



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

Annual Report 2015

April 2015

Water Quality Program
Land Use and Transportation Division
Department of Community Services
Multnomah County

Organization of this Report

This report is organized into three principle sections based on the management strategies developed to reduce the TMDL pollutants:

- 1) Temperature
- 2) Bacteria
- 3) Sediment (Mercury, organic toxins, metals, and nutrients)

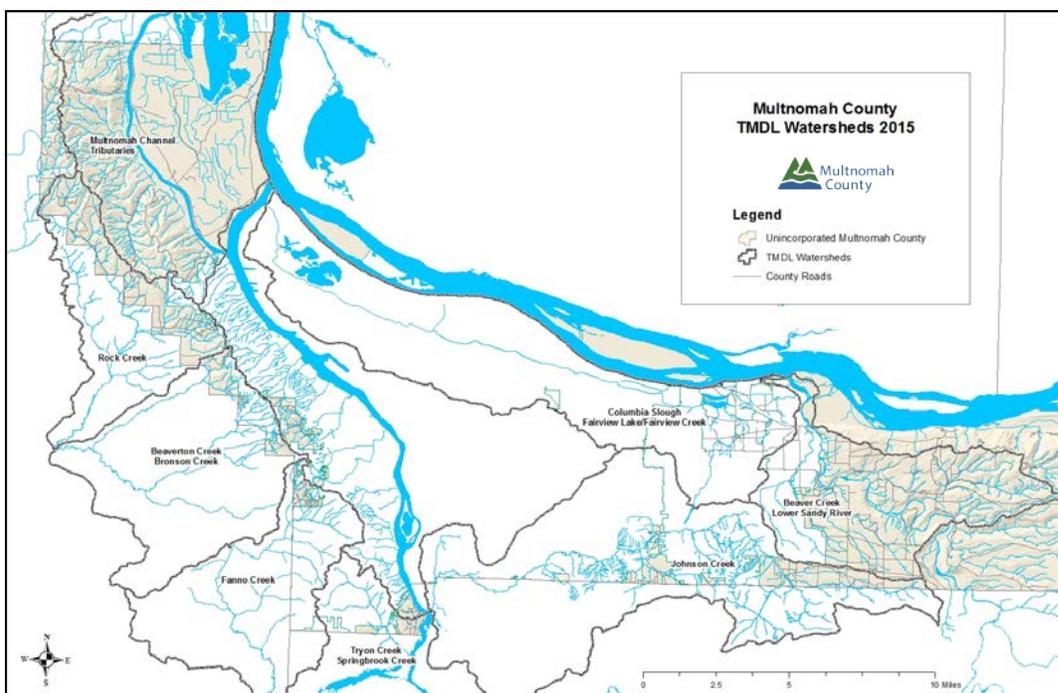
A summary of implementation activities from April 1, 2014 – April 1, 2015 is included in this report. A matrix of implementation actions is included at the end of the report.

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 establishes a Total Maximum Daily Load (TMDL) for those impaired waterbodies.

Multnomah County is identified as a 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.

Figure 1. TMDL waterbodies in Multnomah County.



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.

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	<i>Sandy</i>
	Gordon Creek	n/d ¹	<i>Sandy</i>
	Beaver Creek	n/d	<i>Sandy</i>
	Lower Willamette River	n/a ²	<i>L. Willamette</i>
	Johnson Creek	51% reduction	<i>L. Willamette</i>
	Tryon Creek	n/a	<i>L. Willamette</i>
	Fairveiw Creek	n/a	<i>L. Willamette</i>
	Beaverton Creek	60% reduction	<i>Tualatin</i>
	Bronson Creek	n/d	<i>Tualatin</i>
	Rock Creek	51% reduction	<i>Tualatin</i>
	Fanno Creek	69% reduction	<i>Tualatin</i>
Bacteria	Beaver Creek	86% reduction	<i>Sandy</i>
	Johnson Creek	78% reduction	<i>L. Willamette</i>
	Springbrook Creek	n/a	<i>L. Willamette</i>
	Fairview Creek	n/d	<i>L. Willamette</i>
	Beaverton Creek	n/d	<i>Tualatin</i>
	Bronson Creek	n/d	<i>Tualatin</i>
	Rock Creek	3000org/100ml runoff	<i>Tualatin</i>
	Fanno Creek	n/d	<i>Tualatin</i>
Mercury	Lower Willamette River	27% reduction*	<i>L. Willamette</i>
DDT (and Dieldrin)	Johnson Creek	77% urban stormwater 94% nonpoint sources	<i>L. Willamette</i>
	Columbia Slough	3.24x10 ⁻⁶ kg/d	<i>L. Willamette</i>
PCB	Columbia Slough	5.3x10 ⁻⁶ kg/d	<i>L. Willamette</i>
Lead	Columbia Slough	Varies with flow	<i>L. Willamette</i>
2,3,7,8 TCDD	Columbia Slough	1.31x10 ⁻⁹ kg/d	<i>L. Willamette</i>
Dissolved Oxygen, pH, chlorophyll a	Columbia Slough	Total P, BOD varies with flow	<i>L. Willamette</i>
	Beaverton Creek	30% reduction SVS	<i>Tualatin</i>
	Bronson Creek	30% reduction SVS 0.13 mg/l Total P	<i>Tualatin</i>
	Fanno Creek	50% reduction SVS 0.13 mg/l Total P	<i>Tualatin</i>
	Rock Creek	30% reduction SVS 0.19 mg/l Total P	<i>Tualatin</i>

¹n/d: not defined. No data analysis was conducted for small tributaries.

²n/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.

Seven permits were issued by the County during the reporting period regarding stream buffers (Significant Environmental Concern Permit). However, all except one were located in intermittent headwater stream reaches where temperature was not a factor. One permit was on a perennial tributary of Kelley Creek, and the buffer trees are maintained on this property.

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. They manage the vegetation through 2016.

Copies of the EMSWCD Rural Living Handbook and 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 provide the Water Quality Program with visual observations of potential problems. Water Quality staff sample water quality, and coordinate with the appropriate regulatory authorities for clean up, or onsite septic system permits.

During the reporting period, Road Maintenance crews identified one catch basin with a foul odor, and informed the Water Quality staff. Monitoring for bacteria did not show evidence of high bacteria concentrations to associate the odor with septic failure. Decay of organic material in anoxic conditions can produce sulfurous odors in catch basins.

Two incidents of illegal dumping were reported to the County Nuisance Code Enforcement Officer. The debris did not contain fecal material or otherwise pose a water quality threat.

Ongoing education efforts include participation in the Regional Coalition of Clean Rivers and Streams (NPDES program BMP), and the supply of education materials at the County Land Use Planning Counter (NPDES program BMP).

The current draft Sauvie Island Rural Area Plan contains policies that direct staff to develop/update and implement sanitation standards for floating homes and for full-time and temporary live-aboard boats. Approval of live-aboards within a marina would require pump-outs or similar subject to available capacity of onsite sanitation system at a given marina. The Planning Commission hearings are continuing and we are hopeful that the County Board will approve the plan this summer.

Below are the current relevant draft policies:

2.1(b)

Coordinate with the National Oceanic and Atmospheric Administration Fisheries Division (NOAA Fisheries) to amend the Willamette River Greenway overlay zone to include objective design standards that protect salmon habitat and fish passage within and along the Multnomah Channel. Coordinate with the Oregon Department of State Lands (DSL) to ensure compliance with the Endangered Species Act (ESA) through its in-water leasing program.

2.1(c)

Consider building, plumbing, electrical and mechanical standards for floating structures.

2.1(d)

As directed by Portland's Bureau of Environmental Services and/or Oregon's Department of Environmental Quality, marina owners must provide for safe and easy collection and disposal of sewage from marine uses in Multnomah Channel.

- (1) Require marinas with floating structures to meet state standards for sewage collection and disposal similar to those standards that apply to dwellings on land.*
- (2) Boat slips serving boats with onboard cooking and/or sanitation facilities must be provided with a non-site mechanism for disposal of sewage, either through connections at each slip or through the availability of on-site alternative pump out facilities which are reasonably safe from accidental spillage.*

Policy 2.4

Allow live-aboards to be used as full time residences within a marina and count the live-aboard slip in the total number of residences approved for the marina.

This option requires Community Service (CS) approval and requires that boats meet health, safety, and environmental standards (i.e. electrical, water and sanitation) for occupied boats docked in a marina.

Policy 2.5

Consider standards to allow temporary use of live-aboard boats within marinas. This option requires that boats meet health, safety, and environmental standards (i.e. electrical, water and sanitation) for occupied boats docked in a marina.

Sediment – Mercury, DDT and Dieldrin surrogate

Sediment erosion best management practices are implemented through two primary mechanisms, the County Road Maintenance & Operations Manual (RMOM) and the NPDES stormwater permit. The NPDES annual report covers land used planning activities, road maintenance practices, vegetation maintenance, and public education efforts during the past fiscal year. The RMOM is a guidance document created in response to the ESA listing of salmon in the area, and was submitted in May 2010 to NOAA Fisheries for a programmatic exemption to the 4(d) rules for take related to road practices. No sediment related concerns were reported to ODA during the reporting period.

Review of the RMOM is done annually, and changes to the report are updated. It should be noted that the BMPs identified in the RMOM are techniques to *minimize or avoid* sediment mobilization, as opposed to NPDES 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.

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. 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 watersheds where there are multiple entities. The most significant of these are the Beaver Creek Conservation Partnership, and the Johnson Creek Inter-jurisdictional Committee, and a new group of McCarthy Creek entities. Discussions among jurisdictions lead to investigative follow up data collection, outreach, or regulatory action.

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	Ongoing program	None	None	Seven permits were issued by Land Use Planning, however all except one were located in the intermittent headwaters of various tributaries. One permit on a Kelley Creek tributary maintained buffer trees.
	Enforce stream buffer protection	Continue County code enforcement	No additional resources needed	Ongoing program	None	None	Two code enforcement violations occurred in the reporting period: 1) unpermitted fill on Fairview Lake, and 2) unpermitted grading on Kelley Creek
	Educate landowners about the benefits of vegetated stream buffers	Work with local Soil & Water Conservation Districts to disseminate outreach materials	No additional resources needed	Ongoing program	None	None	Brochures are stocked by the Planning Counter front desk staff.
	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 is managed through EMSWCD StreamCare

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	Ongoing program	None	None	One report of suspected septage in a rural catch basin on Barbara Welch Rd (Kelley Ck). Bacteria results from catch basin water was low (<41 org/100ml). No visual evidence was seen of septic failure.
		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 program)	Annual inspection	None	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	Ongoing program	None	None	Brochures are stocked by the Planning Counter front desk staff.
Livestock manure	Address runoff issues through ODA Water Quality Program	Submit Water Quality Complaint Form to ODA	No additional resources needed	Report as needed	None	None	No livestock related complaints filed during reporting period.

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	Ongoing program	None	None	Variety of clean water messaging through web, radio, and television. Refer to NPDES Annual Report for the RCCRS Annual Report.
Illegal dumping	Enforce Nuisance Code	Report illegal dumping to County Nuisance Code Enforcement (See NPDES Stormwater Management Plan)	No additional resources needed	Ongoing program	None	None	Two reports of illegal dumping in Kelley Creek during reporting period: 1) 172nd and Foster; 2) 162nd and Clatsop. Inmate crews collected refuse. No water quality concern.
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. Follow up sampling showed high bacteria on Jenne Creek was reported to City of Portland Sanitarian.
Houseboats and marinas	Adopt building codes for floating homes	Review and adopt Portland building code for floating homes	No additional resources needed	Code development in 2018	Code development in 2018	Planning Commission review in 2015; Policy adoption by Board in 2015	Draft policies are prepared for review
	Research code changes to require pump-out stations at marinas	Identify triggers for implementing this requirement	No additional resources needed	Code development in 2018	Code development in 2018	Planning Commission review in 2015; Policy adoption by Board in 2015	Draft policies are prepared for review

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	Ongoing program	None	None	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	Ongoing program	None	None	Brochures are stocked by the Planning Counter front desk staff.
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 SWMP	See NDPES SWMP	See NDPES SWMP	See NPDES Annual Report
		Implement and update the Road Maintenance and Operations Manual	No additional resources needed	Ongoing program	None	None	Review of the RMOM is included as a BMP in the NPDES Stormwater Management Plan. See NPDES Annual Report.
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	Ongoing program	None	None	This is a County purchasing policy developed under the CountyToxics Reduction Plan.

	Ensure proper disposal of products containing mercury	Recycle products containing mercury	No additional resources needed	Ongoing program	None	None	This is a County purchasing policy developed under the CountyToxics Reduction Plan.
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