October 31, 2014

Lisa R. Cox
Oregon Department of Environmental Quality
Environmental Solutions Division
811 SW 6th Ave
Portland, OR 97204

SUBJECT: NPDES MS4 Permit Annual Report 2014

Dear Ms. Cox:

I am pleased to submit the enclosed National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System (NPDES MS4) Phase I Permit – Annual Report 2014. 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. This year the Annual Report submittal also includes four additional elements:

- Stormwater Education and Outreach Effectiveness Evaluation (Appendix A of Annual Report)
- TMDL and 303(d) Pollutant Reduction Analysis
- Hydromodification Assessment
- Stormwater Retrofit Strategy

Electronic downloads can be found at multco.us/roads/stormwater-management-plan. If you have any questions concerning this report, please contact me at (503) 988-5050 extension 28031, or by email at roy.iwai@multco.us.

Sincerely,

Roy Iwai
Water Resources Specialist

Enclosures: (4)

Multnomah County NPDES MS4 Phase I Permit
Stormwater Management Program

Annual Report 2014
Permit year 19

Submitted to:
Oregon Department of Environmental Quality
November 2014

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

(This page left intentionally blank)

Table of Contents

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 19 (Fiscal year 2014: July 1, 2013 – June 30, 2014).

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).

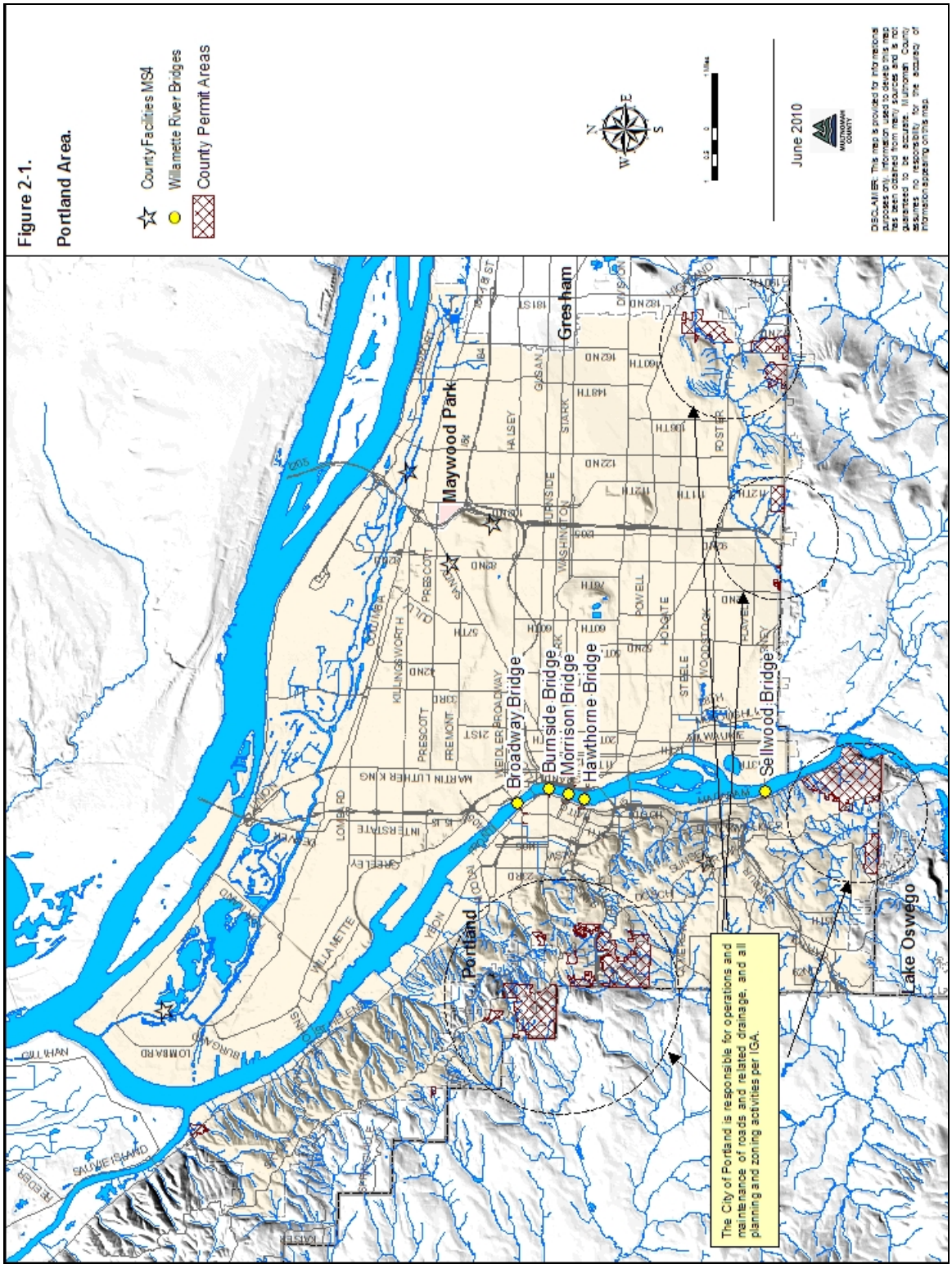


Figure 2-1.
Portland Area.
County Facilities MS4
Willamette River Bridges
County Permit Areas
June 2010
Gresham
Maywood Park
Portland
Lake Oswego
Broadway Bridge
Burnside Bridge
Morrison Bridge
Hawthorne Bridge
Sellwood Bridge
The City of Portland is responsible for operations and maintenance of roads and related drainage, and all planning and zoning activities per IGA.

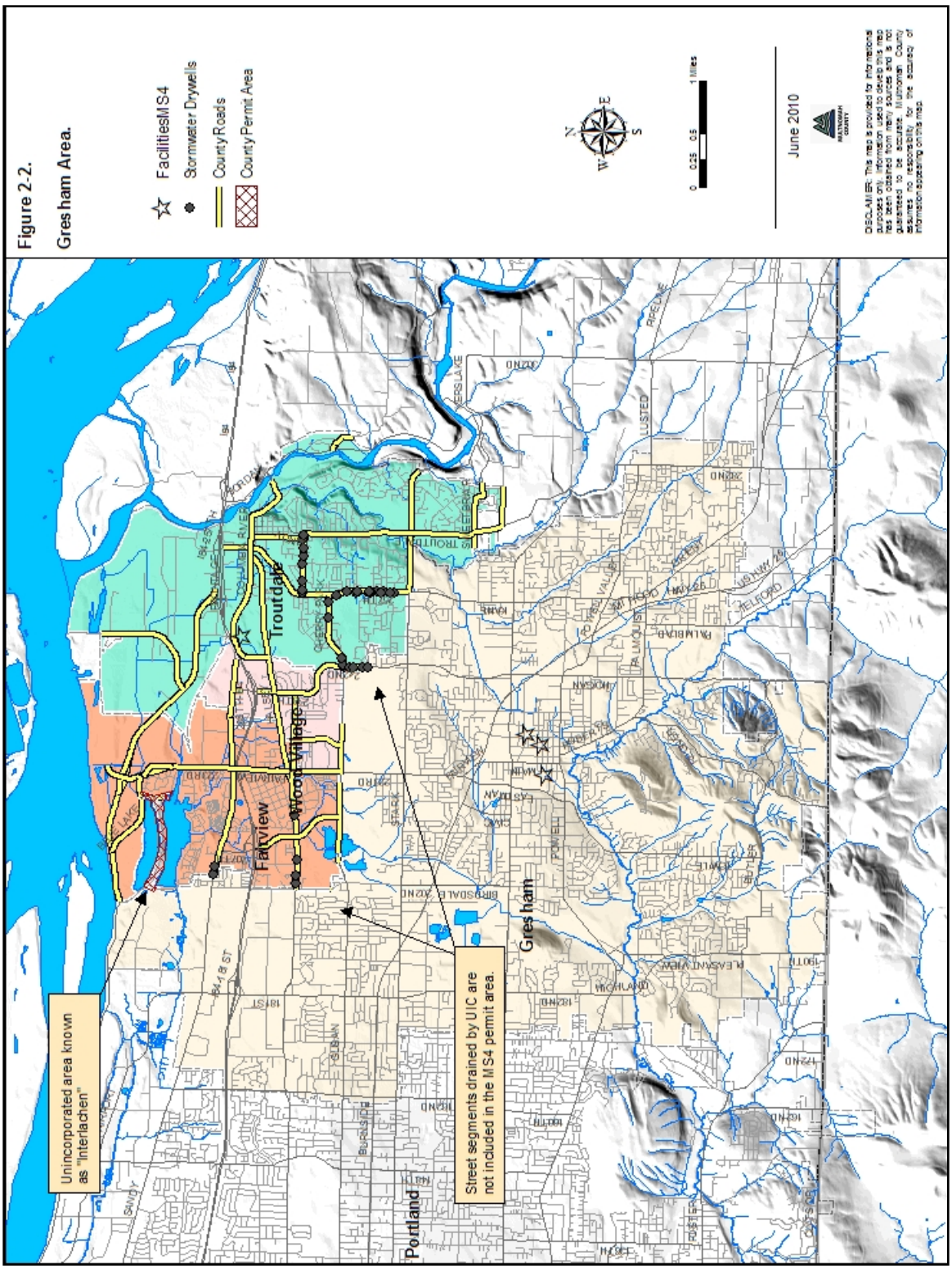


Figure 2-2.
Gresham Area.
FacilitiesMS4
Stormwater Drywells
CountyRoads
CountyPermitArea
June 2010
Unincorporated area known as "Interladen"
Street segments drained by UIC are not included in the MS4 permit area.
Troutdale
Fairview
Wood Village
Gresham
Portland

Reporting requirements

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

Permit reporting requirement	*Annual report section*
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 NDPES 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 and 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.*

BMP	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
PI-1 Participate in Regional Public Education Efforts	Provide County representative to attend the *Regional Coalition for Clean Rivers and Streams* (RCCRS) meetings. Plan and Implement public education campaign promoting behaviors that improve water quality.	Help develop and implement RCCRS annual strategy to promote behavior change through the RCCRS website, television, radio and social media. Evaluate education campaign effectiveness by November 1, 2014.	RCCRS continued to contract with EviroIssues to manage and outreach campaign and help develop a new strategic plan for 2014-2015. Because a portion of the 2013-2014 budget will be used to support creative work outlined in the strategic plan, the group developed a smaller more focused education campaign using existing collateral. RCCRS also paid to support the KOIN TV "Do the Right Thing – Clean Water Tips" program which promotes on broadcast TV and web. Additionally, the County's watershed model was used at the Children's Clean Water Festival during the permit term (3/11/2014).	The County added additional staff time to work on the RCCRS Strategic Plan, and to craft new campaign strategies (9/2013 – 6/2014)
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 attended monthly.	No change
PI-3 Distribute Public Education Information Regarding Stormwater	Make brochures and other educational materials from Soil & Water Conservation Districts and Watershed Councils available at the planning office. Ensure that public education materials are current and cover relevant topics.	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. 105 brochures on various topics from septic maintenance, riparian management and livestock care were taken from the office.	No change

PI-4 Conduct Training and Education for County Personnel	Send a representative(s) to water quality conferences when feasible. Share information learned in training with other staff. 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.	Conduct a minimum of one staff training session a year.	Road crew trainings include: Vactor training (11/2013), confined space training (9/2013). WQ staff attended the regional Urban Ecology symposium (2/2014), ACWA conference (7/2013) and ACWA Stormwater Summit (5/2014). Vegetation staff continued to participate in regular meetings of the Cooperative Weed Management Areas group.	No change
PI-5 Implement the Adopt-a-Road Program	Develop a strategy to promote the adopt-a-road program. Track road segments where volunteer roadside litter removal and clean-up is performed through participation in County Adopt-A-Road programs.	Continue to advertise and support the adopt-a-road program as interest exists.	Adopt-a-road program is promoted though a County webpage and brochures at various County offices. Thirteen groups are active in the NPDES area. 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.	No change
PI-6 Maintain Signage to Protect Water Quality	Determine whether any areas need to be marked or re-marked and provide staff and materials to carry this out. Maintain signs in right-of-way promoting watershed awareness, as requested by watershed councils.	Inspect drain markers and signage once per permit term at all catch basins and stream crossings in the permit area.	GIS mapping of catch basins were completed with drain marker inspection in 2012.	No change
PI-7 Provide Opportunities for Public Involvement During the CIP Process	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.	Ensure opportunities for public participation in the CIP update process through public meetings. Ensure that public comment period is established for permit renewal.	With the last biennial CIP Update completed in FY 13, work in FY 14 was mainly focused on the annually budget update as well as the kickoff of the FY 14 Bridge CIP update. The CIP is The Program 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 CIP 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. An update of the Bridge CIP projects also kicked off in FY 2014 that included public outreach such as open	No change

			houses, stakeholder outreach and distribution of a survey. The public involvement program for the Sellwood Bridge project also continues from previous years.	
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 year.	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.*

BMP	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
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 October 2012. No changes were proposed in 2014	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. Data of catch basin fullness were captured from the previous year was analyzed and presented in a poster presented at the ACWA Stormwater Summit (5/2014). Catch basin cleaning for spring 2014 was delayed to summer 2014 as a result of work from the Gresham road maintenance IGA that needed to be completed before that agreement was terminated at the end of the fiscal year. Catch basin fullness data analysis is forthcoming. Parking lot CBs maintained by County Facilities were inspected and cleaned on annual basis.	The road maintenance IGA with Gresham was last remaining part of the Gresham road transfer. With the termination of the agreement June 30, several staff positions and equipment were also transferred to Gresham, hence a reduced County workforce and resources. Catch basin cleaning efficiency program continues to provide useful information.

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. The next step in the program will be to evaluate catch basin fullness during cleaning intervals will allow us to associate sweeping with catch basin cleaning frequency.	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 approximately six freezing events in FY14 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 FY14. Stormfilters on County bridges were inspected and replaced in FY14. County Facilities maintains several Vortex units which were cleaned in FY13.	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.*

BMP	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
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. No spill response was conducted in the permit area.	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	No activity in permit area.	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	Construction on three road projects (Wood Village Blvd, Halsey St, and the Troutdale Sidewalk projects) had erosion control in place during inspections. Sellwood Bridge construction project with EPA in May 2013 during the NPDES program audit and discussed construction inspection at length with County inspectors. The project continues.	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 inspect and maintain the bridge restroom facility holding tanks on a quarterly basis. 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 April 2014. No visible signs of illicit discharge were observed.	Outfall inspection list has been updated in the IDDE plan to reflect the high risk potential outfalls.

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.*

BMP Description	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
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.	One Grading and Erosion Control permit was issued for a vacant lot in Interlachen during the permit year. The County contracts City of Troutdale to coordinate all erosion and building permit inspections; however, in this instance coordination for the initial erosion control site visit did not occur.	Further training with new Troutdale inspectors is needed for future permits.
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.	A Stormwater Certificate was submitted with the Grading and Erosion Control permit in Interlachen. Stormwater will be handled on site near the top of the road.	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.*

BMP	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
STR-1 Address Water Quality with New Capital or Roadway Improvement Projects	Develop criteria and strategy for when stormwater treatment will be incorporated into public projects. 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.	Identify strategy or criteria used to determine when stormwater quality treatment will be incorporated into Capital Improvement Projects by November 1, 2013.	The County submitted criteria for when stormwater treatment is incorporated into public projects to DEQ in 2013. Based on that criteria, the Troutdale Rd sidewalk project did not include stormwater treatment because the small amount of new impervious area did not add pollutants. Wood Village Blvd project was conceived as a phase of the Arata Rd capital project. Stormwater treatment for existing impervious area on Arata Rd will offset new impervious area on Wood Village Blvd.	No change
STR-2 Retrofit Existing Facilities for Water Quality Benefit	Include consideration of stormwater treatment for water quality purposes in capital projects to reduce pollutants to the maximum extent practicable. Conduct a hydromodification assessment and develop a strategy to identify and prioritize potential retrofit projects by November 1, 2014.	Identify one retrofit project by November 1, 2013. Develop hydromodification and retrofit strategy by November 1, 2014.	Halsey St project was a second phase of the project which tied to an existing stormfilter vault. Hydromodification Assessment and Stormwater Retrofit Strategy will be submitted to DEQ on November 1, 2014.	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. The County owns and maintains arterial roads within several cities' jurisdiction, and points where our stormwater infrastructure is connected to another jurisdiction's pipes were identified.	Added limited duration staff to complete GIS mapping of infrastructure. Next step will be to establish a multi-jurisdictional group to share data updates.

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.*

BMP	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
NS-1 Conduct Vegetation Management Activities	Follow RMOM and IVM procedures. Maintain current Oregon Department of Agriculture (ODA) certifications for chemical applicators. Review and update integrated vegetation management practices (IVM) annually.	Review RMOM vegetation activities and the Integrated Vegetation Management Program (IVM) annually.	The number of stormwater facilities given in the Road Services IVM was updated.	No change
NS-2 Specify Native Vegetation in ROW and Permitted Projects	Review the current contract specifications for landscaping in the right-of-way, and update as needed. Promote the use of native vegetation and develop contract specifications for landscaping. Condition plan approvals with invasive plants removal, if needed. Ensure contract specifications are followed which require certain landscaping materials and placement.	Inspect 100% of project sites for landscaping specifications.	No vegetation was required for the Right of Way for the one site developed in Interlachen.	No change

PM – Program Management

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

BMP	*Tasks*	*Measurable Goal*	*Status*	*Adaptive Management*
PM-1 Stormwater Program Management	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. Review each BMP file annually. Prepare an annual report to demonstrate the County's compliance with requirements. Submit to DEQ.	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. All deadlines are met for 2014.	No change
PM-3 Maintain Environmental Management Database	Pilot new GPS and onboard computer technology by July 2011. Develop GIS or other mapping technology to sync with GPS system by July 2012. Develop SAP work orders and tracking to integrate with GIS by July 2013.	Ensure tasks are completed by dates shown.	Work orders for Road Maintenance are captured in SAP work order system. GIS is used to capture catch basin cleaning and sweeping data.	(See OM-2)

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 NDPES 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 2014 and provides the anticipated budget for Fiscal Year 2015.

Program Area	*FY 2014 actual*	*FY 2015 budget*
Water Quality Program[1]	$219,830	$162,060
Asset Management[2]	$7,200	$7,200
Gresham area		
• Road Maintenance[3]	$554,116*	$555,000
• Road Engineering[3]	$210,655	$214,960
• Land Use & Transportation Planning	$4,220	$4,000
Portland Area		
• Bridge Maintenance/Operations	$14,943	$28,861
• Bridge Engineering[4]	$94,033,759	$126,238,948
• Road Maintenance IGA	$88,500	$100,000
• Road Engineering[5]	$10,845	$11,025
• Transportation Planning	$1,580	$2,000

[1]*Figure 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 stormwatermapping.*

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

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

[4] *The 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.*

[5]*Estimate of the amount of time spent on water quality issues in Portland area right-of-way.*

**This value reflects changes in budget coding where zone designations within a work district were eliminated, thus the value includes work outside the NPDES area.*

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 will commence in fall of 2014.

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.

Monitoring location	*Sampling frequency*	*Parameters*
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 (NO3) Ammonia nitrogen (NH3-N) Total phosphorus (TP) Ortho-phosphorus (O-PO4) 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)
W13G238-08	BCI1	7/30/2013	10:50	0.00	10.65	7.26	16	194.2	3.01	**2**	3	25	**2**	1500	34	300	78	87.5
W13J224-10	BCI1	10/29/2013	15:20	0.00	13.14	7.4	8.4	96.2	5.1	**2**	**2**	**20**	**2**	1100	29	310	67	62
W14A201-10	BCI1	1/27/2014	13:40	0.00	15.26	7.41	2.5	85.6	3.48	**2**	**2**	**20**	NM	260	**20**	220	42	50.4
W14D249-10	BCI1	4/29/2014	13:40	0.00	10.54	7.34	13.4	91.9	5.79	**2**	**2**	**20**	NM	1900	**20**	210	38	41.4
W13G238-09	BCI2	7/30/2013	12:40	0.00	10.96	7.24	17.9	122.8	2.73	**2**	**2**	37	**12.8**	360	54	590	91	45.5
W13J224-11	BCI2	10/29/2013	14:10	0.00	13.61	7.15	6	71.9	2.48	**2**	**2**	**20**	**2**	1400	**20**	340	56	43.5
W14A201-11	BCI2	1/27/2014	12:45	0.00	14.91	7.02	2.3	59.2	4.01	**2**	**2**	**20**	NM	310	**20**	220	31	31.2
W14D249-11	BCI2	4/29/2014	12:45	0.00	12.65	6.77	12.8	71.3	5.86	**2**	**2**	**20**	NM	2300	**20**	260	32	30.7

Sample ID	Site ID	Date	Time	Hg-Total (ug/L)	Cu-Total (µg/L)	Pb-Total (µg/L)	Zn-Total (µg/L)	Cu-Diss (µg/L)	Pb-Diss (µg/L)	Zn-Diss (µg/L)	E. coli (MPN/100ml)
W13G238-08	BCI1	7/30/2013	10:50	**0.0020**	0.983	**0.100**	1.76	0.72	**0.10**	1.13	75
W13J224-10	BCI1	10/29/2013	15:20	**0.0020**	1.280	**0.100**	5.10	1.16	**0.10**	4.31	41
W14A201-10	BCI1	1/27/2014	13:40	**0.0020**	0.584	**0.100**	2.17	0.517	**0.10**	1.49	10
W14D249-10	BCI1	4/29/2014	13:40	0.0013	0.865	0.106	6.29	0.633	**0.10**	2.82	41
W13G238-09	BCI2	7/30/2013	12:40	**0.0020**	1.500	**0.100**	0.76	1.32	**0.10**	**0.5**	180
W13J224-11	BCI2	10/29/2013	14:10	**0.0020**	2.070	**0.100**	1.35	1.83	**0.10**	1.26	580
W14A201-11	BCI2	1/27/2014	12:45	**0.0020**	0.500	**0.100**	0.86	0.455	**0.10**	0.568	10
W14D249-11	BCI2	4/29/2014	12:45	0.0011	0.646	**0.100**	1.05	0.468	**0.10**	0.595	85

***Bold** indicates values below the minimum reporting limit*

Macroinvertebrate Site	B-IBI score
BCI1	22
BCI2	20

REGIONAL COALITION FOR CLEAN RIVERS AND STREAMS

FISCAL YEAR 2013-2014 ANNUAL REPORT

FINAL
SEPTEMBER 17, 2014

PREPARED BY:

envirolssues

FY 2013-14 Overview

The Regional Coalition for Clean Rivers and Streams (Coalition) continued its work of providing coordinated messaging to target behaviors from residential sources linked to stormwater pollution across the Portland-Vancouver region. Efforts in FY 2013-14 focused on creating a strategic plan to guide future Coalition activities and designing and implementing a focused annual advertising campaign.

The strategic plan defines three goals for the Coalition which include: 1) maintaining a functioning Coalition, 2) developing and adapting creative products to fulfill the Coalition's mission, and 3) practicing adaptive management. Steps to achieve these goals were developed along with a campaign concept, *The River Starts Here*, which will serve as a starting point for new creative collateral to connect with audiences, encourage interaction and motivate positive behaviors. The Coalition is considering additional creative campaign approaches, in line with the strategic plan, that will result in new products for FY 2014-15.

Because a portion of the FY 2013-14 budget will be used to support creative work outlined in the strategic plan, the Coalition sustained a smaller, more focused education campaign using existing collateral and messaging. The Coalition's FY 2013-14 campaign included maintaining its existing website and social media accounts and placing ads on Portland-area radio stations and on Facebook. Facebook ads in particular connect seamlessly with the Coalition website which serves as the primary destination for the Coalition's audience. Total advertising expenditures for FY 2013-14 were nearly $13,000, compared to roughly $56,800 for FY 2012-13. Over 58 million impressions are reported and the average cost of impressions for both radio and web advertisements decreased substantially from the previous year. The Coalition's social media following continued to grow with an increase of over 100 Twitter followers and over 500 new Facebook likes.

Looking ahead to FY 2014-15, development and implementation of a new creative campaign will enhance education and outreach and the ability to measure effectiveness. For example, web analytics indicate that many people are using mobile devices many of which do not render the existing graphics. Web analytics also show that many people are visiting the site once for a short period. Observations from the 2013-14 campaign will help further inform creation of new products and messaging for 2014-15 as well as to set targets for evaluation.

Background

The Coalition is composed of agency partners that leverage collective resources to conduct outreach to communities across the region with common stormwater information. Coalition activities complement individual agency efforts to raise awareness about stormwater runoff and affect behavior change to prevent pollution and protect regional surface water quality. These activities support commitments relative to permits with the states under the federal Clean Water Act (administered by the Oregon Department of Environmental Quality and Washington State Department of Ecology), including Total Maximum Daily Load and Municipal Separated Storm Sewer System programs, as well as compliance with the Endangered Species Act.

Coalition members have diverse roles in conducting regional stormwater education and outreach. Clean Water Services, City of Portland, Water Environment Services and Clark County each have developed specific outreach programs for their jurisdictions. Multnomah County has more limited permit requirements related to its roads and bridges.

This report includes the following sections: regional audience; FY 2013-14 campaign goals, objectives, approach and reach; FY 2013-14 Coalition budget; and observations and recommendations. Additional supporting materials are referenced to throughout and contained in an appendix.

REGIONAL AUDIENCE

The Coalition targets several 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. This audience typically consists of homeowners, aged 35-55. 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 water quality. Messages encourage audiences to learn more about the many ways they can contribute at the household level. The website is a clearinghouse of information, organized by topic, intended to provide further instruction, technical detail and description of the effective alternatives available to consumers.

Messages used in previous campaigns were applied to the FY 2013-14 campaign, including radio ad scripts (Appendix C) and Facebook ads (Appendix E).

FY 2013-14 ACTIVITIES AND RESULTS

The Coalition's primary goal is to engage a larger audience in preventing nonpoint source surface water pollution through broadcast media and other region-wide communication efforts. Coalition members determined the need to develop a strategic plan to help adapt their practice and guide their short- and long-term priorities. Members identified goals that will help sustain their collaborative work, as well as adapt their outreach and education methods to better meet a changing communications landscape. As a result of the strategic plan, the Coalition is considering creative campaign approaches that will result in new products for FY 2014-15. A portion of the FY 2013-14 budget will be used to support this creative work. As a result, the Coalition sustained a smaller, more focused education campaign.

STRATEGIC PLAN

The Coalition adopted a mission statement to guide decision-making, which states:

> *The Regional Coalition for Clean Rivers and Streams is a partnership of organizations that collaborate across the Portland-Vancouver region to improve watershed health. The Coalition uses broad-based communication tools to complement the ongoing work of its members and partners to change household behaviors, curb polluted runoff and better connect people with the environments in which they live and play.*

Three goals support the Coalition's mission:

Goal 1: Maintain a functioning Coalition

Coalition members recognized the need for potential changes to their operational model and membership opportunities to ensure sustainable funding for future campaigns. The current five-year inter-governmental

agreement between Coalition partners will expire in 2015. Changes to the Coalition's governance structure, including membership and decision-making, may better facilitate large and smaller partners' contributions to future campaigns or other projects.

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

Audiences and the media landscape are changing, and the Coalition strives to adapt to these changes to educate and motivate audiences in a relevant and effective manner. The Coalition's last major investment in creative products was completed approximately five years ago. Since this period, best practices in messaging, audience targeting and performance measurement have evolved. The strategic plan calls for regularly updating assumptions around key audiences and the best messages to reach them. Periodic investments in new creative products and a campaign plan may require that current-year campaigns are more limited. However, these investments help ensure that products are aligned with current best practices.

Goal 3: Practice adaptive management

The Coalition is committed to measuring the effectiveness of its work and using these results to inform next steps. The strategic plan calls for the identification of a set of performance measures, to be tied to the campaign and integrated to the product to the greatest degree possible (e.g. web analytics or social media metrics).

The Coalition's strategic plan is a living document, to be reviewed and updated periodically. A copy of the most recent Coalition strategic plan is attached as Appendix A.

THE RIVER STARTS HERE CAMPAIGN CONCEPT

The Coalition developed *The River Starts Here* outreach and education campaign concept to enhance broad dissemination of information across a wide area. The concept is a starting point for an investment in new creative collateral. Procurement of a creative consultant is anticipated in fall 2014, with new campaign products and approach for implementation in FY 2014-15.

The future campaign, in its current concept, will use "place-based" (i.e. specific to local and regional waters) and "value-based" (i.e. tied to cultural and emotional interests) messaging and products to connect with audiences, encourage interaction and motivate positive behaviors. Results from an Oregon-based survey conducted in 2014 by DHM Research and funded by the the Association of Clean Water Agencies (Oregon chapter) were instrumental in choosing the place-based and value-based approach.

The campaign will include a set of strongly branded products that can support more targeted products tailored to specific topics, communities and audiences. Creative elements may include various ad templates, finished ads, a resource website, an interactive map, print materials and/or promotional collateral.

A region-wide campaign can take advantage of shared messaging and media outlets, with a recognizable brand that can help increase recognition and awareness. A number of creative products for the campaign are under consideration, including an interactive webpage to connect visitors with information, point to local resources and capture and report commitments to watershed health. The campaign will emphasize measuring effectiveness and improvement over time. In addition to collaboration around a core regional campaign, members of the Regional Coalition and regional partners may pursue additional targeted communication projects that further leverage *The River Starts Here* investment.

Coalition members prepared a poster illustrating The River Starts Here campaign concept to gather additional feedback from stormwater practitioners, included in Appendix B, presented at the 2014 Oregon Association of Clean Water Agencies Stormwater Summit.

DON'T BE A WATER HAZARD CAMPAIGN

The Coalition's FY 2013-14 campaign included maintaining its existing website and social media accounts as well as placing ads on Portland-area radio stations, on Facebook and through support of KOIN television's Do the Right Thing campaign.

Coalition website (www.cleanriversandstreams.org)

The Coalition continues to use its website, www.cleanriversandstreams.org, as a primary destination for its target audience. The website includes interactive scenes, shown in Figure 1, with topical links to more detailed information about protective actions as well as feeds from the Coalition social media posts on Facebook and Twitter. The website serves as a broadly accessible compliment to radio and Facebook ads.

Figure 1: www.CleanRiversAndStreams.org home page

The website home page hosted a total of 3,607 sessions during FY 2013-14 according to Google Analytics. Sessions are defined as a series of clicks on the site by an individual visitor during a specific period of time. A session is initiated when the visitor arrives at the site, and it ends when the browser is closed or there is a period of inactivity. Session quantities vary based on the type of visitor tracking method employed.[1]

[1] Website analytics for FY 2013-14 are tracked using Google Analytics. The Urchin service used in previous years was discontinued. Google Analytics and Urchin use different tracking methods. Consequently, reports are not comparable and direct year-over-year analysis is not possible for 2012-13 and 2013-14.

FY 2013-14 monthly session counts are illustrated in Figure 2 and shown in Table 1. The average number of monthly sessions increased 92 percent for active campaign months of May and June relative to the rest of the fiscal year, compared to a 50 percent increase during the active campaign period of FY 2012-13. Increased web traffic during the campaign period was likely due to the increased investment in Facebook ads linking directly to the website. Without a direct measure available, it is estimated that up to two-thirds of traffic during the campaign period was related to Facebook-ads.[2]

Figure 2: CleanRiversAndStreams.org FY 2013-14 daily sessions

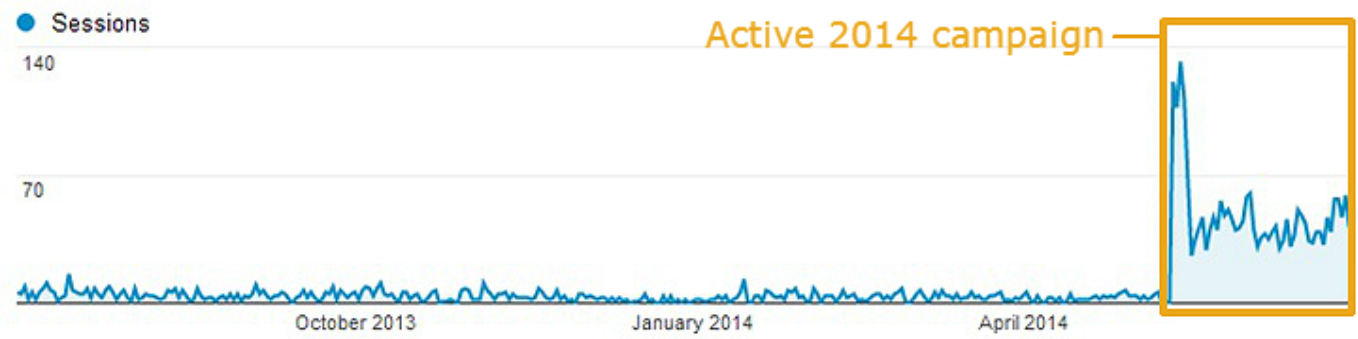


Table 1: FY 2013-14 sessions per month on www.cleanriversandstreams.org

	Month	Sessions
	July	198
	August	123
	September	142
	October	153
	November	130
	December	70
	January	118
	February	103
	March	113
	April	99
Active Spring Campaign	May	1,312
	June	1,402

Summary measures reported in website analytics for FY 2013-14 include the following. Additional website analytics are reported in Appendix D.

[2] Figure arrived at by summing homepage sessions during the active campaign and clicks on Facebook ads linking to subpages, divided by total Facebook website clicks. Analytics are from different sources and there may be some discrepancy between measures of "website clicks" and "website sessions".

- **Total sessions:** 3,607
- **Traffic type**
  - Direct: 64%
  - Organic (search engine): 21.4%
  - Referral: 14%
- **Percent New Visits:** 86%
- **Time on site:** 0:00:23

During the active spring campaign, approximately 86 percent of website sessions were from new visitors. This suggests that the content was of interest to visitors who have not seen it before. However, the high proportion of new users also signals the possibility that the site content does not compel people to return after an initial visit. Users also often viewed the website using phones and tablets. Approximately 23 percent of sessions were from a tablet and 16 percent a mobile device. Moreover, 56 percent of mobile sessions on the site (18 percent of total sessions) were from iPad or iPhone, devices which cannot access the Flash module (an interactive image depicting a home scene with links to topical content) which serves as the main component of the webpage.

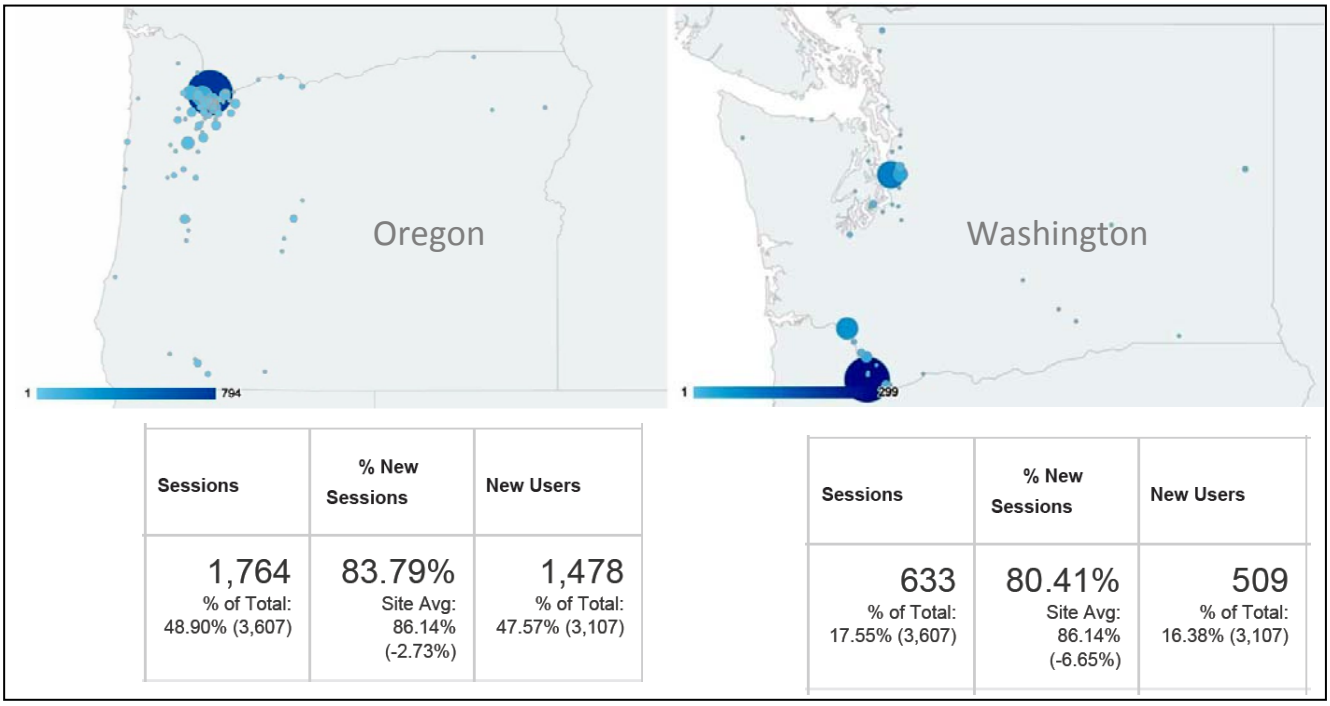
Benchmarks for comparison of these results to similar industry (e.g. government) sites are not readily available. The comparison of this year's analytics results is further hampered by an incomplete data set. These matters aside, compared to other websites managed by EnviroIssues, many of the analytics results are positive, including total sessions and a diversity of traffic type and visitor location. The high percentage of new visits and relatively short time on site indicate further work is needed to maximize users' interest.

Website traffic estimates can be can be made for each Coalition member service territory based on web analytics location data, as shown in Table 2. Website traffic primarily comes from Oregon (49 percent of total sessions) and Washington (18 percent of total sessions), as shown in Figure 3.

Table 2: Estimated FY 2013-14 website sessions from Coalition member service territories

Coalition member	Sessions	Percentage of total sessions
Clean Water Services	294	8%
City of Portland	794	22%
Clark County	309	9%
Water Environment Services	150	4%
Multnomah County	83	2%
Total Coalition service area	**1,740**	**45%**

Figure 3: Oregon and Washington-based FY 2013-14 website sessions



Sessions	% New Sessions	New Users
1,764 % of Total: 48.90% (3,607)	83.79% Site Avg: 86.14% (-2.73%)	1,478 % of Total: 47.57% (3,107)

Sessions	% New Sessions	New Users
633 % of Total: 17.55% (3,607)	80.41% Site Avg: 86.14% (-6.65%)	509 % of Total: 16.38% (3,107)

Social media

The Coalition maintained its presence on Facebook and Twitter throughout the fiscal year. Live feeds of the Coalition's most recent social media posts are also displayed on the Coalition website, shown in Figure 4.

Social media posts varied throughout the year and included information about native plants and gardening, lawn care, auto care, sustainable stormwater initiatives, household hazardous materials disposal, tree planting, pet waste management and home maintenance. In addition, posts featured organization and agency events and other volunteer and educational opportunities around the region. Posts on social media accounts drove readers to the Coalition website, agency partner sites and other regional organizations conducting water quality-related activities. Additional details on social media results are included in the *Campaign summary and reach* section.

Facebook page, Clean Rivers and Streams

The Coalition's Facebook page, *Clean Rivers and Streams,* was active throughout the fiscal year. A summary of Coalition Facebook account use during FY 2013-14 is as follows:

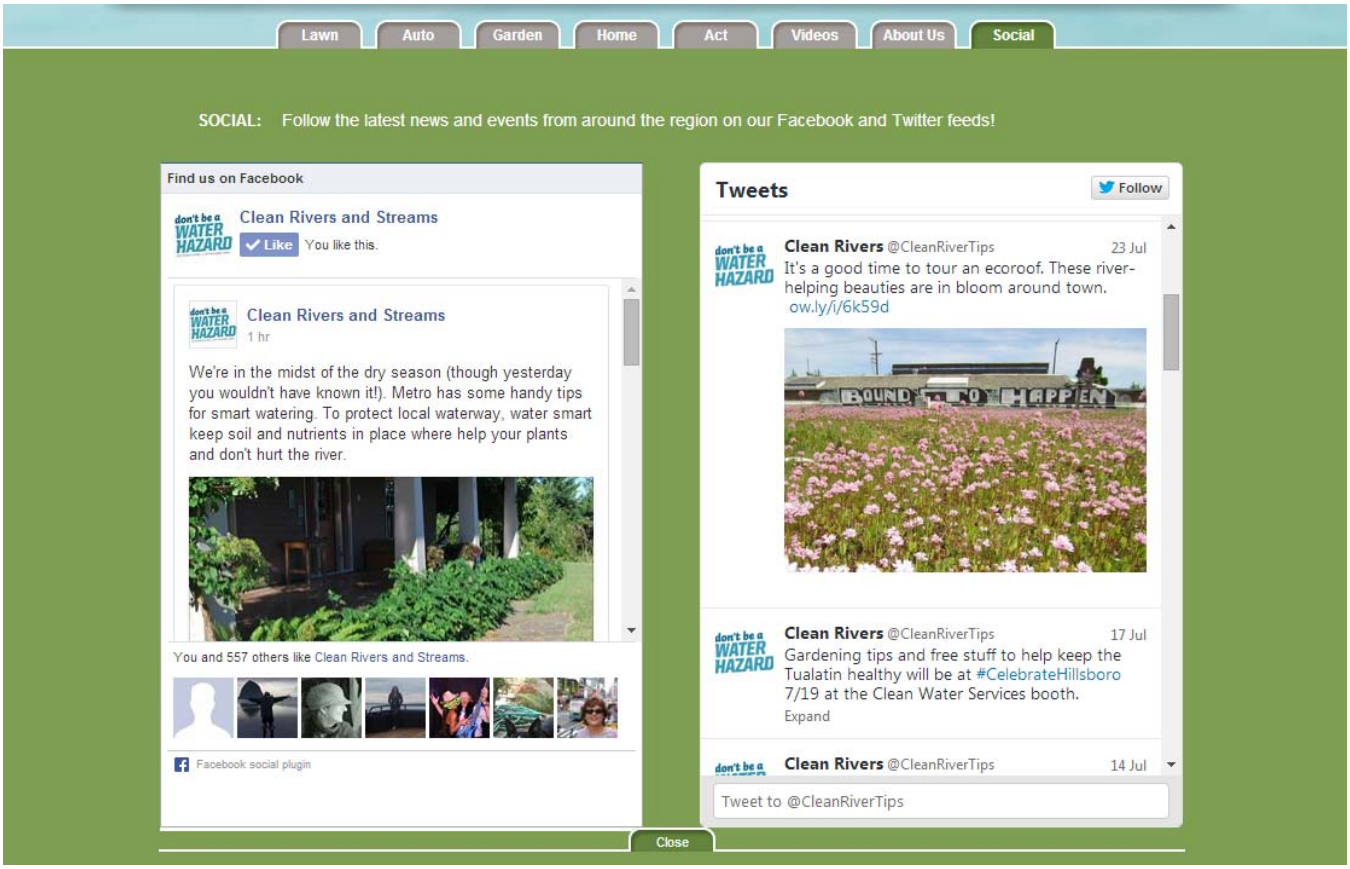
- **Reach during FY 2013-14:** *7,128,104*
- **Total likes:** 553 (214 new likes during FY 2013-14*)*
- **Posts during FY 2013-14:** 57

Twitter (@cleanrivertips)

Like Facebook, the Coalition's Twitter account was active throughout the fiscal year. A summary of use during FY 2013-14 is as follows:

- **Followers:** 1,186 (a gain of 109 from FY 2012-13)
- **Following:** 1,162
- **Tweets during the period:** 87

Figure 4: Website social media feeds



Radio advertisements

The campaign included prerecorded and live-read advertisements on four stations within the Alpha Broadcasting portfolio, including KXL-FM (news and talk, 101.1), KXTG-AM (sports, 750), KINK-FM (rock, 101.9) and KUFO-AM (talk, 970).

Advertising on a variety of radio stations allowed Coalition messaging to reach radio listeners of various demographics in the Portland-Vancouver region. Radio audiences included the Coalition's target audience of homeowners aged 35-55.

Station profiles include information about the audiences they reach:

- **KXL** listeners are described as "primarily adult male 35+," "affluent homeowners" and "seeking information and engaged in current events, political or world issues." KXL's Saturday 9 a.m. to noon, "In the Garden" and Saturday noon to 2 p.m., "Around the House" are regular weekly radio shows that feature information about home improvement and yard care.
- **KXTG** listeners are less likely to currently do eco-friendly activities on a regular basis.
- **KINK** listeners are homeowners at a rate of 75% and most live in the four-county metropolitan area.
- **KUFO** listeners have an 81% homeownership rate.

The radio campaign with Alpha Broadcasting included four radio ads which were first produced and aired in FY 2011-12, including one 60-second ad focused on lawn chemicals and three 30-second ads, one each on lawn chemicals, pet waste and auto maintenance. The Coalition also ran 10-second, live read messages on Alpha stations KXL and KXTG. The 10-second messages on KXL were scheduled before traffic reports for maximum impact. The four Alpha stations ran 388 ads over the period June 23 to July 6. Scripts for radio ads and more detailed information about ad placement are included in Appendix C.

Alpha Broadcasting also aired Coalition ads 187 times during the campaign as Public Service Announcements at no additional charge. The average cost per thousand impressions for Radio ads for FY 2013-14 was $3.34, compared to $5.02 achieved for the previous year's ads through Alpha Broadcasting. A summary are radio campaign results is shown in Table 3.

Table 3: Radio campaign results

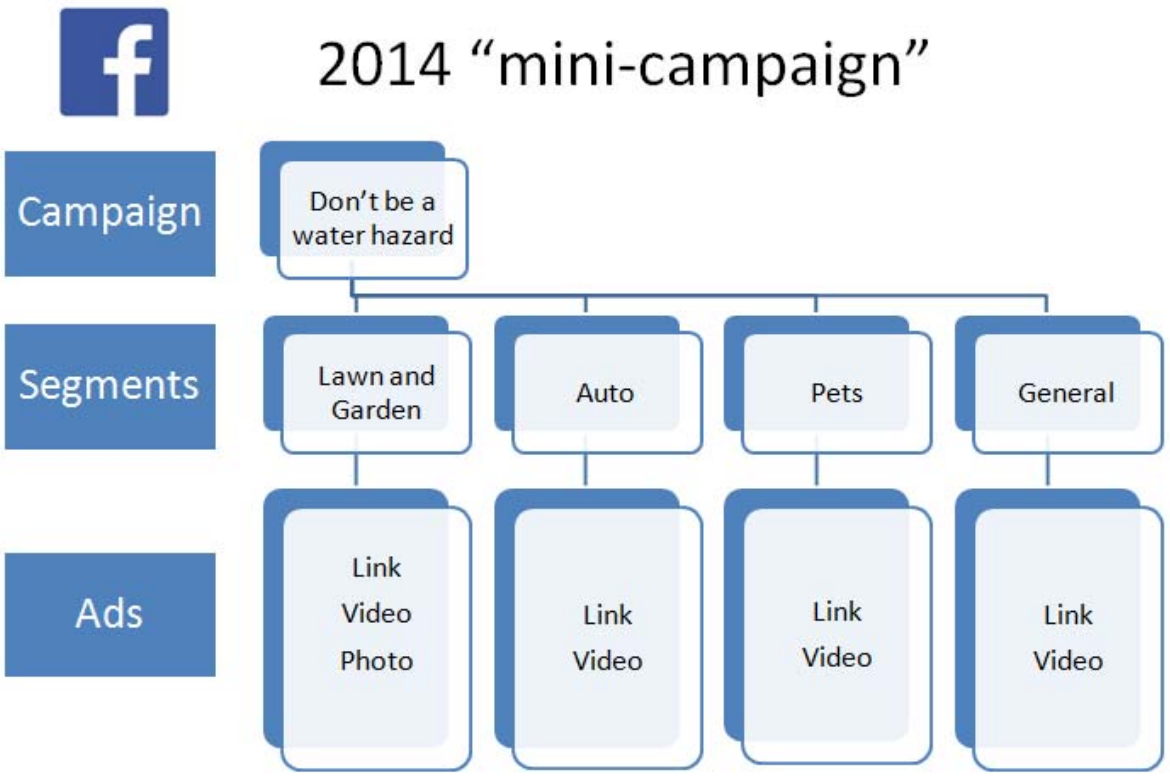
Total ads aired	388
Messages aired as Public Service Announcements	187
Impressions (Adults aged 25+)	896,400
Reach	406,900
CPM	$3.36

Facebook advertisements

Online advertisements on Facebook offer cost-effective messaging and integrate seamlessly with the Coalition's existing Facebook posts and website. These ads access the growing number of networked social media users. Seven Facebook ads ran for the Regional Coalition between May 12 and June 30. A total of $4,989.63 was spent on the campaign for an average cost per thousand impressions of $0.11, the lowest reported reach-related cost measure spanning three years of campaign data. Ads were targeted to adults within 50 miles of Portland and Vancouver. Topical ads (lawn, pet and auto care) were further targeted to Facebook users with similar interests.

A variety of ads and placement options (newsfeed, right column and mobile), objectives (clicks to website, Facebook likes, video view) and link destinations (Regional Coalition Facebook page, website) were utilized for the 2013-14 campaign to broaden the users exposed to the ads and to identify which options are most successful. Three video ads ran, including a general video, one targeting automobile washing and one targeting lawn care. Three graphic ads also ran, which respectively targeted lawn, pet and automobile care. A photo ad, featuring "Ruby," a little girl, also ran with a message about lawn care.

Figure 3: FY 2013-14 campaign, segments and ads overview



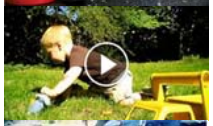
Facebook ads use a pay-per-click pricing model. Users who click the ad are taken to the Coalition Facebook page, the Coalition website, or register a like, comment or share on their Facebook profile or newsfeed. Campaign results are summarized in Table 4.

Table 4: Facebook campaign results

Reach	584,235
Total likes during the campaign (post and page)	417
Comments	14
Shares	32
Website clicks[3]	3,074
Clicks to play video	1,808

[3] Facebook website clicks are the number of clicks on an ad or page that direct people to a site off of Facebook as a result of an ad. Actions are counted when they occur within one day of someone viewing or 28 days after clicking on the ad.

Table 5: Facebook ads summary

	Ad	Objective (destination)	Impressions[4]	Reach[5]	Page engagement	Investment	Cost per engagement	CPM[6]	Engagement ratio[7]
Right column and mobile									
	Lawn graphic	Clicks (website)	3,010,617	160,941	1,027	$501.49	**$0.49**	$0.17	6.4
	Autos graphic	Clicks (website)	2,611,328	157,685	1,050	$500.84	**$0.48**	$0.19	6.7
	General video	Video views (FB page, website)	14,185,405	319,337	92	$874.85	$9.51	**$0.06**	0.3
	Lawn video	Video views (FB page, website)	11,367,878	199,128	143	$863.15	$6.04	**$0.08**	0.7
	Autos video	Video views (FB page, website)	10,295,661	159,215	102	$874.51	$8.57	**$0.08**	0.6
Newsfeed and mobile									
	Lawn – Ruby photo	Clicks (FB page, website)	199,215	87,185	1,044	$874.79	$0.84	$4.39	**12.0**
Newsfeed, right column and mobile									
	Pets graphic	FB Likes (FB page)	1,857,738	157,659	334	$500.00	$1.50	$0.27	2.1
Campaign TOTAL / AVERAGE			**43,527,842**	**584,235**	**3,792**	**$4,989.63**	**$1.32**	**$0.11**	**6.5**

[4] Impressions are the number of times an ad is displayed, whether it is clicked or not. People may see multiple impressions of the same ad.

[5] Reach is the number of unique people who received impressions of an ad.

[6] CPM is the cost per 1,000 impressions.

[7] Engagement ratio is calculated as (Page engagement / reach)*1,000. Page engagement is the total amount of engagement-related actions on a post and the Page. Page engagement actions include: post likes, post comments, post shares, website clicks, photo views, video views, Page likes, check-ins, Page mentions.

Facebook advertising findings and discussion

Facebook advertising remains a cost-effective, flexible and interactive advertising medium for the Coalition. While no single type of advertising is able to reach all of the Coalition's target audience, Facebook provides a relatively inclusive medium. The Pew Internet Project estimates 71 percent of online adults use Facebook[8]. The potential audience for Coalition ads on Facebook (adults within 50 miles of Portland or Vancouver) is over 1.4 million users. The campaign achieved a reach of over 500,000 individuals with over 43 million individual impressions, meaning active Facebook users among this audience saw ads multiple times during the campaign.

The online format provides seamless referral to the Coalition website and Facebook page, facilitating engaged viewers to learn more. In addition to the relatively high cost-effectiveness of Facebook ads in generating a primary audience exposure, this format also facilitates engagement with the content through social sharing and commenting, further amplifying the message. These online social actions are tracked, providing direct evidence of users' engagement with the messages.

Table 5 summarizes the Facebook ads placed during this campaign, including several measures that provide insight into relative ad cost and performance:

- Each display of an ad to an individual generates an impression, regardless of whether the ad was clicked. Impressions are contrasted with reach, which identifies the number of unique individuals who may have seen the ad. This audience would have been served the ad several times over.
- Engagement is a measure of actions taken by the audience as a result of seeing the ad, including following links, playing videos, sharing or liking content. Engagement is a more telling measure of ad effectiveness. "Cost per engagement" is calculated to understand the ratio of action resulting from the total investment. In addition, an "engagement ratio" was also calculated, comparing the total audience that engaged with the ad to total number of individuals reached to indicate which ads tended to generate more interest.

The campaign overall achieved a cost per thousand impressions of $0.11 with individual ads ranging from $0.06 to $0.27. The Ruby photo ad, which appeared in users' newsfeed as a sponsored post, was an outlier for this and other measures. The prominence of the Ruby ad's placement meant that while it had a relatively high cost per impression, it was more effective at engaging those who saw it. The engagement ratio for the Ruby ad, which is much higher than any other ads, reflects this.

Observations from the Facebook campaign summary include:

- The Ruby ad was by far the most successful at engaging Facebook users. This may be due to the more compelling combination of image and text, the quality of the content, or the subject matter featuring children and pets.
- The small, right column and mobile lawn and auto care ads show low costs per impression and a high ratio of engagement relative their reach.
- The graphic ad on pets had the objective of generating likes rather than page views. While resulting in higher costs per impression and engagement, likes also produce an entry on the users' profile and therefore also contribute to more social sharing.

[8] Pew Research Internet Project Social Networking Fact Sheet. Accessed 8/10/2014. http://www.pewinternet.org/fact-sheets/social-networking-fact-sheet/

- Video ads had a high cost of engagement compared to other ad types, but also offer a low cost per impression. Users were exposed to a message and still from the video, even if they did not click or play the video itself. Low engagement may be due to the perceived lack of a compelling message or content based on the video still.

Overall, a varied Facebook campaign, like the 2013-14 campaign provides a well-rounded set of results, including new page likes, impressions and cost per impression. For future campaigns, the Coalition should consider developing additional sponsored posts, similar to the Ruby ad, which generate high engagement among users and compliments the lower cost, right column graphic ads. Video remains a potential option, but should be more compelling to the audience by providing unique information or higher entertainment value to improve engagement rates.

Television advertisements

The Coalition contributes to the KOIN "Do the Right Thing" campaign along with a number of other agency funding partners in the region, including Metro and the cities of Salem, Fairview, Gresham, Tigard and Oregon City. The KOIN campaign focuses on actions residents can do to keep rivers and streams healthy and includes several elements: KOIN-TV commercial airtime, KOINlocal6.com, KOIN Local 6 News coverage and KOIN's social media outlets. KOIN's weekly reach includes 92 percent of adults in the metro area.

The "Do the Right Thing" page on KOINlocal6.com includes links to information organized by topic, a rotating tip of the month and a catalog of educational and instructional videos. The site hosted over 3,041 sessions in the period September 2013 to June 2014. A total of 220 messages of 30 and 15-second in length aired on KOIN-TV, providing an average of 1,100,000 impressions per month for a total of 10.45 million impressions.[9]

[9] KOIN campaign results were reported in an email to EnviroIssues.

Campaign summary and reach

Overall, the 2013-14 campaign focused on low cost advertising. The Coalition advertising investment was approximately 23 percent of the total invested the previous fiscal year. Total Facebook and radio impressions for FY 2013-14 increased from the previous year and a lower average cost per impression was achieved.

Table 6: Summary of campaign reach, by media outlet comparing FY 2012-13 and FY 2013-14

Media	Outlet	Investment	Impressions	Average CPM	
FY 2012-13					
TV	KOIN	$20,000.00	11,000,000	$1.82	
Radio	OPB	$2,420.00	200,000	$12.10	
	Alpha	$9,516.00	1,900,300	$5.02	
	El Rey	$2,000	332,000	$6.08	
Outdoor	Clear Channel	$9,900.00	1,320,556	$7.50	
Transit	Lamar	$10,500.00	4,700,000	$2.23	
Web	Facebook	$2,466.93	10,773,575	$0.23	
	Totals	**$56,802.93**	**30,226,431**	**$1.88**	
Media	**Outlet**	**Investment**	**Impressions**	**Average CPM**	**CPM Trend vs. FY 2012-13**
FY 2013-14					
TV	KOIN	$5,000.00	10,450,000	$0.47[10]	N/A[10]
Radio	Alpha	$3,000.00	896,400	$3.36	↓
Web	Facebook	$4,989.63	43,527,842	$0.17	↓
	Totals	**$12,989.63**	**54,874,242**	**$0.23**	↓

[10] As in past years, average CPM calculated based on total KOIN campaign impressions. A significantly lower CPM is due to a lower investment by the Coalition, not necessarily due to a change in media performance.

FY 2013-14 BUDGET

Table 7: FY 2013-14 campaign expenditures[11]

	Services	Investment
Media buys		
KOIN	:30 and :15 television spots	$5,000.00
Alpha Broadcasting	548 :10, :30 and :60 radio spots	$3,000.00
Facebook	Three ads placed over 11 weeks resulting in 1750 clicks	$4,989.63
Coordination support		
EnviroIssues	Meeting facilitation and member coordination, research, media buy coordination, graphic and web support, social media authoring, campaign documentation	$ 16,270.92
	TOTAL	**$29,260.55**

OBSERVATIONS

- Resources invested in strategic planning and new creative products will help the Coalition improve its operations and enhance education and outreach.
- The FY 2013-14 campaign was effective at reaching a target audience most likely to engage in consumer behavior that can impact water quality.
- The FY 2013-14 campaign was successful in focusing resources on cost effective media channels and broadening the reach of messages.
- Low relative cost of social media ads and consistent growth in social media following show that these are valuable tools for continued Coalition activity.
- Following the relative performance of social media ads, future campaigns should consider developing additional sponsored posts, similar to the Ruby ad, which generate high engagement among users and compliment the lower cost, right column graphic ads.
- Interest in website content should be maximized by making the site more accessible to mobile users, particularly those using Apple products, and by including more dynamic content and updated messaging.
- Increasing the average time spent viewing the website and increasing the ratio of returning visitors to new visitors should be a focus for the coming years to ensure clean water messages are delivered to targeted audiences. Further vetted industry benchmarks will be helpful in determining analytic effectiveness.

[11] Note that remaining funds not expended in FY13-14 will be invested in new creative content and campaign in FY 2014-15.

APPENDICES

A. Regional Coalition Strategic Plan
B. The River Starts Here Campaign Concept
C. Radio Scripts and Reports
D. Website Analytics
E. Facebook Ads and Report

Regional Coalition for Clean Rivers and Streams
Strategic plan

Mission statement and goals

The Regional Coalition for Clean Rivers and Streams is a partnership of organizations that collaborate across the Portland-Vancouver region to improve watershed health. The Coalition uses broad-based communication tools to complement the ongoing work of its members and partners to change household behaviors, curb polluted runoff and better connect people with the environments in which they live and play.

Three goals support the Coalition's mission:

Goal 1: Maintain a functioning Coalition
Goal 2: Develop and adapt creative products to fulfill the Coalition's mission
Goal 3: Practice adaptive management

Strategies corresponding to each goal are discussed in greater detail later in this document

Membership, coordination and decision-making

Coalition membership
The Coalition is comprised of both core members and regional partners:

Core members contribute annual funding and in-kind resources to maintain the Coalition's strategic core campaigns, administration and coordination functions. Core members convene regularly to determine and implement regional campaigns and projects, advance Coalition business, and engage regional partners. Core members may secure their funding commitments through Intergovernmental Agreement, Memorandum of Understanding or other mechanism that provides both necessary assurances and flexibility.

Regional partners include collaborators and supporters of the Coalition's mission who engage with core membership on an ad-hoc basis to leverage project opportunities, contribute content or provide insights to best practices. Regional partners may provide funding or in-kind resources to the Coalition in joint pursuit of projects accepted by core members.

Coordination and decision-making
Core members will maintain an annual work plan focused on development and review of core messages, creative products and delivery of campaigns following the annual development schedule (see five year schedule). Annual work plans will determine tasks needing support and potential assignments, including but not limited to: meeting scheduling; facilitation/action tracking; product maintenance and development; media buys; event coordination; grant writing; reporting; and partner engagement. The annual work plan will consider the timing of member contributions, reporting needs, and non-core funding opportunities (such as grant schedules). Labor implement all activities may be divided between Coalition members, additional staff resources, and/or consultant support.

Core members will direct annual expenditures of funding to pursue core campaign activities, which may include elements of traditional and new media strategies, materials, or events. Decisions about annual allocations will be made by a consensus of core members.

In addition to core campaign activities, members may pursue strategic partnerships with organizations around the region utilizing a portion of core funding or in-kind resources. Regional partnering opportunities may be considered through a proposal sponsored by one or more core members. Project proposals will include a basic project description, implantation schedule, an estimate of effort/cost and description of anticipated benefits. Core members will evaluate and approve these ad-hoc opportunities by a consensus decision, and incorporate to existing or future work plans as dictated by the feasibility of timing and available resources.

Goals, strategies and tasks

Goal #1: Maintain a functioning Coalition

- **Strategy 1.1 – Assess potential partnerships**
  - Objective 1.1.1 - Identify potential regional partners
    - Review and edit regional partner inventory
    - Identify key partner contacts
  - Objective 1.1.2 - Gather additional information about partnership interest and opportunities through informal meetings
    - Establish one-on-one outreach meetings with partner contacts
  - Objective 1.1.3 - Actively recruit new core members for post-IGA period, focusing on NPDES, TMDL permit requirements
    - Share details of strategic plan, agreement model, core messaging and creative products
- **Strategy 1.2 - Secure funding through regional collaboration**
  - Objective 1.2.1 - Secure additional core membership through an agreeable mechanism
    - Research and decide on agreement model for core membership
  - Objective 1.2.2 - Gain contributions through project-based partnerships
    - Proposals developed and brought to core members for review
  - Objective 1.2.3 - Research and obtain grant funding opportunities
    - Nature in Neighborhoods (annual, January application)
    - DEQ 319 (possible TMDL-related approach)
    - WA Ecology (next cycle is 2015, applications in summer/fall)
  - Objective 1.2.4 - Maintain an account within the core membership to accept contributions (from core members, partner project-based contributions, grants)
    - Discuss and decide on future accounting model
- **Strategy 1.3 - Prioritize and coordinate campaigns and projects through an annual work plan**
  - Objective 1.3.1 - Establish an annual schedule for review of core messages and decisions about core campaign allocations
  - Objective 1.3.2 – Document annual work plan
    - Campaign-related activities, schedule and assignments
    - Administrative activities, schedule and assignments

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

- **Strategy 2.1 – Identify target audiences – attitudes and ideals**
  - Objective 2.1.1 - Assess attitudes and ideals of regional audiences and how they relate to desired behavior changes
    - Review available social science and water quality science research
    - Conduct additional evaluation activities to assess audiences, as agreed to by members (see Strategy 3.1)
- **Strategy 2.2 - Identify the Coalition's core messages**
  - Objective 2.2.1 - Utilize tools such as message maps and a message calendar to hone priority messages for target audiences
    - Develop value-based messages that raise awareness about the water/environment/public health relationship
    - Develop targeted messages that speak to specific pollution prevention actions/BMPs
  - Objective 2.2.2 - Account for competing and/or redundant messages to amplify and/or balance against topics/messages delivered by other regional entities
    - Refer to regional partner inventory
- **Strategy 2.3 - Deliver messages with creative products through an annual campaign and projects**
  - Objective 2.3.1 - Consider campaign scenarios and make decisions about core funding allocations
    - Develop and maintain the cleanriversandstreams.org website
    - Conduct a media campaign through a variety of ads/mediums
    - Sponsor and/or host regional events
    - Contribute to and/or compliment other regional campaigns or ad-hoc projects

Goal #3: Practice adaptive management

- **Strategy 3.1 - Establish a meaningful performance measures and evaluate campaign/project results, integrating product and measurement wherever possible (e.g. pledge web clicks, etc)**
  - Objective 3.1.1 – Identify measures of the reach and awareness of key messages
  - Objective 3.1.2 – Identify measures of actions taken that benefit water quality
- **Strategy 3.2 - Develop an annual report to fulfill permit requirements and other internal needs**
- **Strategy 3.3 -Utilize results to inform product adaptation and annual work planning**

Annual schedule

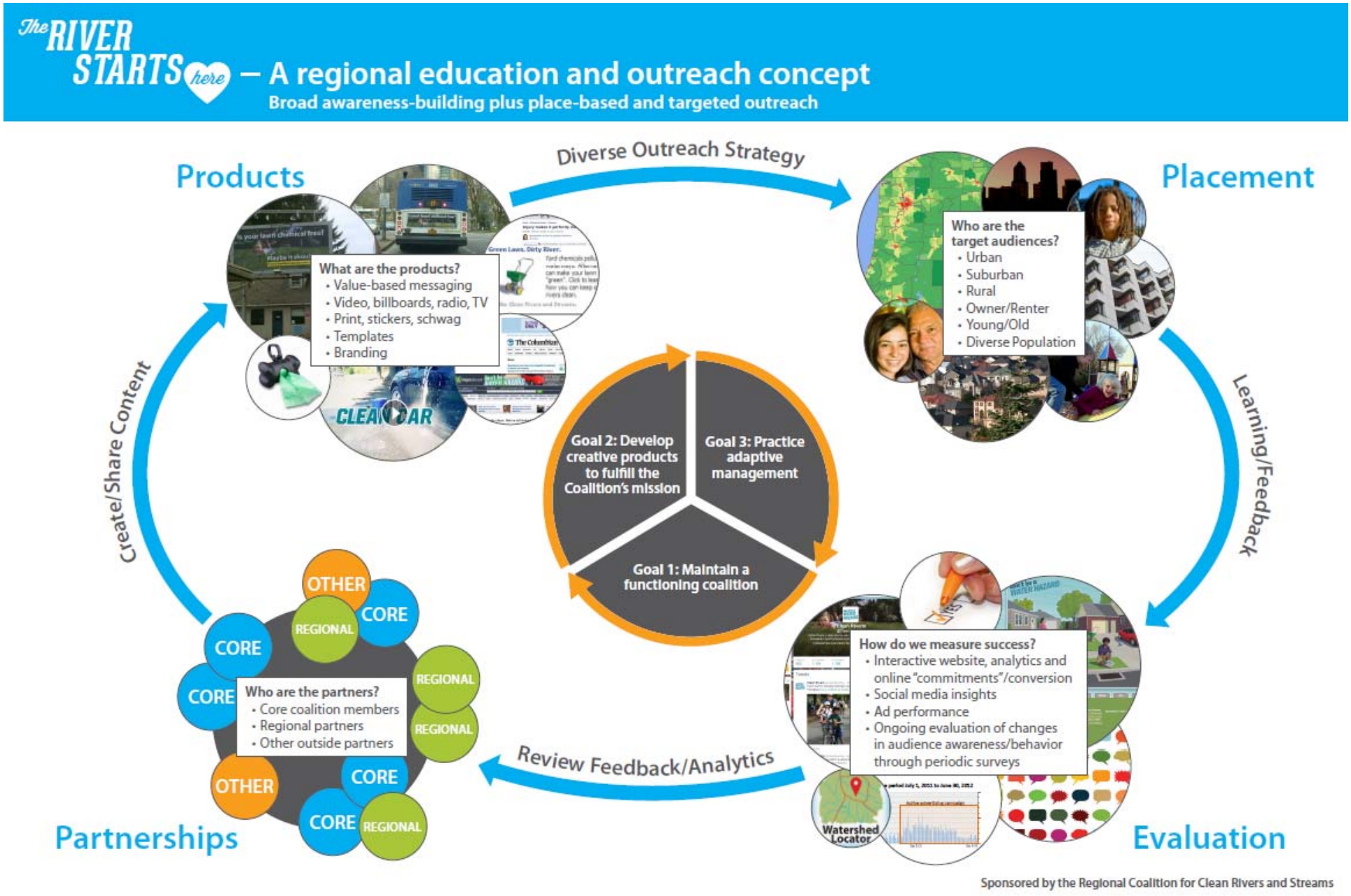
The following schedule reflects general targets for an annual cycle for development, implementation and review of coalition campaigns.

Month	Activities	
July	Campaign evaluation, document annual work plan	Consider and approve partnering proposals, determine timing relative to annual work plan
August	Review target audiences and core messages	
September	Develop and evaluate campaign scenarios	
October	Campaign decisions, funding allocations	
November-June	Campaign implementation (ongoing campaign work may extend beyond this period)	

Work schedule: application of strategies over five-year horizon

<table>
<tr><th></th><th>Immediate-term
(current campaign year)</th><th>Short-term
(two-year horizon, through existing Coalition IGA)</th><th>Long-term
(post IGA, three- to five-year horizon)</th></tr>
<tr><td rowspan="2">Goal #1: Maintain a functioning Coalition</td><td>Strategy 1.1 – Assess potential partnerships
Objective 1.1.1 - Identify potential regional partners
Review and edit regional partner inventory
Identify key partner contacts
Objective 1.1.2 - Gather additional information about partnership interest and opportunities through informal meetings
Establish one-on-one outreach meetings with partner contacts
Strategy 1.3 - Prioritize and coordinate campaigns and projects through an annual work plan
Objective 1.3.1 - Establish an annual schedule for review of core messages and decisions about core campaign allocations</td><td>Strategy 1.1 – Assess potential partnerships
Objective 1.1.3 - Actively recruit new core members for post-IGA period, focusing on NPDES, TMDL permit requirements
Share details of strategic plan, agreement model, core messaging and creative products
Strategy 1.2 - Secure funding through regional collaboration
Objective 1.2.1 - Secure additional core membership through an agreeable mechanism
Research and decide on agreement model for core membership
Objective 1.2.4 - Maintain an account within the core membership to accept contributions (from core members, partner project-based contributions, grants)
Discuss and decide on future accounting model</td><td>Strategy 1.2 - Secure funding through regional collaboration
Objective 1.2.1 - Secure additional core membership through an agreeable mechanism
Objective 1.2.2 - Gain contributions through project-based partnerships
Proposals developed and brought to core members for review
Objective 1.2.3 - Research and obtain grant funding opportunities
Nature in Neighborhoods (annual, January application)
DEQ 319 (possible TMDL-related approach)
WA Ecology (next cycle is 2015, applications in summer/fall)</td></tr>
<tr><td colspan="3">Strategy 1.3 - Prioritize and coordinate campaigns and projects through an annual work plan
Objective 1.3.2 – Document annual work plan
Campaign-related activities, schedule and assignments
Administrative activities, schedule and assignments</td></tr>
<tr><td>Goal #2: Develop and adapt creative products to fulfill the Coalition’s mission</td><td colspan="3">Strategy 2.1 – Identify target audiences – attitudes and ideals
Assess attitudes and ideals of various regional audiences and how they relate to desired behavior changes
Strategy 2.2 - Identify the Coalition’s core messages
Utilize tools such as message maps and a message calendar to hone priority messages for use in products and direct campaign timing
Develop value-based messages that raise awareness about the water/environment/public health relationship
Develop targeted messages that speak to specific pollution prevention actions/BMPs
Account for competing and/or redundant messages to amplify and/or balance against topics/messages delivered by other regional entities
Strategy 2.3 - Deliver clear, relevant messages to reach a diverse regional audience
Consider campaign scenarios and make decisions about core funding allocations
Develop and maintain the cleanriversandstreams.org website
Conduct a media campaign through a variety of ads/mediums
Sponsor and/or host regional events
Contribute to and/or compliment other regional campaigns</td></tr>
<tr><td>Goal #3: Practice adaptive management</td><td colspan="3">Strategy 3.1 - Establish a meaningful set of metrics and goals to evaluate campaign/project performance.
Awareness of key messages
Actions taken that benefit water quality. Integrate product and measurement wherever possible (e.g. pledge web clicks, etc).
Strategy 3.2 - Develop an annual report to fulfill permit requirements and other internal needs
Strategy 3.3 -Utilize results to inform product adaptation and annual work planning</td></tr>
</table>

Appendix B: River Starts Here Campaign Concept



Alpha Broadcasting
Regional Coalition for Clean Rivers and Streams
:10 radio script
Updated April15, 2013

The Regional Coalition for Clean Rivers and Streams. Reminding you to protect water quality through simple steps at home and in your community. CleanRiversAndStreams DOT org.

60-second ad: lawn chemicals
Modified existing 60-second script

SFX: OUTDOORS, BIRDS, DOGS IN DISTANCE, ETC.
ANNCR: Hey, nice lawn you got here.
JOE: (sounds a bit muffled, cheery delivery) Thanks.
ANNCR: What's your secret?
JOE: Lots of lawn chemicals— 2 4-D, MCPP. You know, the stuff that's in weed and feed you don't want your kids playing in.
ANNCR; I guess that would explain your gas mask and chemical suit.
JOE: Oh this? It keeps me from getting skin rashes and headaches which are just some of the risks you take when gardening with chemicals.
ANNCR: Yeah but aren't you worried about your kids?
JOE: Oh they have their own gas masks and chemical suits.
ANNCR: Maybe you should switch from chemicals to natural lawn care.
JOE: I wouldn't know where to start.
ANNCR: Just visit the Regional Coalition for Clean Rivers and Streams on the web. They have a ton of info to help you quit lawn chemicals and go natural, plus other actions we can all take to protect water quality.
JOE: Just like that?
ANNCR: Yeah. Just visit CleanRiversAndStreams DOT O-R-G.
SFX: MUFFLED SOUND OF DOG BARKING
ANNCR: Oh this must be your dog.
JOE: How'd you guess?
ANNCR: Uh, the gas mask gave it away.

Appendix C: Radio Scripts and Reports

30-second: Lawn chemicals
SFX: Outdoor sounds, sprinkler
NEIGHBOR: Wow, Hank. Your lawn is a color green I am not familiar with.
HANK: I think the fertilizer bag called it "Obscene Green." It's a combo of 5-10-10 and 2 4-D with a little MCPP.
NEIGHBOR: All those chemicals would explain your HazMat suit.
HANK: Can't be too careful…
NEIGHBOR: Actually, there are better ways. Visit the Regional Coalition for Clean Rivers and Streams at cleanriversandstreams.org. They have tips on healthy, natural lawn care.
SFX: Muffled bark
NEIGHBOR: This must be your dog.
HANK: How'd you guess?
NEIGHBOR: The gas mask gave it away.
ANNC: Visit CleanRiversAndStreams (dot) org.

30-second: Pets
SFX: Outdoor sounds, friendly, large slobbering dog walking with owner
NEIGHBOR: Hank, I think your dog left me a surprise again.
HANK: Did Karl bring the paper to your door?
NEIGHBOR: No, he left his usual calling card….that large brown mound on the grass.
HANK: Oh. I always forget the bag. You know, the brown stuff IS biodegradeable…..
NEIGHBOR: Actually, pet waste damages our local water sources. Not to mention my favorite shoes. Visit the Regional Coalition for Clean Rivers and Streams at cleanriversandstreams.org and get some great information.
SFX: sound of ripping paper, gnawing
HANK: For some reason Karl seems to prefer your lawn.
NEIGHBOR: He also seems to prefer my newspaper.
ANNC: Visit CleanRiversAndStreams (dot) org.

30-second: Autos
SFX: Outdoor sounds, steel wrench dropping on the ground. Hank is working on his car in the driveway
NEIGHBOR: Is that you under the car, Hank?
HANK: How'd you find me?
NEIGHBOR: I followed the stream of oil leaking into the street.
HANK: It comes from the earth, guess it's going back to the earth.
NEIGHBOR: Actually, oil and other auto fluids wreak havoc with local streams. The Regional Coalition for Clean Rivers and Streams at cleanriversandstreams.org has some great information on preventing water hazards.
HANK: That's good info. Say, can I borrow your chain saw? I've got a home improvement project next on my list.
NEIGHBOR: Let me guess…it's an indoor project.
ANNC: Visit CleanRiversAndStreams (dot) org.

Appendix C: Radio Scripts and Reports

Coalition 2014 recap

TAPSCAN

From: Erin Johnson
Phone: (503) 517-6217
Email: erin.johnson@alphabroadcasting.com
7/29/2014 7:21 PM

Flight Dates: 06/23/2014 - 07/06/2014
Demo: P 25+

Radio Market: PORTLAND, OR
Survey: JUN14 / MAY14
Geography: Metro

	Format	Daypart	Spots	Length	Daypart Title	Unit Rate	Average Persons	Gls	Net Reach	Frequency	CPM	Total Cost
Radio Total			**388**			**$7.73**	**2,300**	**896,400**	**406,900**	**2.2**	**$3.36**	**$3,000.00**
KXTG-AM	**All Sports**		**84**			**$6.43**	**2,200**	**181,800**	**76,600**	**2.4**	**$2.92**	**$540.00**
Flight A - 1 wk (06/23)												
			24			$11.25	2,300	54,300	35,100	1.5	$4.89	$270.00
One Week Total			24			$11.25	2,300	54,300	35,100	1.5	$4.89	$270.00
		M-F 3P-7P	4	10	live sports/traffic updates	$30.00	2,500	10,000	8,500	1.2	$12.00	$120.00
		M-F 6A-7P	5	30	upgrade time period	$10.00	3,100	15,500	13,500	1.1	$3.23	$50.00
		M-Su 6A-12M	2	60		$15.00	1,900	3,800	3,700	1.0	$7.89	$30.00
		M-Su 6A-6A	4	60		$5.00	1,400	5,600	5,500	1.0	$3.57	$20.00
		M-F 6A-7P	3	60	upgrade time period	$15.00	3,100	9,300	8,700	1.1	$4.84	$45.00
		M-F 6A-7P	1	60	upgrade time period	$5.00	3,100	3,100	3,100	1.0	$1.61	$5.00
		M-Su 5A-5A	5	60	PSA	$0.00	1,400	7,000	6,800	1.0	$0.00	$0.00
Flight A - 1 wk (06/30)												
			60			$4.50	2,100	127,500	54,500	2.3	$2.14	$270.00
One Week Total			60			$4.50	2,100	127,500	54,500	2.3	$2.14	$270.00
		M-F 3P-7P	4	10	live sports/traffic updates	$30.00	2,500	10,000	8,500	1.2	$12.00	$120.00
		M-F 6A-7P	5	30	upgrade timeperiod	$10.00	3,100	15,500	13,500	1.1	$3.23	$50.00
		M-F 6A-7P	5	60	upgrade time period	$5.00	3,100	15,500	13,500	1.1	$1.61	$25.00
		M-Su 6A-12M	5	60		$15.00	1,900	9,500	8,600	1.1	$7.89	$75.00
		M-Su 6A-6A	18	30	+PSA	$0.00	1,400	25,200	20,600	1.2	$0.00	$0.00

Coalition 2014 recap

TAPSCAN

From: Erin Johnson
Phone: (503) 517-6217
Email: erin.johnson@alphabroadcasting.com
7/29/2014 7:21 PM

	Format	Daypart	Spots	Length	Daypart Title	Unit Rate	Average Persons	Gls	Net Reach	Frequency	CPM	Total Cost
KXTG-AM (continued)												
		M-F 6A-7P	8	30	+PSA	$0.00	3,100	24,800	19,500	1.3	$0.00	$0.00
		M-Su 5A-12M	15	30	+PSA	$0.00	1,800	27,000	21,200	1.3	$0.00	$0.00
KINK-FM	**Album Adult Alternative**		**40**			**$25.25**	**4,300**	**171,200**	**121,000**	**1.4**	**$5.87**	**$1,010.00**
Flight A - 1 wk (06/23)												
			20			$25.25	4,300	85,600	66,500	1.3	$5.87	$505.00
One Week Total			20			$25.25	4,300	85,600	66,500	1.3	$5.87	$505.00
		M-F 10A-3P	3	30	Midday	$115.00	6,100	18,300	16,800	1.1	$18.85	$345.00
		M-Su 5A-12M	2	30		$20.00	4,500	9,000	8,900	1.0	$4.44	$40.00
		M-Su 6A-6A	10	60		$5.00	3,700	37,000	32,900	1.1	$1.35	$50.00
		Sa 8A-12N	2	30		$35.00	5,100	10,200	8,800	1.2	$6.86	$70.00
		M-Su 6A-6A	3	30	PSA	$0.00	3,700	11,100	10,700	1.0	$0.00	$0.00
Flight A - 1 wk (06/30)												
			20			$25.25	4,300	85,600	66,500	1.3	$5.87	$505.00
One Week Total			20			$25.25	4,300	85,600	66,500	1.3	$5.87	$505.00
		M-F 10A-3P	3	30	Midday	$115.00	6,100	18,300	16,800	1.1	$18.85	$345.00
		M-Su 5A-12M	2	30		$20.00	4,500	9,000	8,900	1.0	$4.44	$40.00
		M-Su 6A-6A	10	60		$5.00	3,700	37,000	32,900	1.1	$1.35	$50.00
		Sa 8A-12N	2	30		$35.00	5,100	10,200	8,800	1.2	$6.86	$70.00
		M-Su 6A-6A	3	30	PSA	$0.00	3,700	11,100	10,700	1.0	$0.00	$0.00
KXL-FM	**News Talk Information**		**54**			**$23.15**	**5,400**	**289,000**	**132,200**	**2.2**	**$4.29**	**$1,250.00**
Flight A - 1 wk (06/23)												
			20			$31.25	5,700	114,300	70,800	1.6	$5.48	$625.00
One Week Total			20			$31.25	5,700	114,300	70,800	1.6	$5.48	$625.00
		M-F 3P-6P	3	30		$130.00	8,700	26,100	22,400	1.2	$14.94	$390.00
		Sa 9A-12N	1	30		$30.00	6,500	6,500	6,500	1.0	$4.62	$30.00
		Sa 12N-2P	1	30		$30.00	5,200	5,200	5,200	1.0	$5.77	$30.00
		M-Su 6A-6A	5	60		$5.00	4,100	20,500	18,900	1.1	$1.22	$25.00

Appendix C: Radio Scripts and Reports

Coalition 2014 recap

TAPSCAN

From: Erin Johnson
Phone: (503) 517-6217
Email: erin.johnson@alphabroadcasting.com
7/29/2014 7:21 PM

	Format	Daypart	Spots	Length	Daypart Title	Unit Rate	Average Persons	Gls	Net Reach	Frequency	CPM	Total Cost
KXL-FM (continued)												
		M-F 6A-7P	5	10	live traffic	$30.00	7,100	35,500	30,200	1.2	$4.23	$150.00
		M-Su 6A-6A	5	30	PSA	$0.00	4,100	20,500	18,900	1.1	$0.00	$0.00
Flight A - 1 wk (06/30)												
			34			$18.38	5,100	174,700	89,200	2.0	$3.60	$625.00
One Week Total			34			$18.38	5,100	174,700	89,200	2.0	$3.60	$625.00
		M-F 3P-6P	3	30		$130.00	8,700	26,100	22,400	1.2	$14.94	$390.00
		Sa 9A-12N	1	30		$30.00	6,500	6,500	6,500	1.0	$4.62	$30.00
		Sa 12N-2P	1	30		$30.00	5,200	5,200	5,200	1.0	$5.77	$30.00
		M-Su 6A-6A	10	60		$5.00	4,100	41,000	34,200	1.2	$1.22	$50.00
		M-F 6A-7P	5	10	live traffic	$25.00	7,100	35,500	30,200	1.2	$3.52	$125.00
		M-Su 6A-6A	10	30	PSA	$0.00	4,100	41,000	34,200	1.2	$0.00	$0.00
		M-F 6A-7P	1	30	+PSA	$0.00	7,100	7,100	7,100	1.0	$0.00	$0.00
		M-Su 5A-5A	3	30	+PSA	$0.00	4,100	12,300	11,900	1.0	$0.00	$0.00
KUFO-AM	**Talk/Personality**		**210**			**$0.95**	**1,200**	**254,400**	**57,300**	**4.4**	**$0.79**	**$200.00**
Flight A - 1 wk (06/23)												
			113			$0.89	1,200	134,400	38,200	3.5	$0.74	$101.00
One Week Total			113			$0.89	1,200	134,400	38,200	3.5	$0.74	$101.00
		M-F 3P-6P	9	30		$5.00	2,000	18,000	11,100	1.6	$2.50	$45.00
		M-F 3P-6P	2	60		$10.00	2,000	4,000	3,700	1.1	$5.00	$20.00
		M-Su 6A-12M	4	30		$3.00	1,100	4,400	4,000	1.1	$2.73	$12.00
		M-Su 6A-6A	12	60		$2.00	900	10,800	9,200	1.2	$2.22	$24.00
		M-Su 6A-6A	18	30	+PSA	$0.00	900	16,200	12,700	1.3	$0.00	$0.00
		M-F 5A-8P	5	30	+PSA	$0.00	1,500	7,500	6,500	1.2	$0.00	$0.00
		M-F 6P-10P	12	30	+PSA	$0.00	800	9,600	6,200	1.5	$0.00	$0.00
		M-Su 5A-12M	32	30	+PSA	$0.00	1,100	35,200	20,400	1.7	$0.00	$0.00
		M-F 6A-10A	7	30	+PSA	$0.00	1,300	9,100	6,400	1.4	$0.00	$0.00
		M-F 10A-3P	8	30	+PSA	$0.00	1,500	12,000	9,000	1.3	$0.00	$0.00
		M-F 3P-7P	4	30	+PSA	$0.00	1,900	7,600	6,300	1.2	$0.00	$0.00

Appendix C: Radio Scripts and Reports

Coalition 2014 recap

TAPSCAN

From: Erin Johnson
Phone: (503) 517-6217
Email: erin.johnson@alphabroadcasting.com
7/29/2014 7:21 PM

	Format	Daypart	Spots	Length	Daypart Title	Unit Rate	Average Persons	Gls	Net Reach	Frequency	CPM	Total Cost
KUFO-AM (continued)												
Flight A - 1 wk (06/30)												
			97			$1.02	1,200	120,000	37,000	3.2	$0.85	$99.00
One Week Total			97			$1.02	1,200	120,000	37,000	3.2	$0.85	$99.00
		M-F 3P-6P	9	30		$5.00	2,000	18,000	11,100	1.6	$2.50	$45.00
		M-F 3P-6P	2	60		$10.00	2,000	4,000	3,700	1.1	$5.00	$20.00
		M-F 6A-3P	4	30		$3.00	1,400	5,600	5,100	1.1	$2.14	$12.00
		M-Su 6A-6A	11	60		$2.00	900	9,900	8,500	1.2	$2.22	$22.00
		M-Su 6A-6A	19	30	+PSA	$0.00	900	17,100	13,200	1.3	$0.00	$0.00
		M-Su 5A-12M	32	30	+PSA	$0.00	1,100	35,200	20,400	1.7	$0.00	$0.00
		M-F 6A-10A	7	30	+PSA	$0.00	1,300	9,100	6,400	1.4	$0.00	$0.00
		M-F 10A-3P	9	30	+PSA	$0.00	1,500	13,500	9,800	1.4	$0.00	$0.00
		M-F 3P-7P	4	30	+PSA	$0.00	1,900	7,600	6,300	1.2	$0.00	$0.00

Appendix C: Radio Scripts and Reports

Coalition 2014 recap

TAPSCAN

From: Erin Johnson
Phone: (503) 517-6217
Email: erin.johnson@alphabroadcasting.com
7/29/2014 7:21 PM

Schedule Grand Totals: 2 Weeks

Stations	Format	Spots	Unit Rate	Average Persons	Gls	Net Reach	Frequency	CPM	Total Cost
Radio Total		388	$7.73	2,300	896,400	406,900	2.2	$3.36	$3,000.00
KXTG-AM	All Sports	84	$6.43	2,200	181,800	76,600	2.4	$2.92	$540.00
KINK-FM	Album Adult Alternative	40	$25.25	4,300	171,200	121,000	1.4	$5.87	$1,010.00
KXL-FM	News Talk Information	54	$23.15	5,400	289,000	132,200	2.2	$4.29	$1,250.00
KUFO-AM	Talk/Personality	210	$0.95	1,200	254,400	57,300	4.4	$0.79	$200.00

Appendix D: Website Analytics

Website Analytics Technical Notes

Website analytics for FY 2013-14 are tracked using Google Analytics. The Urchin service used in previous years was discontinued. Google Analytics and Urchin use different tracking methods. Consequently, reports are not comparable and year-over-year analysis is not possible for 2012-13 and 2013-14.

Appendix D: Website Analytics

Google Analytics

http://cleanriversandstreams.org - http:... Go to this report
cleanriversandstreams.org

Default Dashboard

Jul 1, 2013 - Jun 30, 2014

All Sessions
100.00%

+ Add Segment

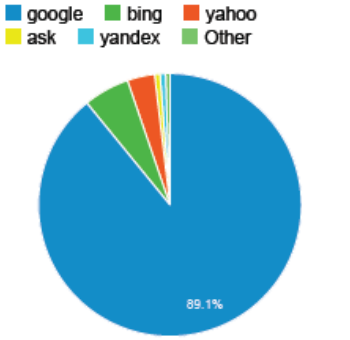
Visits

3,607
% of Total: 100.00% (3,607)

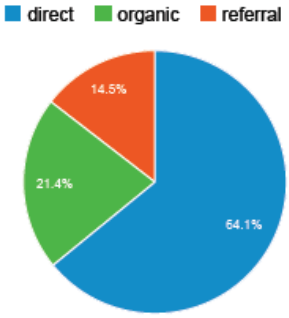
Pageviews

3,963
% of Total: 100.00% (3,963)

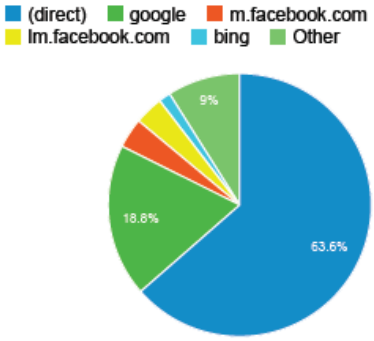
Organic Searches by Source



Visits by Traffic Type



Pageviews by Source



Organic Searches by Keyword

Keyword	Organic Searches
(not provided)	500
clean rivers	15
clean river	9
regional coalition for clean rivers and streams	7
rivers and streams	7
how to clean rivers	6
river cleaning methods	6
clean rivers and streams	5
how to keep rivers clean	5
clean river water	4

Bounce Rate

92.27%
Site Avg: 92.27% (0.00%)

% New Visits

86.14%
Site Avg: 86.14% (0.00%)

Visits

3,607
% of Total: 100.00% (3,607)

Pages / Visit

1.10
Site Avg: 1.10 (0.00%)

Avg. Visit Duration

00:00:23
Site Avg: 00:00:23 (0.00%)

Appendix D: Website Analytics

Devices

Jul 1, 2013 - Jun 30, 2014

Customize Email Export Add to Dashboard Shortcut

All Sessions
32.38%

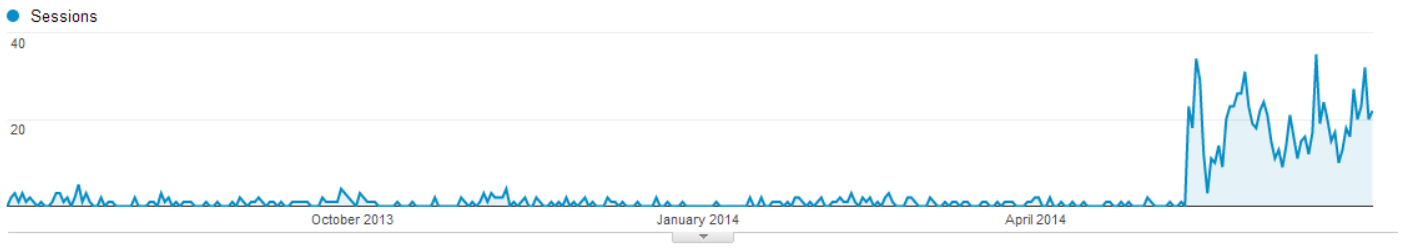
+ Add Segment

Explorer Map Overlay

Summary Site Usage Ecommerce

Sessions vs. Select a metric

Day Week Month



Primary Dimension: Mobile Device Info Mobile Device Branding Service Provider Mobile Input Selector Operating System Other

Plot Rows Secondary dimension Sort Type: Default advanced

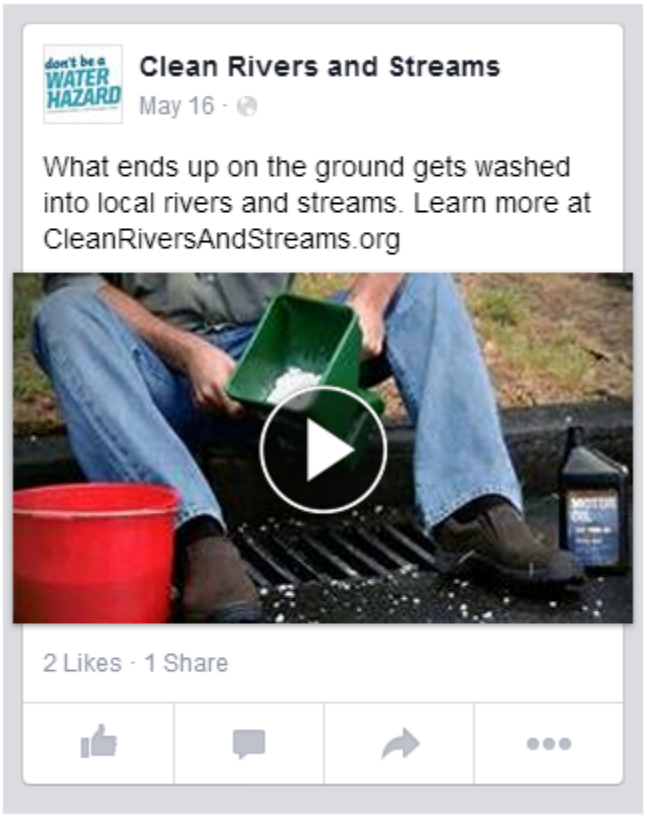
Mobile Device Info	Acquisition			Behavior			Conversions		
	Sessions ↓	% New Sessions	New Users	Bounce Rate	Pages / Session	Avg. Session Duration	Goal Conversion Rate	Goal Completions	Goal Value
	1,168 % of Total: 32.38% (3,607)	80.91% Site Avg: 86.14% (-6.07%)	945 % of Total: 30.42% (3,107)	91.01% Site Avg: 92.27% (-1.36%)	1.13 Site Avg: 1.10 (2.47%)	00:00:24 Site Avg: 00:00:23 (7.57%)	0.00% Site Avg: 0.00% (0.00%)	0 % of Total: 0.00% (0)	$0.00 % of Total: 0.00% ($0.00)
1. Apple iPad	493 (42.21%)	79.72%	393 (41.59%)	91.48%	1.13	00:00:31	0.00%	0 (0.00%)	$0.00 (0.00%)
2. Apple iPhone	169 (14.47%)	90.53%	153 (16.19%)	90.53%	1.11	00:00:08	0.00%	0 (0.00%)	$0.00 (0.00%)
3. (not set)	49 (4.20%)	81.63%	40 (4.23%)	91.84%	1.08	00:00:38	0.00%	0 (0.00%)	$0.00 (0.00%)
4. Nokia Lumia 521	30 (2.57%)	96.67%	29 (3.07%)	93.33%	1.13	00:00:01	0.00%	0 (0.00%)	$0.00 (0.00%)

Appendix E: Facebook Ads and Report

Ad name: General video - Mobile and right column formats:

Clean Rivers and Streams
What ends up on the ground gets washed into local rivers and streams. Learn more at CleanR...

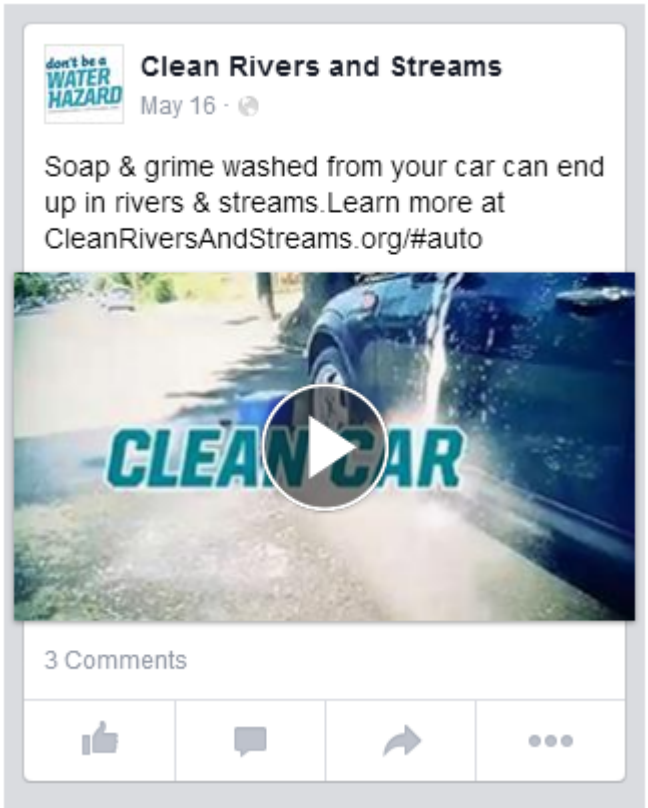
2 2



Ad name: "Car video"
Mobile and right column formats:

Clean Rivers and Streams
Soap & grime washed from your car can end up in rivers & streams.Learn more at CleanRivers...

3

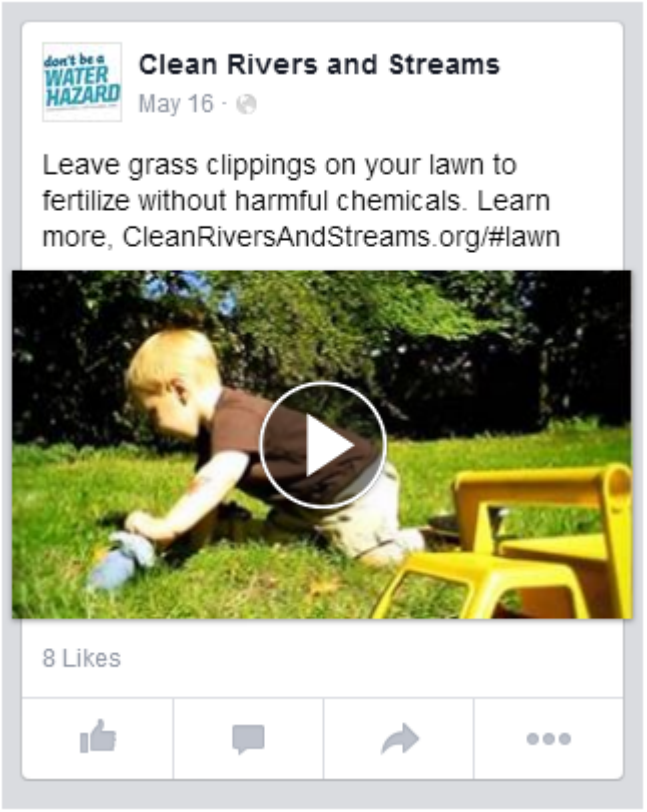


Appendix E: Facebook Ads and Report

Ad name: Lawn video
Mobile and right column formats:

Clean Rivers and Streams
Leave grass clippings on your lawn to fertilize without harmful chemicals. Learn more, Cle...

8



Ad name: "Lawn – Targeted"

Ad name: "Autos – Targeted"

Appendix E: Facebook Ads and Report

Ad name: "General – Ruby"
Newsfeed (desktop) and mobile format:

Appendix E: Facebook Ads and Report

Ad name: "Pets – Targeted"
Newsfeed (desktop), mobile and right column formats:

Appendix E: Facebook Ads and Report

Facebook Ads Reporting

Reports ▾ **General Metrics: 2014-05-12 to 2014-06-30 (edited)** Schedule | Save | Share | Export

Reports Help ▾

Edit Columns | Add Filters

Dates: Custom ▾ 05/12/14 to 06/30/14 All days ▾

Start Date	End Date	Campaign	Reach	Impressions	Cost Per 1,000 Imp	Spend	Clicks	Unique Clicks	Cost Per Click (CP	Page Likes	Page Engagement	Clicks to Play Vide	Video Views
2014-05-12	**2014-06-30**	--	**584,235** People	**43,527,842** Total	**$0.11** Per 1,000 Impress	**$4,989.63** Total	**6,958** Total	**5,678** People	**$0.72** Per Click	**215** Total	**3,792** Total	**1,808** Total	**245** Total
2014-05-12	2014-06-30	Autos - Targeted 2014	157,685	2,611,328	$0.19	$500.84	1,052	835	$0.48	1	1,050	0	0
2014-05-12	2014-06-30	Lawn - Targeted 2014	160,941	3,010,617	$0.17	$501.49	1,014	801	$0.49	7	1,027	0	0
2014-05-12	2014-06-30	Pets - Targeted	157,659	1,857,738	$0.27	$500.00	800	671	$0.63	105	334	0	0
2014-05-12	2014-06-30	Lawn video	199,128	11,367,878	$0.08	$863.15	755	723	$1.14	23	143	584	110
2014-05-12	2014-06-30	General video	319,337	14,185,405	$0.06	$874.85	841	811	$1.04	26	92	623	59
2014-05-12	2014-06-30	Car video	159,215	10,295,661	$0.08	$874.51	838	803	$1.04	24	102	601	76
2014-05-12	2014-06-30	Ruby	87,185	199,215	$4.39	$874.79	1,658	1,247	$0.53	29	1,044	0	0