachments: 548111.030216 WES_Garden.pdf; 548112.030216 WES_Car.pdf; 548110.030216 WES_Dog.pdf; Envirolssues - The River Starts Here Web Report.ppt; Digital Mega Sale .pdf

From: kschaub@clackamasreview.com [mailto:kschaub@clackamasreview.com]
Sent: Tuesday, June 21, 2016 12:24 PM
To: Johnson, Gari <GJohnson2@co.clackamas.or.us>
Subject: RE: Only 3 days until the MEGA Sale at the Community Newspaper!! It's Back! June 23rd

Hi Gari,
I have attached the web report for the campaign along with the 3 print ads. The web ads for the month were \$1000. If you will be running your next campaign before the end of August, we have added a web element to the MEGA Sale that would be beneficial for a large group buy. I have attached the flier.

River Starts Here campaign ran in the following papers for 2 weeks. The ad sizes were a 3 x 7. We rotated the 3 attached ads. I have included their circulation numbers.

Portland Tribune	50,000
Beaverton	7,000
Tigard/Tualatin	5,250
Lake Oswego	7,250
West Linn	3,900
Wilsonville	3,500
Forest Grove	5,000
Hillsboro	10,000
Gresham Friday	10,000
Clackamas/OC	17,000
Molalla	3,500

Weekly cost \$3133.20 and that includes full color. The group rate for this buy due to the large number of papers is much better than the MEGA sale so I would not recommend the MEGA for this. On the MEGA sale this campaign would be \$4,603 per week. We took care of you! ☺

Please let me know if you need more information. Sorry you had to ask twice!

Kathy Schaub
Sales Associate
Clackamas Review and Oregon City News
Portland Tribune & Community Newspapers
kschaub@clackamasreview.com
971-204-7779

An illustration of a woman with brown hair, wearing a yellow shirt, blue overalls, and red boots. She is holding a long wooden handle of a shovel. To her right is a large tree with green leaves and a small orange birdhouse with a black circular entrance. Below the tree is a small garden with a brown mound of soil and a small plant with green and yellow flowers. The background is a light green landscape with a white cloud and a blue bird flying in the sky.

THE RIVER STARTS HERE

Yard and garden products wash into our rivers and streams.
Protect our water by using compost and slow-release fertilizer.
Learn more at theriverstartshere.org



THE
RIVER
STARTS
HERE



THE RIVER STARTS HERE

Motor oil, solvents, and soaps wash into our rivers and streams.
Protect our water by keeping car care chemicals out of storm drains.
Learn more at theriverstartshere.org



THE
RIVER
STARTS
HERE



THE RIVER STARTS HERE

Bacteria from uncollected dog waste washes into our rivers and streams. Protect our water by picking up after your pets. Learn more at theriverstartshere.org

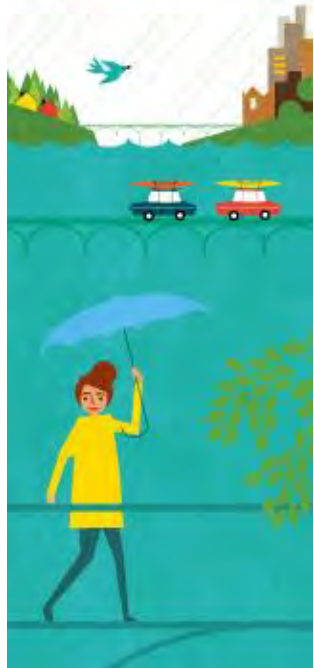


The River Starts Here

March 2016

Local Audience Report

March 2016 Ads



Total Impressions | Total Clicks | Average CTR March 2016

Website	Date	Proposed Impressions	Actual Impressions	% Delivered	Clicks	Click rate
Pamplin Network	3/1/16– 3/31/16	100,000	449,132	449%	792	.17%

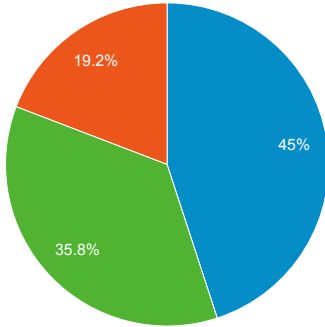
My Dashboard

Jul 1, 2015 - Jun 30, 2016

Filter
16.54% Sessions

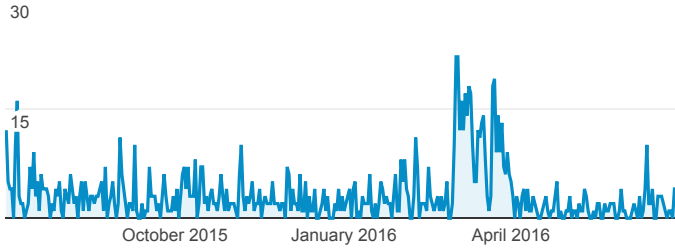
Sessions by Traffic Type

■ referral ■ direct ■ organic



Sessions

● Sessions



Sessions

Filter
1,194
% of Total: 16.54% (7,221)



Avg. Session Duration

Filter
00:00:35
Avg for View: 00:00:22 (60.61%)



Bounce Rate

Filter
88.53%
Avg for View: 95.18% (-6.99%)



Sessions by City

City	Sessions
Portland	326
New York	112
Oregon City	85
Seattle	53
(not set)	42
Boston	35
Hillsboro	31
Gresham	24
San Francisco	21
Beaverton	20

Sessions by Device Category

Device Category	Sessions
desktop	889
mobile	201
tablet	104

Regional Coalition for Clean Rivers and Streams

Seasonal Priority Messages

Updated 5/20/2016

Suggested priority messages for each season

Category	Messaging	Season
Winter		
Stormwater	Storm drain stewardship, "Do you know where your storm drain goes?"	Year-round
Autos	Fix auto fluid leaks promptly	Year-round, but most likely to be washed into drains/waterways during rainy season
Lawn and garden	Plant and care for native plants	Trees November through February. Shrubs, herbs and woody plants in winter and early spring [native plant sales], berries in spring, winter cover in late summer and fall.
All	Report Illicit discharges	Year-round. (DEQ requirement)
Stormwater	Build and maintain rain gardens	Year-round, but focus on November-May for installing native plants.
All	Clean water news, partner events and initiatives	Particularly restoration-related work parties
Spring		
Home	Use natural alternatives to toxic chemicals	Year-round
Lawn and garden	Use slow release, organic and chemical free fertilizers	Year-round, but most common in spring and fall. Most chance of harmful runoff during the rainy season
Lawn and garden	Plant native plants	Trees November through February. Shrubs and woody plants in winter and early spring, berries in spring, winter cover in late summer and fall.
Home	Control erosion	Year-round, but focus on temperate seasons when construction and landscaping are prevalent
Pets	Keep pets on leash at natural areas	Year-round, but focus on temperate seasons
Stormwater	Support, install or care for ecoroofs	Year-round
Stormwater	Install rain barrels	Year-round, with focus on temperate seasons
All	Clean water news and partner events and initiatives	
Summer		
Autos	Wash at car wash or on permeable surface using biodegradable detergent	Spring, summer and fall
Pets	Pick up pet waste at home and on walks	Year-round

Regional Coalition for Clean Rivers and Streams

Seasonal Priority Messages

Updated 5/20/2016

Category	Messaging	Season
Home	Control pests without chemicals	Year-round but focused on temperate seasons when people do yard work
All	Report Illicit discharges	Year-round. (DEQ requirement)
Lawn and garden	Water efficiently	Dry season. July - September
Lawn and garden	Reduce lawn area with native plantings	Dry season. July - September to avoid soil erosion
Lawn and garden	Mulch lawn clippings and yard waste	Year-round with focus on March through September
Pets	Keep pets on leash and on paths when visiting natural areas	Year-round with focus on March through September
All	Clean water news and partner events and initiatives	
Fall		
Lawn and garden	Use slow release, organic and chemical free fertilizers	Year-round, but most common in spring and fall. Most chance of harmful runoff during the rainy season.
Home	Dispose of hazardous waste safely	Year-round.
Stormwater	Storm drain stewardship, "Do you know where your storm drain goes?"	Year-round. Fall focus on leaf management.
Home	Prevent roof moss and remove mechanically	Year-round, with focus on spring through fall
Stormwater	Remove impervious surfaces	Year-round, with focus on spring through fall
Stormwater	Disconnect downspouts	Year-round, with focus on spring through fall
All	Clean water news and partner events and initiatives	
Additional year-round messages		
Lawn and Garden	Use an EcoBiz certified landscape service	Year-round
Home	Prepare for wet weather by controlling erosion	Year-round, but focus fall through spring when there is greater rainfall
Home	Secure garbage and recycling from wind and animals	Year-round
Autos	Recycle used motor oil	Year-round
Autos	Use an EcoBiz certified auto mechanic	Year-round



Clean Rivers and Streams @cleanrivers

- Home
- About
- Videos
- Likes
- Photos
- Events
- Notes
- Posts
- Manage Tabs

Promote



Liked Message More

+ Add a Button

Status Photo / Video Offer, Event +

Write something...

Clean Rivers and Streams shared Clackamas County, Oregon's post. Published by River Cleaner [?] - 17 hrs -

Nice work to all the paddlers on the Willamette yesterday for the Big Float! Check out folks sporting The River Starts Here tatoos! #TBF6, #TheBigFloat



Clackamas County, Oregon added 3 new photos. 18 hrs - Like Page Clackamas County Water Environment Services' reps attended Human Access Project's The Big Float along the Willamette River yesterday, providing education and ou... See More

7 people reached Boost Post

Like Comment Share

Keri Morin Handaly

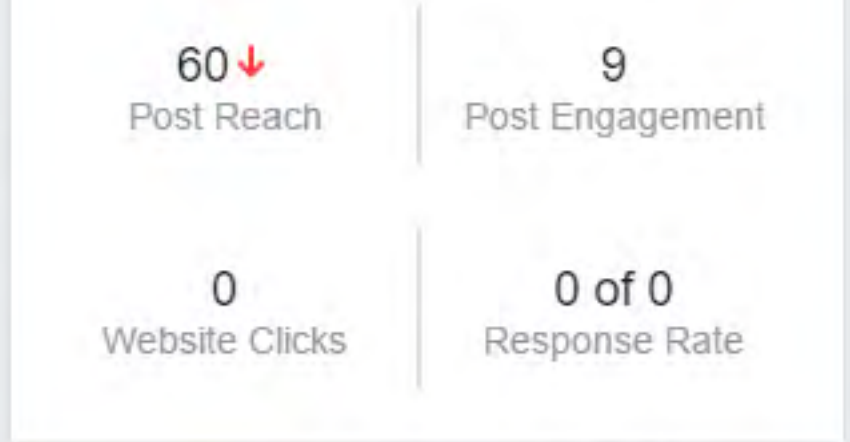
Write a comment...

Clean Rivers and Streams Published by River Cleaner [?] - July 6 at 11:55am -

Ever with there was a handy interactive directory to help you find the least hazardous products and practices for a productive, safe and healthy yard. Look no further... http://www.oregonmetro.gov/.../make-sure-your-garden-product-...



This Week See All



Boost Your Page for \$5 Reach even more people in United States Promote Page

Non-Profit Organization

Search for posts on this Page

0% response rate, day or more to respond Respond faster to turn Chat

707 likes +1 this week

60 post reach this week

See Pages Feed Posts from Pages you've liked as your Page

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ABOUT

Add street address City, State, Zip Save Add phone number Add Hours Promote Website http://theriverstartshere...

PHOTOS



VIDEOS



Grow Smart, Grow Safe

Grow Smart, Grow Safe is a searchable interactive directory available online or in an app that helps you find the least hazardous products and practices for a productive, safe and healthy yard.

OREGONMETRO.GOV

55 people reached

Boost Post

Like Comment Share

Eric Smallacreage

Write a comment...



Clean Rivers and Streams

Published by River Cleaner [?] · June 29 at 11:49am

We love native plants for so many reasons, not least of which being their reduced need for pesticides and fertilizers that can pollute local rivers and streams. This wonderful little guide to native plants for Willamette Valley yards is a great resource for home gardeners.

<http://www.oregonmetro.gov/native-plants-willamette-valley-...>



Native plants for Willamette Valley yards booklet

A regional guide to native plants. Download pdf 7.06 MB Last Published April 01, 2014 Support wildlife, protect waterways, save time and moneyThe native plants for Willamette Valley yards booklet includes 140 plants primarily native to the...

OREGONMETRO.GOV

125 people reached

Boost Post

Like Comment Share

Eric Smallacreage and Anne MacDonald

1 share

Write a comment...



Clean Rivers and Streams added 4 new photos.

Published by River Cleaner [?] · June 23 at 4:12pm

We had a great time talking to folks at OMSI about how we all can help protect water quality. What Goes in Your Garden Goes in the River!



3 people reached

Boost Post

Like Comment Share



UPCOMING EVENTS



Create events for your Page.

Create Event

VISITOR POSTS



Deanna Munson

May 21, 2015 at 6:23pm

so do you guys have any "authority" to protect 14.5 acre creekway ha...Continue Reading

Like Comment Message



Kenneth Vest

February 18, 2015 at 8:30am

Check out what I do for a living.... Might not pay very much, but ensures our children have a healthy future...God bless

Like Comment Message



Sönmez Yanardağ

February 1, 2015 at 12:55am

For the Clean Seas
<https://www.facebook.com/pages/Lets-do-itM...>
See More

Like Comment Message



Let's do it, Mediterranean Cartoon ...
Community

314 like this

Like Save Message

Clean Rivers and Streams added an event.
June 14 at 3:00pm · 🌐



JUN 21 **OMSI Science Pub: Debunking River M..**
Tue 6 PM · Portland, OR
1 person interested · 1 person going ★ Interested

👍 Like 💬 Comment ➦ Share

Clean Rivers and Streams Visit our table at the OMSI Science Pub to learn about what local agencies are doing to protect local rivers and streams and how you can help. Pick up a temporary tattoo for the kiddos!
Like · Reply · Commented on by River Cleaner [?] · June 14 at 3:06pm

Clean Rivers and Streams
Published by River Cleaner [?] · June 9 · 🌐

Ever wonder how you can protect water quality while washing your car? Check out the City of Lake Oswego's video to learn how to save water and prevent harmful runoff to rivers and streams.



Car Washing Video | City of Lake Oswego Oregon Official Website
Did you know that washing your car in the driveway can use up to 140 gallons of water? Washing your car properly saves water. And water quality.
CI.OSWEGO.OR.US | BY ANONYMOUS

7 people reached Boost Post

👍 Like 💬 Comment ➦ Share

Clean Rivers and Streams
Published by River Cleaner [?] · June 6 · 🌐

It can be hard to tell the best techniques and products to use around the home and garden that protect rivers and streams. Grow Smart, Grow Safe is a handy app for choosing healthier garden products.



Grow Smart, Grow Safe, A Consumer Guide to Lawn and Garden Products
Learn to control garden pests with natural methods and safer products.
GROWSMARTGROWSAFE.ORG

59 people reached Boost Post

Clean Rivers and Streams shared Clark County Green's photo.

Published by River Cleaner [?] - May 25 -

Happy gardening this Memorial Day weekend! Clark County shared some summer yard care tips we can all use to keep fertilizer and debris out of rivers and streams.



Clark County Green May 24 - Like Page

As we are heading closer to summer, some things to keep in mind...

68 people reached Boost Post

Like Comment Share

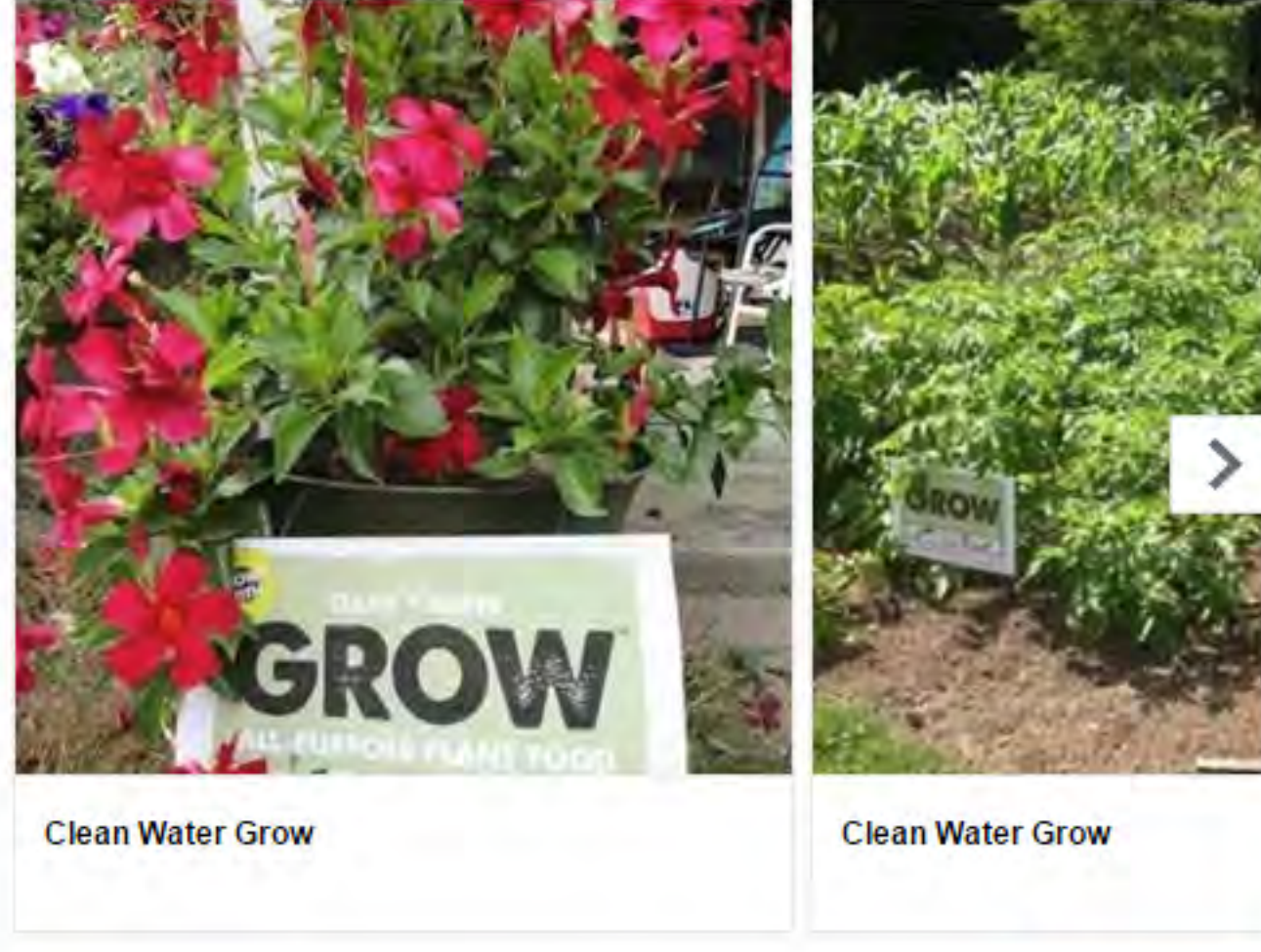
Emily MacGregor Chronological

Pacific Energy Group Great tips!
Like · Reply · Message · May 25 at 9:30am

Write a comment...

Clean Rivers and Streams Published by River Cleaner [?] - May 20 -

River-safe yard care is better for people, pets and wildlife. If you need to fertilize, a slow-release fertilizer that gently supplies nutrients as the plants can use them is less likely to wash down the storm drain and into rivers and streams. Clean Water Grow is one example. It keeps your plants green and the river clean. <http://www.cleanwatergrow.com/>



58 people reached Boost Post

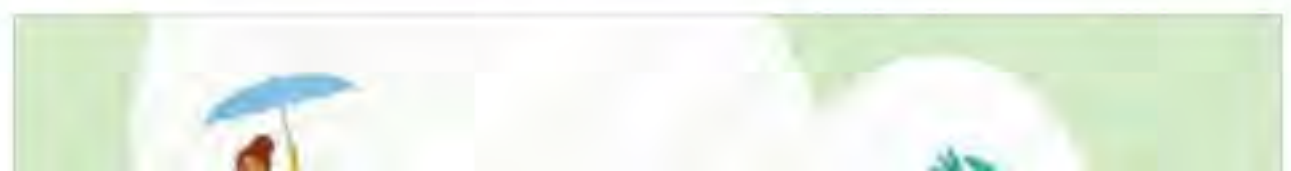
Like Comment Share

Phyllis Love

Write a comment...

Clean Rivers and Streams Published by Bridger Wineman [?] - June 19, 2015 -

We're launching The River Starts Here, a new effort to help protect and improve our rivers and streams through community awareness. Check out our new website, theriverstartshere.org, plus see us in newspapers and on the web!





TWEETS 649 FOLLOWING 1,325 FOLLOWERS 1,343 LIKES 7 LISTS 5

Edit profile

TheRiverStartsHere

@RiverStartsHere

The River Starts Here is dedicated to educating the public about the impact of stormwater runoff pollution on the health of our rivers and streams

Portland/Vancouver Metro Area

theriverstartshere.org

Joined April 2009

15 Photos and videos



Tweets Tweets & replies Media

TheRiverStartsHere @RiverStartsHere · 17h
Nice work paddlers for our rivers and streams @TheBigFloat! ...and great tattoos! #TBF6, #TheBigFloat



Clackamas County, OR @clackamascounty

#ClackCo WES @RiverStartsHere temp tattoos a BIG hit at #TheBigFloat bit.ly/29tKlWA @TheBigFloat

Retweet Like 1

TheRiverStartsHere @RiverStartsHere · Jul 7
Bacteria from dog waste washes into our rivers and streams. You can protect our water by picking up after your pets. theriverstartshere.org

Retweet Like

TheRiverStartsHere @RiverStartsHere · Jul 5
Did you know stormwater runoff (from our homes, cars and gardens) is now the #1 source of water pollution? ow.ly/pafh301RbKR

Retweet Like

You Retweeted



US Fish and Wildlife @USFWS · Jun 27

Plastics in the ocean impact wildlife, how to be part of the solution: bit.ly/28ZdFCi

NOAA Marine Debris



Retweet 188 Like 166

You Retweeted



Clean Water Services @CleanWaterNews · Jun 28

This method helps us reach our planting goals in areas that are difficult to get to on foot.

BC Water News @BCWaterNews

Oregon utility deploys tree-planting drones to help lower temperature of waterways @MarketWatch ow.ly/NZEw301wXDP

Retweet 1 Like

TheRiverStartsHere @RiverStartsHere · Jun 23

Your Tweet activity

Your Tweets earned **1,481 impressions** over the last **28 days**

[View your top Tweets](#)

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Demamufacturer @Demanuf...

Follow



Stormwater MD @Stormwat...

Followed by StormwaterCOM...

Follow

[Find friends](#)

Trends · Change

Bernie Sanders
146K Tweets

#PrimeDay
@theCWPInc is Tweeting about this

#cheapoairchat

#FADA
6,306 Tweets

#TuesdayMotivation
23.5K Tweets

#TravelTuesday
14.9K Tweets

#SubCommTech

Secretary Clinton
6,948 Tweets

#abcDrBchat

#CowAppreciationDay
15.2K Tweets

We had fun @OMSI talking to folks about what we can do to protect water quality. The river starts with all of us!



← ↻ ❤️ 📊 ⋮

TheRiverStartsHere @RiverStartsHere · Jun 21

We can all help with small things like litter to make a big collective difference.

East Multnomah SWCD @EMSWCD

Street litter ends up in our streams, in Willamette & Columbia Rivers, eventually in the ocean. A pledge to help: twitter.com/americanrivers...

← ↻ ❤️ 1 📊 ⋮

You Retweeted

TheRiverStartsHere @RiverStartsHere · Jun 15

Visit us at OMSI Science Pub 6/21. We have info to protect waterways, & cool temp. tatoos! omsi.edu/calendar/scien...



← ↻ 4 ❤️ 6 📊 ⋮

TheRiverStartsHere @RiverStartsHere · Jun 16

Creatures large & small indicate the health of our watersheds. @JohnsonCreekWCVolunteers are surveying dragonflies. jwc.org/events/dragonf...

← ↻ ❤️ 📊 ⋮

TheRiverStartsHere @RiverStartsHere · Jun 7

Making your garden friendly to native pollinators can also help limit harmful run off to our rivers and streams



US Fish and Wildlife @USFWS

How to build a garden for bees, butterflies and other #pollinators: 1.usa.gov/1NyMbEX



← ↻ 1 ❤️ 1 📊 ⋮



TheRiverStartsHere @RiverStartsHere · Jun 6

Healthy plants help protect water quality. Learn more at tomorrow's Urban Weeds workshop by the @EMSWCD emswcd.org/workshops-and-...

← ↻ ❤️ 1 📊 ⋮



TheRiverStartsHere @RiverStartsHere · May 31

Enjoy the splendor of our native plants and find a place for some in your yard or garden: portlandoregon.gov/bes/article/40...

← ↻ ❤️ 📊 ⋮



TheRiverStartsHere @RiverStartsHere · May 25

Looking for a landscaper? EcoBiz Certified Landscapers use river-safe techniques. Finding one is easy bit.ly/1ON3ehw

← ↻ ❤️ 📊 ⋮



TheRiverStartsHere @RiverStartsHere · May 20

Picking up after Spot keeps neighbors at bay, the lawn fit for play, & won't add bacteria to rivers and streams bit.ly/1YHbAwR

← ↻ ❤️ 📊 ⋮

👤 You followed Metro Naturalists, Bob Johnson, Gail Epping Overholt and 185 others



Metro Naturalists
@MetroNaturalist
Metro's expert naturalists connect you with nature happenings across the Portland region.

⚙️ Following



Bob Johnson 🔒
@RiverCubes FOLLOWS YOU
philosopher by disposition & training, fine art fabricator & installer by profession, dogooding troublemaker by vocation!

⚙️ Following



TheRiverStartsHere @RiverStartsHere · 19 Jun 2015

Check out our new website, TheRiverStartsHere.org. Protecting rivers & streams starts with you and me. [#theRiverStartsHere](https://twitter.com/riverstarts/hashtag/theRiverStartsHere)

← ↻ 3 ❤️ 7 📊 ⋮



TheRiverStartsHere @RiverStartsHere · 28 May 2015

Join the Friends of Mt Tabor restoring upland habitat to encourage native species, prevent erosion & run-off on Sat. ow.ly/NrIhF

← ↻ ❤️ 1 📊 ⋮



TheRiverStartsHere @RiverStartsHere · 26 May 2015

We have an abundance of wonderful waterways worthy of care. It's good to get to know them.

Tualatin Riverkeeper @TualatinRiver
Tualatin River Water Trail project paddles onward - goo.gl/alerts/xQqQ
#GoogleAlerts

← ↻ 1 ❤️ 2 📊 ⋮



TheRiverStartsHere @RiverStartsHere · 22 May 2015

There's still space for @EMSWCD's 5/30 workshop on how to build your own rain garden to manage stormwater naturally bit.ly/1.JH9d7X