



**Multnomah County TMDL Implementation Plan
for the Lower Willamette and Sandy River Basins**

Annual Report 2010

November 2010

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 actions developed to reduce the TMDL pollutants:

- 1) Temperature
- 2) Bacteria
- 3) Sediment (Mercury, DDT and Dieldrin surrogate)

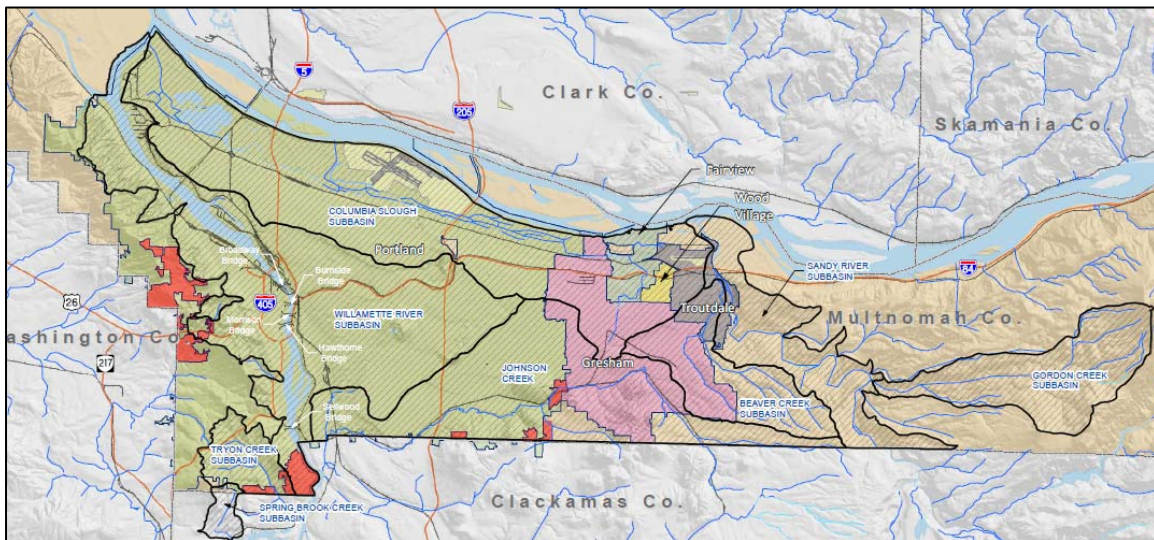
A summary of monitoring activities and adaptive management strategies and a matrix of implementation actions is included at the end of the report.

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.

In 2005 and 2006, the Oregon Department of Environmental Quality (DEQ) established TMDLs in the mainstem and tributaries of the Lower Willamette River and Sandy River, respectively (figure 1). The TMDL pollutants in the Multnomah County jurisdiction include bacteria, temperature, mercury, and the legacy pesticides, DDT and dieldrin (table 1).

Figure 1. 2005 and 2006 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. 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	Reduction	TMDL
Temperature	Sandy River	Riparian shade	<i>Sandy</i>
	Gordon Creek	Riparian shade	<i>Sandy</i>
	Beaver/Kelly Creek	Riparian shade	<i>Sandy</i>
	Lower Willamette River	n/a ¹	<i>L. Willamette</i>
	Johnson Creek	Riparian shade	<i>L. Willamette</i>
	Tryon Creek	n/a	<i>L. Willamette</i>
	Columbia Slough	n/a	<i>L. Willamette</i>
Bacteria	Beaver /Kelly Creek	86% load reduction	<i>Sandy</i>
	Johnson Creek	78% load reduction	<i>L. Willamette</i>
	Springbrook Creek	n/a	<i>L. Willamette</i>
Mercury	Lower Willamette River	27% load reduction*	<i>L. Willamette</i>
DDT, Dieldrin	Johnson Creek	78% urban stormwater 94% nonpoint sources	<i>L. Willamette</i>

¹n/a: not applicable. See details in plan regarding the particular conditions for each pollutant.

*phased TMDL. This is a guidance value, not a WLA

Temperature implementation action summary

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 Oregon Department of Agriculture (ODA) for enforcement of agricultural rules on agricultural lands and the Oregon Department of Forestry (ODF) for forest practices.

No permits were issued by the County during the reporting period regarding stream buffers (Significant Environmental Concern Permit). Also, no violations of forest or agricultural rules were observed by the County.

The County provided review of the East Multnomah Soil & Water Conservation District (EMSWCD) project to develop the Rural Living Handbook, a guidance document for good land management. The Handbook discusses the importance of water quality and stream health including the function and restoration of riparian buffers.

The EMSWCD Stream Care program works in the rural residential areas of unincorporated Multnomah County to restore riparian areas impacted by invasive weeds. Several acres of riparian buffers were cleared of blackberry and other invasive weeds, and replanted with native vegetation. In Johnson Creek, twenty-two acres of riparian area was planted, while in Beaver Creek and Gordon Creek (Sandy tributaries), three and four acres were planted, respectively. EMSWCD will manage the planted areas for five years.

Bacteria

Failing onsite septic systems and illegal dumping are concerns for the County regarding the bacteria loading in Beaver and Johnson Creeks. The County Road Maintenance crews work regularly in the basins maintaining the road surface, vegetation and drainage infrastructure in the right-of-way, and provide the Water Quality Program with visual observation of potential problems. Water Quality staff coordinate with the appropriate regulatory authorities.

During the past year, three separate incidences were reported in Johnson Creek. A llama farm had been dumping manure in the right-of-way during the previous year, and the County worked with ODA to resolve the issue. However, a second notice was needed in 2009 to stop this practice. The County Code Enforcement inspected two suspicious discharges to County ditches, and issued a warning to a resident discharging wash water from a washing machine using lye and soap to wash diesel soaked rags. A second discharge was confirmed by Portland BDS to be septage from a failing system. A notice of violation was issued to the resident.

No follow up monitoring of the 2007 DEQ monitoring in upper Johnson was conducted in light of the potential funding to EMSWCD from the ODA. EMSWCD has received the funding and began reach scale monitoring in September 2010. The County will provide monitoring support, but will pass the monitoring duties to EMSWCD.

EMSWCD will also provide education on septic system maintenance to residents through the new Rural Living Handbook. The County helped to review the development of the handbook. EMSWCD will publish and distribute the handbook next year.

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 to NOAA Fisheries for approval in May 2010. Although the manual is still under review by NOAA Fisheries, the County is implementing the practices to minimize and avoid sediment erosion in drainage and right-of-way areas.

Erosion problems from agricultural and forest lands are reported to the state regulatory authorities. Only one erosion control issue was reported to ODA in the Sandy basin, discharging sediment and runoff to a County ditch that flows to the Sandy mainstem.

Monitoring and Adaptive Management

Water quality monitoring in the County TMDL watersheds is a shared activity between the County and the EMSWCD. Monitoring is conducted in Beaver Creek and the upper Johnson Creek for the following: continuous temperature and periodic monitoring for field, conventional parameters, metals, and E. coli bacteria. The County conducts monitoring in lower Beaver Creek in conjunction with NPDES Phase I responsibilities. This ambient monitoring occurs four times per year, during wet and dry weather. Follow up to the upper Johnson Creek monitoring by DEQ during 2007-2008 will be conducted by the EMSWCD, and will provide reach scale data for temperature, field parameters, and E. coli bacteria.

The County's work towards the TMDLs has two different types of approaches: proactive activities, such as assisting with education efforts and implementing road maintenance BMPs, and reactive actions, such as investigating illegal dumping and failing septic systems. Ambient monitoring will provide long term trends which may inform the RMOM and NPDES Stormwater Plan effectiveness, while the EMSWCD reach scale monitoring may help inform future site level investigations.

Biological monitoring is also conducted in Beaver and upper Johnson Creek. The County was awarded a grant from the Oregon Watershed Enhancement Board to conduct a fish survey on both streams during 2010-2012. Macroinvertebrate monitoring occurs annually in both watersheds.

Two years of watershed-wide macroinvertebrate data has been collected on Johnson Creek through the Interjurisdictional Committee of Johnson Creek (IJC), a multi-jurisdictional committee to discuss and coordinate watershed scale issues and activities. The County participates regularly in the IJC. Through the IJC, data for freshwater mussels will also be available.

The County plans to continue TMDL implementation and monitoring through a coordinated effort of both rural and urban jurisdictions.

Multnomah County TMDL Implementation 2010

Source	Strategy	How	2010
<i>Temperature: Sandy River, Gordon Creek, Beaver Creek, Kelly Creek, Johnson Creek</i>			
1. Lack of stream shading	a. Ensure stream buffers requirements are met through plan review	Continue plan review for new development and redevelopment	No activity to report
	b. Enforce County stream buffer requirement for new development	Continue County code enforcement	No activity to report
	c. Address riparian vegetation in agricultural areas through Agricultural Water Quality Plans	Notify local Soil & Water Conservation Districts of runoff issues and ODA for enforcement on agricultural land	No activity to report
	e. Educate landowners and encourage riparian vegetation maintenance and restoration	Work with East Multnomah Soil & Water Conservation Districts to provide technical assistance and disseminate grant opportunities	EMSWCD restored riparian areas on rural residential property through StreamCare: Johnson Creek (22 ac); Beaver Creek (3 ac); Gordon Creek (4 ac). Assisted in the reviews of the Rural Living Handbook.
2. Improper implementation of timber harvest practices	a. Ensure permit violations are enforced	Notify Oregon Department of Forestry about suspected permit violations and other negative impacts from timber harvesting	No activity to report
<i>Bacteria: Beaver Creek, Kelly Creek, Johnson Creek</i>			
1. Failing septic systems	a. Conduct reach scale investigations in Johnson Creek	Follow the Agricultural Water Quality Plan baseline sampling (2007-2008) with analysis and additional investigative monitoring	EMSWCD has received funding for monitoring from ODA. Monitoring began in 9/10
	b. Conduct reach scale investigation in Beaver and Kelly Creek	Partner with City of Gresham to collect data	Data collected by City of Gresham under IGA
	b. Inspect OSS systems suspected of failure	County contracts with City of Portland sanitarian to provide inspection services	Failed septic system at SE 302nd discharging to Johnson Creek - BDS Notice of Violation (12/09)
	c. Educate homeowners about septic system maintenance	Partner with East Multnomah Soil & Water Conservation District (EMSWCD) to develop and disseminate educational materials	Assisted in reviews of the EMSWCD new Rural Living Handbook
2. Non-point source from agricultural lands	a. Conduct reach scale investigations based on TMDL study	Follow the Agricultural Water Quality Plan baseline sampling (2007-2008) with analysis and additional investigative monitoring	EMSWCD has received funding for monitoring from ODA. Monitoring began in 9/10
	b. Address runoff issues via Agricultural Water Quality Plans	Notify local Soil & Water Conservation Districts when problems are identified, or notify ODA for enforcement	Llama farm on Pleasant Home reported to DEQ (9/09)
3. Pet wastes	a. Educate pet owners	Partner with local Soil & Water Conservation Districts to develop and disseminate educational materials	Assisted in reviews of the EMSWCD new Rural Living Handbook
4. Illegal dumping	a. Enforce Solid Waste Nuisance ordinance	Report all illegal dumping to County nuisance code enforcement (See Stormwater Program components below)	Resident discharging lye soap to Johnson Creek stopped by County Code Enforcement (9/09)
<i>TSS surrogate (Mercury, DDT and Dieldrin): Lower Willamette, Johnson Creek</i>			
1. Non-point source of sediment from agricultural lands	a. Address agricultural runoff issues via Agricultural Water Quality Plans	Notify East Multnomah Soil & Water Conservation Districts of runoff issues and ODA for enforcement on agricultural land	Erosion issue reported to ODA: Fujii property on Sweetbriar Rd (5/09)
	b. Educate landowners and encourage riparian vegetation maintenance and restoration	Work with East Multnomah Soil & Water Conservation Districts to provide technical assistance and disseminate grant opportunities	Assisted in reviews of the EMSWCD new Rural Living Handbook
2. Soil erosion and sediment transport from urban area	a. Continue implementing the County Stormwater Management Plan in NPDES areas and RMOM county-wide	Implement BMPs according to plan	NPDES Annual Report is submitted with Co-permittee Annual Reports: City of Portland and City of Gresham
3. Mercury-containing products used in County practices	a. Reduce use of products containing mercury	Purchase alternative products that contain less or no mercury: <i>Specify low-mercury fluorescent lamps; Ensure that new thermostats and switches in vehicles and equipment are mercury-free.</i>	County Sustainability Program works with Purchasing for these products
	b. Ensure proper disposal of products containing mercury	Recycle products containing mercury: <i>Recycle all mercury-containing light tubes and non-alkaline batteries; Ensure best management practices for recycling of electronic waste</i>	County Sustainability Program works with Facilities Management and Fleet Management to recycle products containing mercury.
		Install dental amalgam separators in County dental clinics	Done

