Department of Community Services

Road Services

April 14, 2017

Andrea Matzke
Oregon Department of Environmental Quality
Northwest Region Water Quality
700 NE Multnomah St, Ste 600
Portland, OR 97232

Subject: Multnomah County TMDL Annual Report

Dear Ms. Matzke,

Enclosed is the 2017 TMDL Implementation Annual Report. This report summarizes activities from July 1, 2015 – June 30, 2016. We look forward to continued reviews, discussion and partnership with DEQ on solutions to water quality issues.

If you have questions or concerns about the TMDL Annual Report or the County's Water Quality Program please contact Roy Iwai, Water Resources Specialist, at (503) 988-0195, or by email at roy.iwai@multco.us.

Sincerely,

Ian B. Cannon, P.E.
Transportation Director
Multnomah County Transportation Division

Multnomah County TMDL Implementation Plan For the Tualatin, Lower Willamette and Sandy River Basins

TMDL Report

April 2017

Water Quality Program
Transportation Division
Department of Community Services
Multnomah County

Organization of this Report

This report contains a summary of the Multnomah County 2014 Total Maximum Daily Load Implementation Plan actions for the period of July 1, 2015 – June 30, 2016. The plan is available for download at: https://multco.us/water-quality-program/reports-and-plans.

This report is organized into three principle sections based on the management strategies developed to reduce the TMDL pollutants and their surrogates: 1) Temperature, 2) Bacteria, and 3) Sediment (Mercury, organic toxins, metals, and nutrients).

Introduction

Several waterbodies in Multnomah County fail to meet State standards for water quality. These standards assure that beneficial uses of the waterbody, such as swimming, fish consumption, and aquatic life, are protected. When water quality standards are not met, the beneficial uses are *impaired*. The Oregon Department of Environmental Quality (DEQ) establishes a Total Maximum Daily Load (TMDL) for those impaired waterbodies.

Multnomah County is identified as a Designated Management Agency (DMA) in TMDL plans including the Columbia Slough (1998), the Tualatin River (2001), the Lower Willamette River (2005), and the Sandy River (2006). Reductions for several pollutants are identified in the TMDL plans, including bacteria, temperature, metals, dissolved oxygen, and several organic toxins.

The overall goal of Multnomah County's TMDL Implementation Plan is to prevent, reduce, and eliminate, wherever practicable, sources of pollution to protect and restore impaired waterbodies within the County's jurisdiction and authority to meet the pollutant load allocations set by the TMDLs. The County's strategy includes land use planning, monitoring, interagency coordination, public education, and road maintenance operations. The following report summarizes the County's actions and evaluations of progress in achieving this goal.

Area of Responsibility

TMDL waterbodies are shown in Figure 1 and listed in Table 1 along with the pollutant reductions. This area overlaps with the County's National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Phase I permit (NPDES MS4 Phase I permit) jurisdictional area, which are referred to as the "Portland Area" and the "Gresham Area" (Figure 2 and 3). Within the Portland Area, Multnomah County is responsible for the Willamette River bridges and small unincorporated pocket areas within the Portland Urban Services boundary. Within the Gresham Area, Multnomah County is responsible for 28 miles of arterial roadways in the cities of Fairview, Troutdale, and Wood Village, and the unincorporated residential area known as "Interlachen," located between Fairview Lake and Blue Lake. Specific details regarding the County's jurisdiction are provided in the Multnomah County NPDES Stormwater Management Plan, which can be downloaded at https://multco.us/water-quality-program/reports-and-plans .

Figure 1. TMDL waterbodies in Multnomah County.

Figure 2. Portland Area of Multnomah County's NPDES MS4 Phase I permit area.

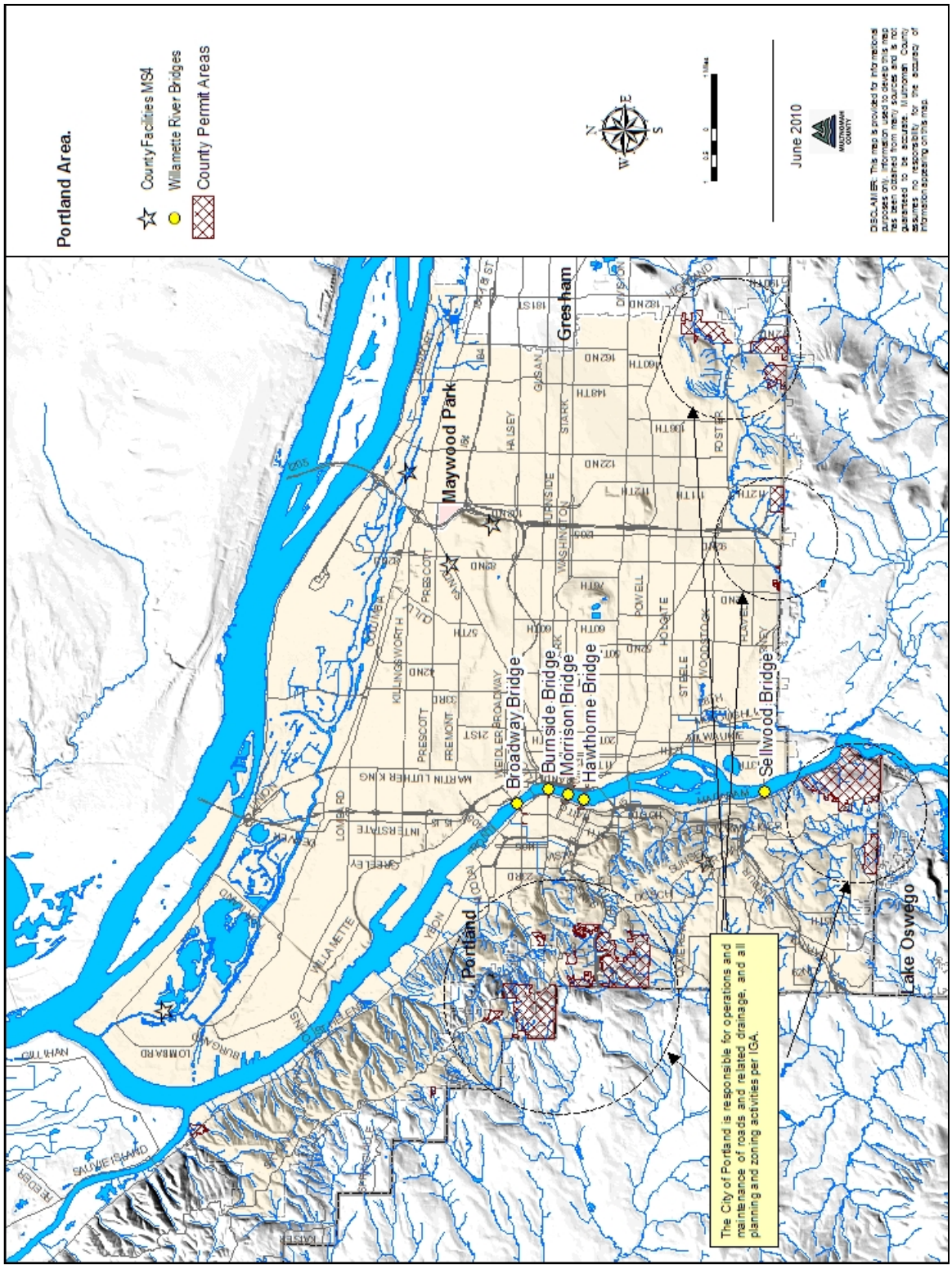

Figure 3. Gresham area of Multnomah County's NPDES MS4 Phase I permit area.

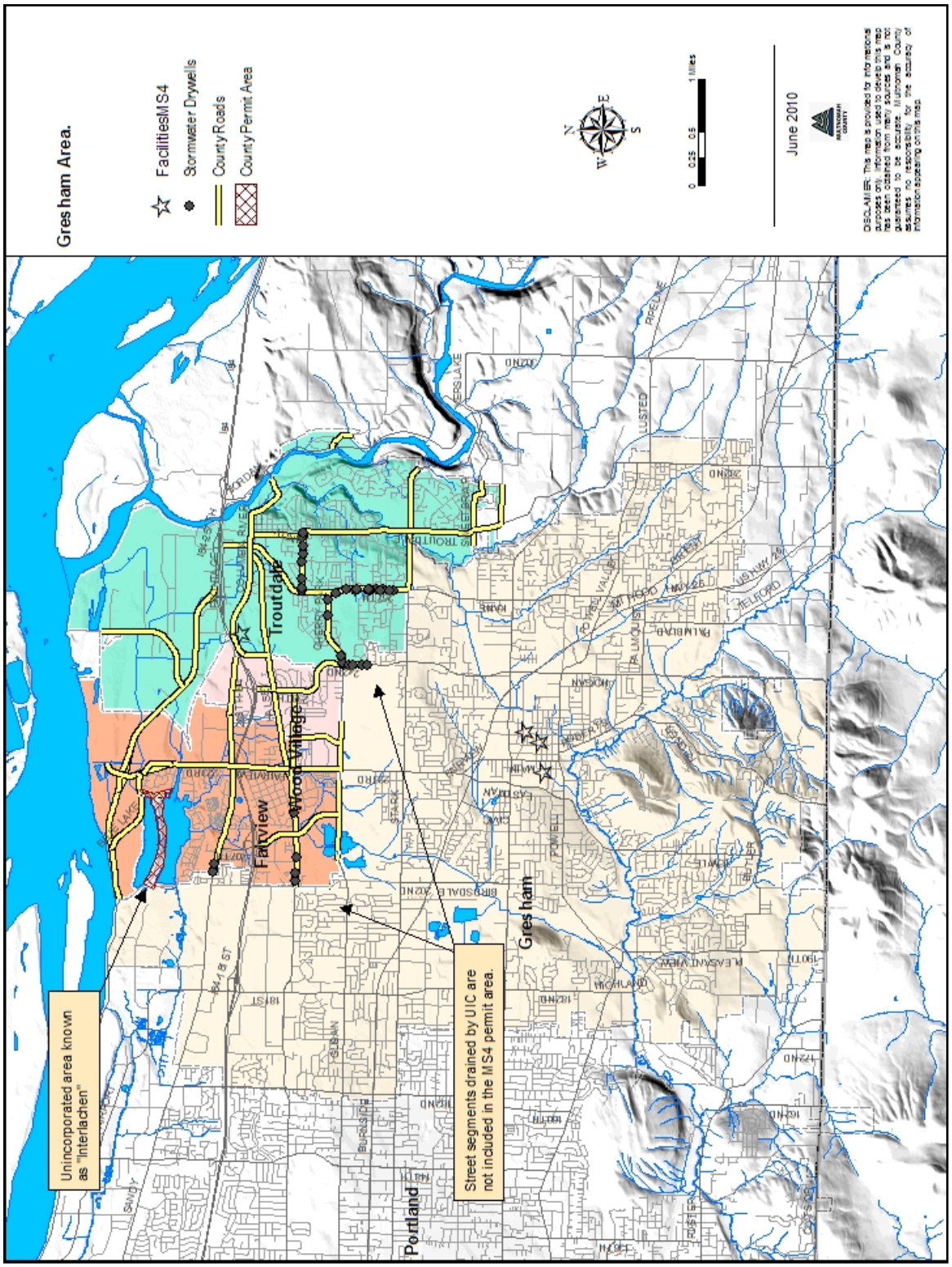

Table 1. Water quality pollutants and TMDL reduction targets for streams within Multnomah County jurisdiction.

Pollutant	Waterbody	WLA/LA	*TMDL*
Temperature	Sandy River	5.9% reduction	*Sandy*
	Gordon Creek	n/d[1]	*Sandy*
	Beaver Creek	n/d	*Sandy*
	Lower Willamette River	n/a[2]	*L. Willamette*
	Johnson Creek	51% reduction	*L. Willamette*
	Tryon Creek	n/a	*L. Willamette*
	Fairview Creek	n/a	*L. Willamette*
	Beaverton Creek	60% reduction	*Tualatin*
	Bronson Creek	n/d	*Tualatin*
	Rock Creek	51% reduction	*Tualatin*
	Fanno Creek	69% reduction	*Tualatin*
Bacteria	Beaver Creek	86% reduction	*Sandy*
	Johnson Creek	78% reduction	*L. Willamette*
	Springbrook Creek	n/a	*L. Willamette*
	Fairview Creek	n/d	*L. Willamette*
	Beaverton Creek	n/d	*Tualatin*
	Bronson Creek	n/d	*Tualatin*
	Rock Creek	3000org/100ml runoff	*Tualatin*
	Fanno Creek	n/d	*Tualatin*
Mercury	Lower Willamette River	27% reduction*	*L. Willamette*
DDT (and Dieldrin)	Johnson Creek	77% urban stormwater 94% nonpoint sources	*L. Willamette*
	Columbia Slough	3.24×10^{-6}kg/d	*L. Willamette*
PCB	Columbia Slough	5.3×10^{-6} kg/d	*L. Willamette*
Lead	Columbia Slough	Varies with flow	*L. Willamette*
2,3,7,8 TCDD	Columbia Slough	1.31×10^{-9} kg/d	*L. Willamette*
Dissolved Oxygen, pH, chlorophyll a	Columbia Slough	Total P, BOD varies with flow	*L. Willamette*
	Beaverton Creek	30% reduction SVS	*Tualatin*
	Bronson Creek	30% reduction SVS 0.13 mg/l Total P	*Tualatin*
	Fanno Creek	50% reduction SVS 0.13 mg/l Total P	*Tualatin*
	Rock Creek	30% reduction SVS 0.19 mg/l Total P	*Tualatin*

[1]n/d: not defined. No data analysis was conducted for small tributaries.
[2]n/a: not applicable. See details in plan regarding the particular conditions for each pollutant.
*This is guidance not a WLA

Implementation action summary

Temperature

The actions in the County's TMDL Implementation Plan for the Sandy and Lower Willamette TMDLs include land use plan review, education, and coordination with the East Multnomah Soil & Water Conservation District (EMSWCD).

The County issued two permits during the reporting period with a potential to impact stream buffers (Significant Environmental Concern Permit) (Table 2). One permit was issued for riparian and stream restoration at the site of a private culvert installation on Beaver Creek, where native plant control and native plant revegetation was specified as a permit condition. A permit from Metro did not impact the riparian vegetation providing shade to the Sandy River.

Table 2. Land use permits on TMDL streams and the threat to temperature from permitted activities.

Permit #	*Issue*	*Waterbody*	*Temperature issue*
T2-2015-4299	Private culvert installation and riparian planting	Beaver Creek	Yes
T3-2015-3903	Improvements at Metro's Oxbow Park	Sandy River	No

The EMSWCD Stream Care program works in the rural residential areas of unincorporated Multnomah County to restore riparian areas impacted by invasive weeds. The EMSWCD assisted the County to install native plants in the County right-of-way area on Beaver Creek at the intersection of Division St and Troutdale Rd where a short section of stream was exposed between two culverts. The site graduates from the program in 2017.

Copies of the EMSWCD Rural Living Handbook and other brochures are made available to the public at the Land Use Planning counter.

Bacteria

Failing onsite septic systems and illegal dumping are concerns for the County regarding the bacteria loading in the County jurisdiction.

- The County Road Maintenance crews work regularly in the basins maintaining the road surface, vegetation and drainage infrastructure in the right-of-way. Crews did not report suspicious activity or evidence of failing septic systems during the reporting period.

- Several incidents of illegal dumping were reported to the County Nuisance Code Enforcement Officer within TMDL watersheds (Table 3). The debris did not contain fecal material or otherwise pose a water quality threat.

Table 3. Incidents of illegal dumping near TMDL streams.

Date	*Location*	*Waterbody*	*Bacteria threat*
9/30/15	12627 Germantown Rd	Abbey Ck (Rock Ck)	none
7/27/15	SE 174th Ave at County Line	Johnson Ck	none
8/24/15	17115 SE Foster Rd	Johnson Ck	none
12/30/15	SE 282nd Ave 500' of WK Anderson	Beaver Ck	none
7/28/15	SE Troutdale Rd 500' N of Divsion	Beaver Ck	none

- Ongoing education efforts include participation in the Regional Coalition of Clean Rivers and Streams, which has a social media and digital ad campaign that covers the Portland Metro area.

- Eighty-eight brochures from other entities on various topics, including septic maintenance, were taken from the County Land Use Planning Counter.

Sediment – Mercury, Organic Pollutants, DDT and Dieldrin surrogate

Sediment erosion best management practices (BMPs) are implemented through two primary mechanisms, the County Road Maintenance & Operations Manual (RMOM) and the National Pollutant Discharge Elimination System (NPDES) stormwater permit. The NPDES annual report covers urban roadways under the NPDES permit area, and includes BMP status during the past fiscal year. The RMOM is a guidance document created in response to the Endangered Species Act listing of salmon in the area, and was submitted in May 2010 to National Oceanic and Atmospheric Administration (NOAA) Fisheries for a programmatic exemption to the 4(d) rules for "take" related to road practices. Additionally, voluntary reporting to the Oregon Department of Agriculture Water Quality Complaint website is a tool to reduce sediment.

- Review of the RMOM is done annually, and changes to the report are updated. It should be noted that the best management practices (BMPs) identified in the RMOM are techniques to *minimize or avoid* sediment mobilization, as opposed to NDPES activities to *remove* pollutants. Where ditch maintenance is concerned, the County's approach is to allow vegetation to grow in ditches to trap and filter sediments. Ditches are cleaned only as needed to reduce soil disturbance and to maintain the vegetation's function. Ditches are not cleaned on a regular frequency like catch basins in the urban area; thus, no regular maintenance frequency exists.

- NPDES Annual Report was submitted to DEQ in November 2016 and posted on the County website at https://multco.us/water-quality-program/reports-and-plans. Section 3 of the NPDES Annual Report 2016 - "BMP Summary" - includes a report of status of BMPs in seven categories, including operations and maintenance activities that directly removed pollutants from urban roadways.

- No sediment related concerns were reported to the Oregon Department of Agriculture Water Quality Complaint Program during the reporting period.

Monitoring and Adaptive Management

Water quality monitoring in the County TMDL watersheds is a shared activity between the County and other jurisdictions in these watersheds, including state, local and municipal entities, SWCDs, and watershed councils. Data collection and analysis is coordinated voluntarily in watersheds where there are multiple entities. The most significant of these are the Beaver Creek Conservation Partnership, and the Johnson Creek Inter-jurisdictional Committee. Discussions among jurisdictions lead to investigative follow up data collection, outreach, or regulatory action.

- The County conducts monitoring in lower Beaver Creek and Fairview Creek as part of regulatory obligation of the NPDES Phase I permit. Ambient water quality monitoring occurs four times per year, during wet and dry weather at four sites. Water quality parameters include continuous temperature and periodic monitoring for field, conventional parameters, metals, and E. coli bacteria. Macroinvertebrate monitoring occurs annually in both watersheds.

- Data collection and analysis is coordinated voluntarily in Beaver Creek and Johnson Creek watersheds. Watershed-wide temperature and Macroinvertebrate data is collected by multiple agencies.

APPENDIX A. Table of Multnomah County TMDL Management Strategies

Temperature (Shade)

Lower Willamette River Watershed – Johnson Creek, Fairview Creek
Tualatin River Watershed - Beaverton Creek, Bronson Creek, Rock Creek
Sandy River Watershed - Sandy River, Gordon Creek, Beaver Creek

Source	Strategy	How	Fiscal Analysis	Measure	Timeline	Milestone	Status
Preserve and restore stream shading	Ensure vegetated buffers are maintained	Continue plan review for new development and redevelopment	No additional resources needed	Track all permits on TMDL streams concerning riparian vegetation	Annual reporting	Complete analysis of riparian vegetation impacts annually	Two permits were issued within the stream buffers of TMDL waterbodies. One permit called for revegation. The other permit maintained existing riparian vegetation.
	Enforce stream buffer protection	Continue County code enforcement	No additional resources needed	Track all permits on TMDL streams with stream buffer issues	Annual reporting	Complete analysis of stream buffer threats annually	No code enforcement violations occurred in the reporting period
	Educate landowners about the benefits of vegetated stream buffers	Work with local Soil & Water Conservation Districts to disseminate outreach materials	No additional resources needed	Track number of brochures taken from the Planning Office lobby	Annual reporting	Complete annual count of brochures	Brochures are stocked by the Planning Counter front desk staff. 88 brochures were taken from the counter.
	Maintain shade in County right of way where appropriate	Partner with EMSWCD on Division St planting at Beaver Creek	No additional resources needed	Planting is managed through EMSWCD StreamCare	EMSWCD management will go through 2016	Evaluation in 2016	Planting by the EMSWCD StreamCare Program is now graduated from the program.

Bacteria

Lower Willamette River watersheds – Lower Willamette, Johnson Creek, Fairview Creek

Tualatin River watersheds – Beaverton Creek, Bronson Creek, Rock Creek
Sandy River watersheds – Beaver Creek

Source	Strategy	How	Fiscal Analysis	Measure	Timeline	Milestone	Status
Failing septic systems	Inspect County drainage system for septage	Identify areas with suspicious contaminants or septage in ditches and catch basins during road maintenance activities	No additional resources needed	Track number of incidents of suspected septic system discharge to road drainages	Annual reporting	Complete analysis of suspected discharge and system follow up with City of Portland Septic Program	No suspected activity in permit year.
		Inspect outfalls for illicit discharge (See NPDES Stormwater Management Plan)	No additional resources needed	4 outfalls inspected annually during dry weather (as described in NPDES Annual report 2016)	Annual inspection	Complete analysis of suspected dry weather discharge	No suspected illicit discharge during NPDES permit term.
	Educate homeowners about septic system maintenance	Work with local Soil & Water Conservation Districts to disseminate outreach materials	No additional resources needed	Track number of brochures taken from the Planning Office lobby	Annual reporting	Complete annual count of brochures	Brochures are stocked by the Planning Counter front desk staff. 88 brochures were taken.

Livestock manure	Address runoff issues through ODA Water Quality Program	Submit Water Quality Complaint Form to ODA	No additional resources needed	Track number of incidents reported to ODA	Annual reporting	Complete annual count of incident reports to ODA	No livestock related complaints filed during reporting period.
Source	**Strategy**	**How**	**Fiscal Analysis**	**Measure**	**Timeline**	**Milestone**	**Status**
Pet wastes	Educate pet owners	Develop and disseminate materials through the Regional Coalition of Clean Rivers and Streams (see NPDES Stormwater Management Plan)	No additional resources needed	Track number of posts and impressions	Annual reporting	Complete annual count of posts and impressions	Variety of clean water messaging through web and social media. Refer to NPDES Annual Report 2016 for the RCCRS Annual Report in Appendix A.
Illegal dumping	Enforce Nuisance Code	Report illegal dumping to County Nuisance Code Enforcement (See NPDES Stormwater Management Plan)	No additional resources needed	Track number and location of illegal dumping activities	Annual reporting	Complete analysis of incidents that involved fecal bacteria	No reports of illegal dumping concerning fecal bacteria.
Instream monitoring	Identify stream reaches with high E.coli concentrations	Review instream E.coli data from collaborative monitoring efforts	No additional resources needed	Coordinate with Johnson Creek Interjurisdictional Committee and Beaver Creek Conservation Partnership	Quarterly data collection through IGA with City of Gresham for Beaver Creek and Fairview Creek. Ad hoc sampling with IJC	Annual review	See NPDES Annual Report 2016.

Sediment (Nitrogen, Phosphorus, Lead, Mercury, Organic toxins)

Tualatin River watershed: Beaverton Creek, Bronson Creek, Rock Creek
Lower Willamette River watershed: Johnson Creek, Columbia Slough

Source	Strategy	How	Fiscal Analysis	Measure	Timeline	Milestone	Status
Non-point source sediment from agricultural lands	Address runoff issues through ODA Water Quality Program	Submit Water Quality Complaint Form to ODA	No additional resources needed	Track number of incidents reported to ODA	Annual reporting	Complete annual count of reported incidents	No Water Quality complaints were submitted to ODA during the reporting period.
	Educate landowners about erosion impacts to streams	Work with local Soil & Water Conservation Districts to disseminate outreach materials	No additional resources needed	Track number of brochures taken from the Planning Office lobby	Annual reporting	Complete annual count of brochures	Brochures are stocked by the Planning Counter front desk staff. 88 brochures were taken from the counter.
Soil erosion and sediment transport from roads in urban and rural areas	Avoid and minimize stormwater and pollutant runoff from County drainage network	Implement and update the NPDES Stormwater Management Plan	See NPDES reports for work in the NPDES permit area.	Performance measures are included in the NPDES Annual Report	Annual reporting	Complete analysis of BMP status and adaptive management needs	See NPDES Annual Report 2016 – Section 3 BMP Summary – for status and adaptive management
		Implement and update the Road Maintenance and Operations Manual	No additional resources needed	Conduct annual review of elements of the RMOM	Annual review of elements of the RMOM	Annual reporting	Review of the RMOM is included as a BMP in the NPDES Stormwater Management Plan. See NPDES Annual Report 2016.
Mercury-containing products used in County facilities	Reduce use of products containing mercury	Purchase alternative products that contain less or no mercury.	No additional resources needed	Develop and follow purchasing policy	Completed	Completed	Multnomah County Healthy Purchasing Initiative (2012) gives guidance on purchasing products.
	Ensure proper disposal of products containing mercury	Recycle products containing mercury	No additional resources needed	Develop guidance on recycling and disposal of products containing mercury	Completed	Completed	This is a County purchasing policy developed under the County Toxics Reduction Strategy (2006)