

**Linn County Willamette River Basin  
TMDL Implementation Plan Annual Report**  
for the Period of March 2017 to March 2018

August 31, 2018

During the reporting period, Linn County completed the 10<sup>th</sup> year implementation period for the approved Willamette River Basin Total Maximum Daily Load (TMDL) Implementation Plan for Linn County.

The attached TMDL 5 year review 2015-2020 Management Strategy Matrix provides the content, goals and status of this program. Any changes in status or completion of goals or objectives are indicated in “red”.

As provided by the attached report, Linn County has:

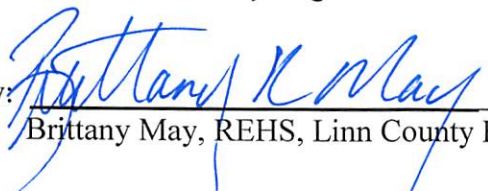
- Continued and maintained the operation of this TMDL Implementation Plan
- Completed capital improvement projects and implemented programs to reduce bacteria contamination.
- Completed projects for improvement of stormwater collection, management and treatment.
- Completed projects that resulted in riparian preservation and enhancement.
- Worked with watershed councils in development of watershed improvement plans.
- Worked with the Local Advisory Committee for the update of the South Santiam Agricultural Water Quality Plan
- Continued the development and funding of projects to provide future improvements in stormwater management and treatment, and river and stream restoration and enhancement. About 10 projects are scheduled for construction during the next two to three years.

Focus within the next reporting period will be to continue the successful maintenance and operation of this plan and to complete planned projects.

The TMDL matrix includes updates for 2015-2020 (shown in red, MS Word format).

For further information please contact:

Brittany May, REHS, Linn County Environmental Health, (541) 967-3821; bmay@co.linn.or.us; or Chuck Knoll, PE, Linn County Engineer Phone: (541) 967-3919; cknoll@co.linn.or.us.

Submitted by: 

Date: 8/31/2018

Brittany May, REHS, Linn County Environmental Health

**Attachment –**

Annual Update of the TMDL 5 year review Linn County 2015-2020 Management Strategy Matrix - Willamette River Basin Total Maximum Daily Load (TMDL) Implementation Plan

Pollutant	Department	Source	Management Strategy	Implementation Measures	Implementation Resources	Progress Measures	Timeline	Milestone	Status
Bacteria	Environmental Health	Failing Septic Systems	Ensure repair of failing systems.	<ul style="list-style-type: none"> <li>Respond to reports of failing systems</li> <li>Work with homeowner to set a timeline for repair</li> <li>Use existing enforcement methods to gain compliance</li> </ul>	Currently funded in budget	Track #s using complaint and permit databases	Ongoing	N/A	<b>Complete</b> For the time period of 3/4/2017-3/3/18, 69 repair permits have been issued. 17 complaints have been received regarding failing septic systems. 7 of these complaints have been resolved, 10 are in progress.
			Low cost loan program for septic system and household repairs implemented by Willamette Neighborhood Housing	Provide information to homeowners about the program	Currently funded via grant funds	Obtain data from Willamette Neighborhood Housing to track the number of systems repaired using this program	Ongoing	N/A	<b>Complete</b> 1 septic repair has been completed using these funds since 2015. A new funding program (Craft3) is now available and has been utilized for septic repairs in Linn County.
			Educate homeowners about system maintenance and how to detect failures.	<ul style="list-style-type: none"> <li>Provide written material with CSC</li> <li>Visit installed SF sites to assess O&amp;M status</li> </ul>	<ul style="list-style-type: none"> <li>\$ needed for printing costs</li> <li>Site visits contingent on intern availability</li> </ul>	<ul style="list-style-type: none"> <li>Track #s mailed</li> <li>Track site visits</li> <li>log data</li> </ul>	Begin at adoption of TMDL plan, then ongoing	N/A	<b>Complete</b> 113 CSC's issued from 3/4/2017-3/3/2018. For every CSC issued, written information on septic system maintenance is provided, or the system is part of our ongoing Operations and Maintenance Program.
			Ensure that selected residential and commercial systems are properly maintained.	Provide annual inspection or certification review for holding tanks, ATTs, sand and gravel filters, and low pressure distribution systems.	Currently funded in budget	Track inspections, certification reviews and compliance actions in database	Ongoing	N/A	<b>Complete</b> We annually review O&M reports of all systems in this program; currently, as of March 2017, there are 345 such systems being reviewed in Linn County.
			<ul style="list-style-type: none"> <li>Identify legacy septic systems (those which predate permit records) within urban growth boundaries and rural community centers.</li> <li>Encourage cities to do the same within city limits.</li> </ul>	<ul style="list-style-type: none"> <li>Use GIS to map permitted systems</li> <li>Compare to developed parcels</li> <li>Screen for soil type and lot size</li> <li>Quantify risk</li> <li>Map results</li> </ul>	<ul style="list-style-type: none"> <li>\$ needed for EH and GIS staff.</li> <li>Grant funds needed for public facilities expansion and improvements</li> </ul>	Prioritize areas based on risk. Map UGBs of largest cities first, count maps produced and delivered. Document areas served by new infrastructure.	Begin at adoption of TMDL plan, then ongoing; one large city per year, then multiple smaller cities each subsequent year, followed by rural community centers; complete in 5 yrs.	Convey map results to cities; offer to meet with city staff and other decision makers to discuss findings.	<b>Incomplete</b> Workload and staffing have been insufficient to devote time to this project. Work is planned to begin in the winter of 2019.
		Unidentified non-point sources	Participate in collaborative efforts with DEQ, ODA, cities, and allied agencies to discover unidentified non-point sources of bacterial contaminants	<ul style="list-style-type: none"> <li>Respond to citizen complaints</li> <li>Contact agencies with shared jurisdiction</li> <li>Develop joint action plans</li> </ul>	Not currently funded in budget; larger projects may require grant funding	Lead agency will track each complaint and document response efforts and results.	Ongoing as complaints are received	Develop joint response plan within 6 months of complaint validation.	<b>Complete</b> Joint action plan developed for Truax and Burkhart Creeks.

Pollutant	Department	Source	Management Strategy	Implementation Measures	Implementation Resources	Progress Measures	Timeline	Milestone	Status
Bacteria Cont.	Parks	Public Parks	Monitor on-site waste water system in all public facilities	Annual inspection & reporting of system status	Existing budget	Compliance with allowable waste strength limits through annual testing	Ongoing	Current, annual reporting to DEQ under WPCF permits	<b>Marina Waste System on Foster Lake Completed and functioning.</b>
				Work with other public agencies to design an on site system to treat RV waste					
			Qualify as clean marina criteria	Install marina waste system at Edgewater	Grants		Ongoing		<b>Marina Waste System on Foster Lake Constructed Summer 2017.</b>
			Limit and control pet waste	In parks with high visitation construct pet-off leash areas where pet waste can be easily cleaned up	Existing budget	Reduction in staff time necessary for cleanup.	Ongoing	Sign in all park facilities	<b>Ongoing</b>
			Provide floating restrooms on water ways and pump out stations at boat ramps	Grants	Increase number of people using waste facilities				<b>Complete/Ongoing</b>
	Provide fish cleaning stations and fish line recycling	Existing budget and grants, volunteers and agency partnering	Increase number of stations				<b>Completed on Foster Reservoir Operations are Ongoing</b>		
	Use Porta potties in parks during special events and at parks that do not have permanent restrooms	Rent porta potties from local company for parks that do not have Restrooms	Existing Budget	Number of Porta potties	Ongoing	Required and ongoing	<b>Complete/Ongoing Implemented through special use permits</b>		
		Require private parties holding special events to provide porta potties appropriate for the event size							
	Planning & Building	Stormwater from Residential, Commercial, and Industrial Development	Collect and treat stormwater with infiltration, filtration, and detention on-site	Require 1200C Permits for development disturbing one acre or more.	Existing budgets and development permit review.	Monitor permits and compliance with permit requirements.	Ongoing	N/A	<b>Complete</b> Ongoing implementation of development permit requirements
Require erosion control permits for development on steep slopes.				Existing budgets and development permit review.	Monitor permits and compliance with permit requirements.	Ongoing	N/A	<b>Complete</b> Erosion control measures required in conjunction with site development plan review and approval.	
Monitor permits issued within overlay districts such as the Willamette River Greenway and aggregate resource overlays.				Existing budgets and development permit review.	Monitor permits and compliance with permit requirements.	Ongoing	N/A	<b>Complete</b> Ongoing implementation of development permit requirements	

Pollutant	Department	Source	Management Strategy	Implementation Measures	Implementation Resources	Progress Measures	Timeline	Milestone	Status
Bacteria Cont.	Planning & Building Continued	Stormwater from Residential, Commercial, and Industrial Development Continued	Collect and treat stormwater with infiltration, filtration, and detention on-site continued	Promote erosion and stormwater BMP training and educational materials for County employees, contractors and property owners.	Not funded.	Development of educational materials and handouts.	N/A	Handouts provided during permitting process	<b>Not Implemented</b> Pending funding
			Publish erosion control and stormwater BMP information on County website.	Partially funded; Existing staffing	Publication of links to educational materials and TMDL Plan on County website.	N/A	Publication of links to educational materials and TMDL Plan on County website.	<b>Not Implemented</b> Pending development of educational materials and completion of TMDL Plan.	
			Ensure Land Development Code compliance with State stormwater regulations.	Amend Land Development Codes as necessary to comply with DLCDC and DEQ regulations.	Not funded	Monitor DLCDC and DEQ rules affecting erosion control and stormwater runoff.	Ongoing	N/A	<b>Not Implemented</b> Pending funding
			Ensure that all permitted development is properly connected to an approved method of sewage disposal as needed.	Coordinate development permit sign-off with EHP/DEQ agent; withhold certificate of occupancy until verification of EHP/DEQ compliance.	Existing budgets and development permit review.	Plumbing permits issued	Ongoing	N/A	<b>Complete</b> Ongoing implementation of development permit requirements; 325 septic permit LUCs between 3/1/2017 and 3/1/2018 333 plumbing permits issued in the same time frame.
	Roads	Ditches and Storm Water Facilities	Sources of bacteria from Agricultural Activities under the jurisdiction of the South Santiam Agricultural Water Quality Management Area (TMDL, Oregon Department of Agriculture).	Compliants sent to the road department are forwarded to the Oregon Department of Agriculture and Linn County Environmental Health Department	Not Applicable	Compliants sent to the road department are forwarded to the Oregon Department of Agriculture and Linn County Environmental Health Department	Ongoing	Not applicable	<b>Complete</b> - Linn County Engineer served on the Local Advisory Committee for the South Santiam Agricultural Water Quality Management Plan 2015 - 2017
			Sources of bacterial from residential and domestic activities are under the jurisdiction of Linn County Health Department	Any sources of bacterial contaminants along the roadside seen during road maintenance activities are report to Oregon department of Agriculture and Linn County Health Department		Any sources of bacterial contaminants along the roadside seen during road maintenance activities are report to Oregon department of Agriculture and Linn County Health Department			<b>Complete- see Table B</b> for projects that included stormwater collection retention and treatment
		Roadside Camping	Eliminate Roadside Camping in Quartzville Corridor	Addition of 3 roadside parking areas with Restrooms	2016-2017	Completion of project and Roadside Camping Ban	Complete by November 2017	Complete improvements and Ban	<b>Completed Ban of road side camping and construction of 3 roadside parking areas with restrooms in Fall 2016.</b>
		Illicit Discharges	Implement and Enforce existing County, State and Federal Regulations	Educate County Employees, establish reporting and response procedure	In existing budgets	Ongoing	Ongoing	Ongoing	<b>Table B</b>

Pollutant	Department	Source	Management Strategy	Implementation Measures	Implementation Resources	Progress Measures	Timeline	Milestone	Status	
Mercury	Environmental Health	Household Hazardous Waste (HHW) and Conditionally Exempt Small Quantity Generations (CESQGs)	Provide user-friendly disposal options for HHW and CESQGs	<ul style="list-style-type: none"> <li>Develop, approve, and implement HHW plan</li> <li>Conduct outreach to public and CESQGs for Hg and other accepted wastes</li> <li>Evaluate existing DEQ program elements</li> </ul>	DEQ solid waste grants, current budget, and rate base	To the extent possible, measure participation rates for dental offices and quantities of fluorescent tubes, and switches received	Begin with implementation of HHW plan (est. CY 2009), then ongoing.	Look for growth in amounts of Hg containing wastes disposed.	Complete/Ongoing Solid Waste Franchisee's in Linn County hold annual (or semi-annual) HHW events in the local communities.	
				<ul style="list-style-type: none"> <li>Develop local initiatives that build upon DEQ's existing statewide HHW/CEG program efforts</li> <li>Use DEQ ed/promo materials</li> </ul>						Consider survey of CEGs to gauge awareness, use and convenience of Hg disposal options.
	Parks	Public Facility Construction	Use BMP's to limit runoff contaminates	Work with Marine Patrol on signage	Where appropriate use silt fences, hay bales, and other silt containment devices	Existing budget	Monitor water during construction for silt plumes	Ongoing		Complete/Ongoing
					Limit speed around boating facilities					
					Provide signage and brochures at boat ramps		Signage present	Ongoing	Complete/Ongoing	
		Cars/Mass Transportation	Promote carpooling, public transportation as a strategy to reduce mercury	Collect extra vehicle fees at all campgrounds	Provide carpooling transportation	Funded	Fee presently enacted	Ongoing	Ongoing	
	Cooperation with Linn County public transportation for bus that runs to campgrounds and major trailheads for minimal fee									
	Planning & Building	Erosion from residential, commercial and industrial development	Limit erosion and mitigate the impacts of land disturbance on water quality.	Limit land disturbance activities; implement the Linn County Fill and Excavation Code; monitor 1200C permitting; and use BMPs for fill and excavation activities.	Existing budgets and development permit review.	Require fill and excavation permits pursuant to Linn County Code; report numbers of fill and excavation permits issued; refer developments disturbing one acre or more to DEQ to ensure compliance with 1200C requirements.	Ongoing	N/A	Complete	Ongoing implementation of development permit requirements: 7 fill and excavation permits issued between March 3, 2017 and March 3, 2018.

Pollutant	Department	Source	Management Strategy	Implementation Measures	Implementation Resources	Progress Measures	Timeline	Milestone	Status
Mercury Continued	Roads	Mercury is not present in Linn County Rural Roads. Mercury is not present above TMDL for Linn County Tributaries, Streams and Rivers as provided by ODEQ data. Mercury should not be on the TMDL for Linn County	Sources of Mercury (if any) from Agricultural Activities under the jurisdiction of the South Santiam Agricultural Water Quality Management Area (TMDL, Oregon Department of Agriculture).	Compliants sent to the road department are forwarded to the Oregon Department of Agriculture and Linn County Environmental Health Department and ODEQ	Not Applicable	Compliants sent to the road department are forwarded to the Oregon Department of Agriculture and Linn County Environmental Health Department, and ODEQ	Ongoing	Not applicable	Complete
			Sources of mercury from residential and domestic and commercial activities are under the jurisdiction of Linn County Health Department and ODEQ	Following Established BMP Manual adopted by Road Department	Covered under Road Maintenance Budget and Capital Improvement Plan Budget	Erosion and Sediment Control Plans and Monitoring Reports are prepared and followed for road maintenance and projects.		For control of sediments (which may impact any Hg if it were present), BMPs are developed and integrated into Road Department operations	Complete Linn County Roads maintains, and constructs new roads and bridges following established BMPs
		Soils and Other Unknown	Update and Improve strategy	Obtain copy of monitoring and sampling of Linn County rivers from ODEQ and update strategy	Ongoing	Ongoing	Ongoing		ODEQ has not completed any sampling of Linn County Rivers since 2015. Strategy to be updated when data is provided by ODEQ
Temperature	Parks	Public Facility Design	Design Facilities to limit impacts on water ways	<ul style="list-style-type: none"> <li>Provide adequate buffer areas to water ways.</li> <li>Slope facilities to avoid direct unfiltered runoff.</li> <li>Utilize available technologies such porous asphalt and concrete.</li> </ul>	Grants		Ongoing/New construction and renovations	Meet or exceed permit requirements.	Complete/Ongoing - (a) Three new road side parking areas constructed in 2016 includes stormwater collection, retention and treatment on Quartzville Road. (b) Foster Dam Road Parking Road to include stormwater treatment in 2018. (c) Developed 2017-2037 Linn County TSP in 2016 - 2017.
		Fertilizer and pesticides	Reduce dependency on fertilizers and pesticides in landscape areas	<ul style="list-style-type: none"> <li>Limit application of fertilizers and pesticides.</li> <li>Use alternative forms of weed control such as mechanical removal.</li> </ul>	Existing budget and grants	Decrease in the amount of fertilizer and pesticides applied	Annual monitoring of purchases and applications.	Eliminated or decreased use of pesticides	Complete
	Planning & Building	Solar radiation input due to loss of riparian shading	Protect riparian and wetland areas and buffers from vegetation loss.	<ul style="list-style-type: none"> <li>Implement existing Comprehensive Plan and Land Development Code provisions for riparian and wetland protection.</li> <li>Support and partner with watershed councils on waterway improvement projects.</li> </ul>	Existing budgets and development permit review.	Ensure compliance with LCC Chapter 934 Riparian and Wetland Setback Requirements	Ongoing	Monitor building permit compliance with development code standards	Complete Ongoing implementation of development standards
					Not funded	Review and approve watershed improvement project land use compatibility statements.	Ongoing	N/A	Complete Maintain county partnerships with watershed councils. 7 watershed and wetland improvement project LUCs approved in the last year.

Pollutant	Department	Source	Management Strategy	Implementation Measures	Implementation Resources	Progress Measures	Timeline	Milestone	Status
Temperature Continued	Planning & Building Cont.	Unidentified non-point sources	Protect riparian and wetland areas and buffers from vegetation loss.	Implement existing Comprehensive Plan and Land Development Code provisions for riparian and wetland protection.	Existing budgets and development permit review.	Ensure compliance with LCC Chapter 934 Riparian and Wetland Setback Requirements	Ongoing	Monitor building permit compliance with development code standards	<b>Complete</b> Ongoing implementation of development standards
	Roads	Sources of Temperature are primarily from Agricultural Activities (irrigation and flow and stream side habitat) under the jurisdiction of the South Santiam Agricultural Water Quality Management Area (TMDL, Oregon Department of Agriculture).	Maintain vegetation and trees near streams and rivers when possible regarding road maintenance and improvement projects	Maintain vegetation and trees near streams and rivers when possible regarding road maintenance and improvement projects	Covered under Road Maintenance Budget and Capital Improvement Plan Budget	Not Applicable since the amount of shaded area is so small compared to water bodies. Effectiveness is best shown by review of capital improvement project design under approval of Linn County Engineer	BMPs have been developed and integrated into Road Department operations and are ongoing	BMPs have been developed and integrated into Road Department operations	<b>Complete/Ongoing</b> Linn County Roads maintains, and constructs new roads and bridges following established BMPs
		Riparian Preservation and Enhancement	Develop, design, fund and construct restorations	Partnerships with Watershed Councils, Soil and Water Conservation District, and Linn County Improvement Projects	Covered under County Engineer Program and Road Maintenance Budget and Capital Improvement Plan Budget	Actual Projects Completed	Complete funded projects in 2015 to 2020 period. Develop and obtain additional funding for improvements for 2020+	~6 projects completed in 2010 to 2015	<b>See Table B</b>
		Riparian Preservation and Enhancement	Stormwater Conveyance Systems Map	Linn County GIS Ella Maps	Ongoing	Ongoing	Ongoing	Implemented prior to 2015	<b>Table B</b>
		Riparian Preservation and Enhancement	Riparian Vegetation Inventory	Linn County GIS Ella Maps	Ongoing	Ongoing	Ongoing	Implemented prior to 2015	<b>Table B</b>
		Riparian Preservation and Enhancement	Post Construction Ordinance and Plan for meeting predevelopment hydrology	Linn County Drainage and Flood Code and Program, Linn County Access, Development and Driveway Review for Stormwater and Riparian buffer	Ongoing	Ongoing	Ongoing	Implemented prior to 2015	<b>Table B</b>
		Riparian Preservation and Enhancement	Educational Outreach	In partnership with Watershed Councils and Soil Conservation District and South Santiam Area Management Program as well as for Separate Linn County Projects	Ongoing	Ongoing	Ongoing	Implemented prior to 2015	<b>TABLE B - Linn County Engineer worked with North Santiam Watershed Council to develop 10 year watershed improvement plan 2016 - 2017</b>



*The following Projects were completed or will be implemented following Best Management Practices which are designed to meet and implement management strategies for improvement or maintenance of levels of Bacteria, Mercury, and Temperature as well as other Pollutants of concern:*

**Table B**

<i>Linn County Road Department Projects 2015 - 2020</i>	<b>Status</b>
Implementation of Best Management Practices for Road Maintenance and Construction	Implemented 2015
North Santiam Stayton Scio Bridge Scour Protection including bank stabilization, root wads and riparian planting	Constructed 2015 - 2017
Shimanek Bridge Drive Bank Restoration and Enhancement Bank Stabilization including root wads (woody Debris) and riparian planting and stormwater management improvements	Constructed 2016
Quartzville Road Improvement Project including Stormwater Management and Treatment, three parking lots and restrooms	Constructed 2016
Truax Creek Old Salem Road Bridge Replacement Including hydraulic restoration and riparian planting and stormwater management and treatment	Construction 2017 - 2018
Riverside Drive Improvement Project to provide 2.5 miles of pavement widening combined with stormwater management, retention and treatment improvements	Constructed 2017 - 2018
Riverside Drive Improvement Project Phase 2 to provide additional 4 miles of pavement widening combined with Stormwater management and treatment improvements	Construction 2019 - 2010
Brownsville Road Improvement Project to provide pavement widening combined with Stormwater Management and Treatment improvements	Construction 2020
5 Bridge Replacement Projects that will include stream enhancement to meet SLOPES V Biological Criteria	Construction 2019 - 2012
Little Rock Creek Morrison Road Fish Passage and Stream Restoration for tributary of North Santiam River	Construction 2019
Kingston Jordon Bear Branch Creek Fish Passage and Stream Enhancement Project	Construction 2021
Foster Dam Road Improvements combined with Stormwater Management and Treatment improvements	Construction by June 2019
Mill City Improvement Project combined with Stormwater Management and Treatment improvements	Construction by 2022
North River Drive Improvement Project combined with Stormwater Management and Treatment improvements	Construction 2019 - 2010
Seven Mile Lane Improvement Project combined with Stormwater Management and Treatment improvements	Construction 2018 - 2019
Brownsville Road Improvement Project combined with Stormwater Management and Treatment improvements	Construction 2010

*Note: Other Projects are under development - Contact Linn County Engineer for additional information*