

CITY OF MILLERSBURG

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MILLERSBURG TOTAL MAXIMUM DAILY LOAD (TMDL) IMPLEMENTATION PLAN

In August 2007, Millersburg officials met with Oregon Department of Environmental Quality (DEQ) officials Jared Rubin and Rachel Burr to discuss the process and requirements for preparing a TMDL Implementation Plan for the City of Millersburg in conformance with the federal Clean Water Act and Oregon Administrative Rule 340-042-0030. It was determined at that meeting that a summary of what the City is doing and will do to minimize introduction of the three main pollutants affecting the Willamette River Basin would constitute a TMDL Implementation Plan that would seek to maintain and improve water quality within the City and the Upper Willamette Basin.

TMDL REQUIREMENTS

The Clean Water Act of 1977 “authorizes the U.S. Environmental Protection Agency (EPA) to ‘restore and maintain the physical, chemical, and biological integrity of all waters of the nation’” (DEQ, 2004). In response to the Clean Water Act, the EPA designated state agencies to develop water quality standards, perform water quality monitoring to understand current conditions, determine sources of pollution, and develop TMDLs as a tool to improve water quality. As a component of the overall effort to protect and restore the beneficial uses of Oregon’s water bodies, the DEQ issued TMDLs for the entire Willamette Basin.

The TMDL process begins when a stream, lake, or river does not meet water quality standards and is classified as water quality-limited on the state’s 303(d) list. TMDLs identify the maximum amount of a specific pollutant that can be present in a water body without violating water quality standards. This is known as the loading capacity.

After extensive water quality monitoring and modeling efforts, TMDLs establish the difference between the loading capacity and the current pollutant load. TMDLs are expressed as numeric standards or percent pollutant reductions that need to be met to bring water bodies into compliance with water quality standards. The difference between the current load and the loading capacity is known as excess load (DEQ, 2004)

The excess load is split up between the different sources of pollution according to their contribution to the overall pollution load. Any difference between the waterway’s loading capacity and the current pollutant load must be mitigated by pollution reduction activities. The DEQ develops waste load allocations for point sources such as wastewater treatment plants and industrial discharges. They develop load allocations for non-point pollution from agricultural, urban, and forestry lands such as erosion, animal wastes, and stormwater.

The Oregon Administrative Rule (OAR 340-042-0080) that addresses TMDLs requires local governments and other agencies to develop TMDL Implementation Plans. Responsible parties that are able to implement pollution reduction strategies are classified as Designated Management Agencies (DMAs). In the Willamette Basin, DMAs include federal agencies such as the Bureau of Land Management, state agencies such as the Department of Forestry and the Department of Agriculture, counties, cities, and others. According to the OARs, TMDL Implementation Plans must include the following five elements:

1. Management strategies that will be used to achieve load allocations
2. A timeline and schedule to achieve measurable milestones
3. A plan for periodic review and revision of the implementation plan
4. Evidence of compliance with applicable statewide land use requirements
5. Any other analyses or information as specified in the Water Quality Management Plan

The City of Millersburg is a Designated Management Agency (DMA) under the Clean Water Act that has legal authority over land use on 2,850 acres within the City Limits. This document is the total maximum daily load (TMDL) Implementation Plan for the City of Millersburg. This Plan describes the strategies that the City will implement to reduce temperature, bacteria, and mercury pollution in the Upper Willamette River Basin of the Willamette River. Implementation Plans from designated management agencies (DMAs) are required to comply with the Willamette Basin TMDL order to help meet pollutant load allocations for the Upper Willamette River Basin as approved by the US Environmental Protection Agency (EPA) in September 2006.

On-going and intended actions are listed. The attached matrix summarizes activity that the City of Millersburg will undertake to meet TMDL requirements and also serves as a reporting mechanism. The City will report on implementation progress on an annual basis by filling in the 'status' column and submitting that to DEQ. Every 5 years there will be a more thorough evaluation of the plan to ensure that the measures taken are appropriate and adequate given the water quality concerns.

It is clear that the City of Millersburg does not have the resources to test or to determine the extent of pollution in the City and must rely on information provided by other state and local agencies. The City has, however, undertaken many measures to insure that the quality of the natural resources in the area is not degraded, including the Willamette River.

MILLERSBURG, OREGON

Millersburg is located in Linn County, immediately north of the City of Albany. A contiguous City Limits boundary along Cox Creek divides the two Cities. The City is situated between the Interstate 5 freeway and the Willamette River. It is also located between the Union Pacific Railroad on the east and the Burlington Northern Railroad on the west.

The City is approximately a mile wide in the east-west direction and three and one-half miles long in the north-south direction. It contains 2,850 acres and has a 2007 resident population of 1,030 and an employment population of approximately 2,800.

The City contains the major industrial employment companies for the Albany-Millersburg Area and is a dominant factor in the economy of the whole Mid-Willamette Valley. Although the City is a major industrial center, its area is almost equally divided between industrial and residential land uses.

The primary issue relative to growth and development of the Millersburg area depends upon the relationship between the carrying capacity of the area's natural resources and the availability of public facilities, services and utilities.

The City is located at the northern end of the Upper Willamette Basin near the confluence with the Santiam River. The Willamette River forms a portion of the westerly boundary of the City between river-mile 15.5 and 17.75 for approximately 2.25 miles. The City is also traversed by four creeks that flow east to west into a series of small lakes before entering the Willamette River. From south to north they are Cox Creek, Burkhart Creek, Truax Creek and Murder Creek. Crooks Creek located at the northern end of the City is an intermittent stream that flows northward and enters the Willamette River immediately adjacent to the mouth of the Santiam River.

Millersburg's adjacency to the Willamette River and the four creeks that traverse the City places water quality maintenance high on the priority list of issues facing the community. The three pollutants of temperature, bacteria and mercury identified in the DEQ 303(d) are addressed in priority order by the City. Temperature reductions are currently being directly addressed. Potential bacteria sources are being eliminated. Potential Mercury contamination is the most difficult source to specifically identify although it is being controlled by erosion control methods.

Affirmative Actions

There are currently many water quality efforts underway in Millersburg. Millersburg's Development Code includes erosion control standards for new development and an ordinance encouraging the retention of natural vegetation on construction sites. The City has also adopted a pet waste pick-up program. Most importantly, the City has joined Albany to develop a Wetland Treatment system to cool water before entering the Willamette River.

The following is a summary of water quality related measures and documents already in place within the City of Millersburg.

Ordinances, Programs & Facilities

- Millersburg Comprehensive Plan
- Millersburg Land Use Development Code
- Standard Construction Specifications
- Millersburg Water System Master Plan
- Willamette River Greenway Standards
- Wetland & Riparian Area Standards
- Flood Hazard Area Standards
- Albany-Millersburg Wetland Treatment System Plan
- Millersburg Drainage System Plan
- Albany-Millersburg Municipal Water System
- Albany-Millersburg Municipal Wastewater System

Pollutant Reduction Practices & Focus Areas

- Riparian Protection and Restoration
- Stormwater Planning and Management
- Erosion Control
- Illegal Discharges
- Animal Waste Management
- Information Gathering

- Pet waste pick-up in city parks.
- Landscaping Standards
- Erosion Control Standards

Septic System Conversion
Well Water System Conversion

Many water quality protection improvements have been made by the City's existing water quality programs and activities. Additional water quality protection needs are identified in related water quality materials including the Willamette Basin TMDLs. Analysis of existing policies and programs indicates that Millersburg should focus on protecting and restoring streamside vegetation and also strengthening the requirements designed to minimize erosion. These efforts will be integrated into the City's stormwater planning efforts and other related plans and programs.

WILLAMETTE BASIN TMDL POLLUTANTS

Temperature, bacteria, and mercury are the three pollutants that have been identified for consideration in all of the Willamette Basin TMDLs. Although other pollutants are included in subbasin TMDLs, these three pollutants are the major concerns throughout the entire Willamette Basin.

The following summaries the three TMDL pollutants. More in-depth information on these pollutants and the processes used to develop the TMDLs can be found in Chapters 2, 3, and 4 of the *Willamette Basin TMDL* (DEQ, 2006).

POLLUTANT SOURCE REDUCTION NEEDS

Temperature Sources

- Streamside vegetation removal
- Wastewater discharge
- Industrial point sources
- Channel modification
- Water extraction
- Disruption of seasonal cooling and warming patterns
- Dam and reservoir operations

Bacteria Sources

- Stormwater discharge
- Construction site erosion and runoff
- Failing septic systems
- Illegal discharges
- Wastewater treatment plants and other point sources
- Treatment failures
- Sewer overflows during wet weather
- Surface runoff
- Farm & domestic animal wastes

Mercury Sources

- Erosion from urban, farm, and forest land
- Construction site erosion and runoff
- Atmospheric deposition and stormwater runoff

Other (Mercury users, fluorescent light bulbs, etc.)
Point sources
Naturally occurring sources
Mines

Based on the Water Quality Management Plan in the Willamette Basin TMDLs, materials from the DEQ, EPA, and other sources, there are seven major focus areas in the Upper Willamette Basin. These represent the areas that should be considered in protecting and restoring water quality. The level of priority for actions is specific to each jurisdiction. The seven major water quality focus areas are:

Animal Waste Management
Septic System Management
Erosion Prevention and Sediment Control
Illegal Discharge
Riparian Protection and Restoration
Stormwater Planning and Management
Education/Training

MILLERSBURG TMDL IMPLEMENTATION STRATEGIES

The City's Implementation Plan specifies what the City plans to do to address TMDL issues. This section and the matrix at the end of this document summarize the City of Millersburg strategies that will be implemented. The overarching goal of this Implementation Plan is to minimize or, wherever possible, eliminate heat, bacteria, and mercury contributions to surface waters within the jurisdictional control of the City of Millersburg.

To reduce contributions of heat, bacteria, and mercury, Millersburg will pursue the following protection actions:

Water Quality Efforts for Temperature Improvements

Unprotected Streamside Vegetation

Provide technical assistance to landowners along waterways
Demonstrate riparian area, wetland, and floodplain protection benefits
Enforce the stream, drainageway and riparian buffer ordinance standards
Educate landowners about the value of riparian areas
Initiate a tree planting program along waterways

High priority riparian areas

Determine areas that will yield a large benefit if protected or restored
Establish framework to identify critical riparian areas
Determine the feasibility of acquiring critical lands

Water Quality Efforts for Bacteria Improvements

Proper Animal Waste Management

Enforce standards for farm animal management
Provide bags for pet owners to pick-up after pets in City Parks
Erect signs to inform pet owners of the problems related to pet waste
Provide educational materials about proper manure management

Erosion Prevention & Sediment Control At New Construction Sites

- Maintain erosion prevention and sediment control regulations
- Provide incentives to developers who meet certain erosion control qualifications
- Enforce site plan review procedures for erosion control
- Provide site inspection and monitoring procedures

Septic System Improvements & Conversion

- Inventory existing septic systems
- Monitor and require correction of failing systems
- Offer assistance to convert a failing system to the Municipal Sewer System
- Educate homeowners on proper septic maintenance and inspection

Detect & Eliminate Illegal Discharges Into Waterways

- Develop enforcement ordinances to protect waterways.
- Promote proper waste management through education
- Establish an illegal dumping control program
- Provide alternative waste disposal opportunities
- Provide informational materials on the hazards of improper waste disposal
- Develop a process to respond to and document complaints of illegal discharges

Stormwater System

- Develop a stormwater system master plan
- Integrate water quality protection and natural resource preservation
- Enforce existing stormwater runoff and detention regulations.
- Implement stormwater facility operations and maintenance procedures
- Encourage stormwater features for existing open space or landscaped areas

Bacteria Hazards Protection

- Prepare a notification process to notify the public of high bacteria levels
- Maintain and distribute educational materials on bacteria dangers.

Water Quality Efforts for Mercury Improvements

Erosion Prevention & Sediment

- Enforce erosion prevention and sediment control guidelines for new construction
- Utilize site plan review procedures that require erosion controls
- Establish site inspection and monitoring procedures

Disposal & Recycling Programs

- Require recycling of fluorescent light bulbs.
- Require proper disposal of materials containing mercury elements.
- Implement mercury protections programs required by the state.

Fish Consumption Notifications

- Establish a process to notify citizens of fish consumption advisories.
- Maintain and distribute educational materials on fish consumption advisories.

Stormwater Detention Facilities

- Enforce existing stormwater runoff and detention regulations.
- Implement stormwater facility operations and maintenance procedures
- Encourage stormwater features on existing open space or landscaped areas

General Water Quality Efforts

- Improve Monitoring capabilities.
- Enforce Water Quality Standards.
- Encourage reporting of water quality violations.
- Seek Non-point Source Grant Opportunities.
- Establish an inventory of non-point source grant opportunities

Apply collectively for region-wide project funding.
Coordinate with Regional Water Quality Agencies.
Coordinate with local disposal firm to provide free hazardous waste disposal and advertise existing programs
Encourage and support public employee pollution prevention training programs
Promote and support local water quality successes in local media

In summary Millersburg selected the previous strategies to meet the following objectives:

- Reduce heat loads
- Reduce bacteria loading
- Minimize mercury contributions.

Temperature

Temperature is the most prevalent pollutant in the Upper Willamette Basin. With Millersburg's proximity to the Willamette River and its 303(d) listing for temperature, Millersburg emphasizes strategies to reduce heat loading to tributaries of the Willamette River.

Development within the City together with construction improvements within the City's road system has also depleted some of the shading provided by riparian vegetation along the creeks that are tributary to the Willamette River.

Reduced shading vegetation given elevated summer temperatures in the Upper Willamette Basin is the primary reason for the Section 303(d) listing. Most of the river and tributary stream banks within City limits are lined with mature trees. The City's Comprehensive Plan and Development Code contains riparian setback requirements designed to maintain an adequate width of riparian vegetation.

Bacteria

The City's Land Development Code contains requirements that new development be served by a sanitary sewer system (Millersburg Land Use Development Code, 2006,). Costs for new development to connect to the sanitary sewer system are borne by the developer.

About 85% of the City's current dwellings are served by the sewer system. The rest of the residences have individual, privately owned septic tanks. The City's long-term goal is to have all residences served by the sewer system as specified in the Millersburg Comprehensive Plan and Land Use Development Code.

The City also plans to include information about bacterial water contamination concerns and advise citizens as to how to treat animal feces to minimize or avoid health problems. The City will also provide information to homeowners on maintaining their septic systems to avoid failures that could result in improperly treated sewage entering the river.

Mercury

Aside from direct industrial effluent mercury generally comes from natural soil and rock sources that are released through erosion and/or acid precipitation. Mercury levels have been present only in trace amounts even though considerable erosion occurs in the watershed as evidenced by high river turbidity levels during winter storm events. Stormwater runoff may be a source of mercury in the Willamette Basin. Mercury may be atmospherically deposited on the landscape and then get washed into streams along with soil particles. The prevailing winds from Asia across the Pacific Ocean may

drop mercury on the land here in Oregon. Mercury is also found in our soils naturally, albeit at very low concentrations. Limiting soil erosion also limits potential mercury contamination.

While accelerated soil erosion is not likely to affect mercury levels in the Millersburg, it is still in the City's interest to limit erosion to maintain the clear and clean water it currently enjoys through most of the year. The City's Land Development Code has requirements for geotechnical evaluation on new development. Under DEQ rules, regardless of slope, a 1200-C stormwater permit (with an approved stormwater management plan) is required for any developments over one acre. Additionally, the City has specific erosion control requirements in its Construction Standard Construction including installation of silt-fences or other sediment barriers, mulching and seeding of created bare soil and avoidance of excavation during the wet season for all new construction or reconstruction and for improvements to the City's infrastructure. The costs of erosion control plans and implementing erosion controls are paid for by the developer.

Concluding Summary:

The City of Millersburg has maintained an on-going effort to protect all of the waterways within the City's jurisdiction and has maintained an association with local, regional and statewide agencies and organizations to assure coordination and implementation of clean water strategies.

All of the strategies outlined herein and listed in the matrix are consistent with all of the existing Millersburg land use plans and environmental regulations. The City will maintain consistency with local and statewide land use and environmental laws in any future actions related to TMDL implementation.

The City's most important water quality effort to date is a cooperative association with the City of Albany together with local industries to develop a Wetland Treatment system to cool process water before entering the Willamette River. This program is part of the City's temperature reduction effort that is included under the Temperature Pollutant Sources, Industrial Process Water Discharges in the Matrix.

Implementation Matrix

The following matrix summarize the strategies that are or will be will be implemented as funding allows. The matrix displays the pollutant being addressed, the strategy to address it, when that strategy will be implemented, and how to measure progress and successful implementation. This matrix also serves as a tracking tool for reporting to the DEQ.

TMDL Implementation Tracking Matrix: Millersburg, Oregon

Millersburg has legal authority over land use on 2,850 acres within the City Limits. The Willamette River forms the western boundary of the City between river-mile 15.5 and 17.75 for approximately 2.25 miles.

POLLUTANT <i>Pollutants Addressed by the TMDL.</i>	POLLUTANT SOURCES	STRATEGY <i>What Millersburg is doing and will do to reduce pollution from this source.</i>	ACTIONS <i>Specific Implementation Measures.</i>	BENCHMARKS <i>Intermediate indicators of progress.</i>	TIMELINE <i>Beginning and completion dates.</i>	MEASURE <i>Demonstrate implementation or completion of the strategy.</i>	STATUS
TEMPERATURE	Solar Radiation	Maintain existing riparian plantings and shading vegetation.	Code Enforcement of riparian and vegetative protections.	Compare aerial photographs at periodic intervals to determine the state of and changes to riparian areas.	Began with City's first Development Code in 1984 & 2006 and will be on-going.	Yearly review of standards compliance.	
		Encourage riparian plantings and shading vegetation on private property.	Contact property owners with un-vegetated drainage ways. Provide guidance to owners when requested.	Monitor new growth in riparian areas by visiting planting sites annually	Seek public information documents for distribution Immediately. An on-going project	Yearly review of private participation.	
	Impervious Surface Runoff	Reduce paving and roof areas where applicable to reduce stormwater temperature increases.	Enforce maximum ground coverage standards.	Monitor subdivision and building plans.	In progress as part of the City's approval and permitting process.	Yearly review of compliance.	
	Industrial Process Water Discharges	Enforce regulations for industrial process water cooling.	Enforce permitting requirements and continue to work with industries to reduce discharges.	Monitor compliance with permitting standards.	In progress as part of the City's approval and permitting process	Yearly review of compliance.	
BACTERIA	About 15% of the City's dwellings are on individual septic systems.	Enforce septic system maintenance and conversion to municipal sewer system.	Continue septic system inspections and expansion of municipal sewer system.	Monitor septic system compliance & document sewer system extensions	Ongoing Monitoring and Incremental expansion of municipal sewer by 2020.	Immediate goal will be the elimination of septic systems. On-going process.	
	Pet and animal waste	Continue to supply pet waste pickup stations. Enforce farm animal regulations	City is providing waste collection stations at City Park. Code enforcement of farm animal raising.	Monitor usage of waste collection stations and farm animal compliance with City Code.	On-going. To be continued indefinitely.	Increased public awareness related to animal waste problems and provision of additional collection points for pet waste.	
	Garbage spills	Encourage waste collection companies to cover waste bins during transit	Enforce current traffic code requiring covered loads	Monitor roadside debris accumulations	On-going. To be continued indefinitely.	Demonstrated reduction of roadside debris.	
MERCURY	Erosion and sedimentation containing mercury from existing background sources and introduced deposits from air and industries.	Eliminate erosion by reducing soil displacements and controlling runoff from excavations by utilizing silt fences, mulching, seeding, avoidance of excavations during wet times	Enforce Code standards for excavations and grading.	Building inspector will monitor compliance with Code standards.	On-going. To be continued indefinitely	All geotechnical evaluations are completed and one hundred percent compliance with Code requirements.	
			Require & monitor 1200-C permits for developments.	Demonstrate that 100% of new developments over one acre obtain 1200-C permits.	On-going. To be continued indefinitely	Maintain completion records of all issued permits in a Record File.	
INTERRELATED FACTORS	Stormwater Discharge A contributing source factor for all three Identified Pollutants.	Provide stormwater detention and treatment.	Enforce existing regulations & maintenance inspections of existing facilities.	Monitor effectiveness of existing regulations and maintenance program.	On-going. To be continued indefinitely	Demonstrated effectiveness of the regulation and enforcement program	
		Prepare Stormwater Master Plan.	Preparation of a Stormwater Master Plan	Seek funding for a Stormwater Master Plan	Begin Research in 2009	Initiation and completion of a Millersburg Stormwater Master Plan.	
	Disposal & Recycling	Prevent Hazardous Waste & Illegal Discharges and Encourage Recycling.	Enforce existing disposal regulations and support existing recycling efforts.	Monitor and Record events And maintain a Record File of activities.	On-going. To be continued indefinitely	Review the Record File annually and report the findings to the City Council for implementation of needed adjustments.	
	Information Program for Clean Water Act and potential Pollutants.	Implement outreach and education activities for local industries and the general public	Contact DEQ for information sources and training programs.	Accumulation of available data.	Begin in 2009 and continue as an on-going program.	Council approval of an on-going Clean Water improvement program.	
	Funding	Provide funding for planning and implementation of needed Programs to address pollution.	Seek funding sources.	Prepare a working list of potential funding sources.	Begin Research in 2009	Achieve funding to implement planning and implementation of needed programs	
Intergovernmental Cooperation	Achieve economies and expanded informational base through cooperative associations.	Contact local and statewide organizations addressing environmental issues.	Accumulation of contacts.	Begin in 2009 and continue as an on-going program.	Prepare an interrelated file of contacts addressing environmental issues.		