



## CITY OF WESTFIR

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### **Westfir Total Maximum Daily Load (TMDL) Implementation Plan**

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#### **Introduction**

On June 1, 2005, Westfir City Council officials met with Oregon Department of Environmental Quality (DEQ) officials Greg Aldrich and Jared Rubin to determine what the City of Westfir (the city) needs to do in order to meet the requirements of the federal Clean Water Act and Oregon Administrative Rule 340-042-0030 to produce a TMDL Implementation Plan. It was determined at that meeting that a brief explanation 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, in the interest of maintaining and improving water quality within the city limits and the watershed as a whole.

This narrative and matrix serves as the City's Implementation Plan, listing on-going and intended actions. The attached matrix summarizes activity that the City of Westfir will undertake to meet TMDL requirements and also serves as a reporting mechanism. The City will annually report on implementation progress by filling in the 'status' column and submitting that to DEQ.

#### **Background**

Along with other cities in the Willamette Basin, the City of Westfir is a Designated Management Agency under the Clean Water Act in that it has legal authority over land use on the 188 acres within the City's limits, and in that it operates a sewage treatment plant with a permit to discharge treated effluent into the North Fork of the Middle Fork Willamette River, which flows for about 1.7 miles through the length of the City. The North Fork is currently listed as a water quality limited river (as per section 303 (d) of the Clean Water Act) due to elevated summer temperatures.

The City is located at the lower end of the North Fork near the confluence with the Middle Fork of the Willamette River, which is not currently on the section 303 (d) list of water quality limited streams. During summer flow periods, the North Fork flows into the City at approximately 70 degrees, six degrees warmer than is needed for adequate fish habitat. The North Fork used to contain populations of Chinook Salmon, and likely bull trout, which were extirpated by downstream dam construction in the 1960's, but the Oregon Department of Fish and Wildlife has been trucking adult salmon from below the Dexter Dam to points about 15 miles upstream of the City for about the last five years. These fish have been documented to have successfully spawned. The rise in summer

temperatures in the river is apparently due to solar radiation input from past, upstream forest management. Almost the entire North Fork watershed is within and managed by the Willamette National Forest. Development within the City along with the construction and maintenance of county roads has also impacted the amount of riparian vegetation along the North Fork.

### **Temperature**

The City's sewage effluent discharge is apparently of little concern from a temperature standpoint given its low volume compared to average flow volumes (at about 12,000 gallons per day, it is less than one tenth of one percent of the average low flow of 90 cubic feet per second) and the fact that the average effluent temperature (69.1, 69.7, and 65.5 respectively during July, August, and September of 2004) is typically somewhat less than the river temperature. Nonetheless, the City is currently monitoring effluent and river temperatures as a condition of its recently renewed DEQ discharge permit to determine if there is a possibility of an increase in river temperature due to the discharge of effluent.

Of greater concern is the maintenance of shading vegetation, given elevated summer temperatures in the North Fork as the primary reason for the Section 303(d) listing. Most of the river's banks within City limits (with some exceptions within the abandoned millsite in the eastern end of the City) are lined with mature trees. The City's Comprehensive Plan (pgs. 32, 50 and 59) contains riparian setback requirements designed to maintain an adequate width of riparian vegetation. Approximately 90 percent of the North Fork's riparian length within City limits is currently zoned as open space (see Westfir Comprehensive Plan Map-Plan Designations), but the ability to develop an adequate (at least 50 feet) width of riparian vegetation is limited by the fact that County Roads (nearly all roads and streets within the city are owned and maintained by Lane County) are located within 50 feet of the river along 41 percent of the river banks. The City also plans to initiate discussions with the Middle Fork Watershed Council and owners of the mill site property regarding the possibilities to obtain grant funding for riparian vegetation in those areas within the mill site that do not now contain mature vegetation. Such opportunities may be limited as much of the areas in question do contain early-successional riparian vegetation that requires only time to attain the desired stature. Watershed council projects will most likely be funded by grants with the city providing in-kind contributions.

### **Bacteria**

The City chlorinates its sewage effluent and routine effluent monitoring indicates this effort is successful in removing bacteria. The City's sewage treatment plant is old and outdated and the City has developed a plan for plant replacement and has recently secured grant funding to do so. The new plant will be paid for by the grant and likely contain an ultraviolet light system for effluent sterilization to avoid residual chlorine concerns. The new plant will be constructed to provide for expansion should the mill site be developed in the future. The City's Land Development Code contains requirements that new development be served by a sanitary sewer system (Westfir Land Development Code, 2002, page 172 section 28.12.0). Costs for new development to connect to the sanitary sewer system are borne by the developer.

Only about half of the City's current dwellings (the Hemlock neighborhood) 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 (Comprehensive Plan, page 71).

The City also plans to include in its monthly newsletter information about bacterial water contamination concerns and advise citizens as to how to treat pet feces to minimize or avoid such concerns. These notices will also include actions homeowners can take to properly maintain their septic systems and avoid failures, which could result in improperly treated sewage entering the river.

### **Mercury**

Aside from direct industrial effluent, as in mine drainage or manufacturing (none of which exist in the North Fork watershed) mercury generally comes from natural sources (soil and rock) that are mobilized through erosion and/or acid precipitation. The City has been testing its raw water source (the North Fork River) for the presence of heavy metals, including mercury, for over two decades. 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. Mercury is not known to be present in appreciable amounts in the soils or bedrock within the North Fork watershed (personal communication, Mark Leverton US Forest Service Geologist, Willamette National Forest). Recent precipitation analysis in the Waldo Lake basin (located in the upper end of the City's watershed) indicates that acid precipitation is not occurring in the area (personal communication, Al Johnson, US Forest Service Hydrologist, Willamette National Forest).

While accelerated soil erosion is not likely to affect mercury levels in the North Fork River, 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 has in place in its Land Development code (pages 20, 113 and 173) requirements for geotechnical evaluation on new development on erosive areas, and an erosion control plan is required for developments over five acres on slopes exceeding ten percent. 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 also plans to add specific erosion control requirements to its Land Development Code (such as installation of silt-fences or other sediment barriers, including mulching and seeding of created bare soil and avoidance of excavation during the wet season) for all new construction or reconstruction and for improvements in City infrastructure. City Council will consider including the costs of developing and adopting this ordinance in the operating budget for the City. Once adopted, the costs of developing erosion control plans and implementing erosion control facilities will be paid for by the developer.

**Conclusion:**

As stated at the beginning of this plan, it is our understanding that these statements, along with the attached matrix, will be seen by DEQ as meeting their requirement for the City to prepare a Total Maximum Daily Load Implementation Plan. All of the strategies outlined here and listed in the matrix are consistent with Westfir's land use plans. The City will be sure to check for and attain consistency with local and statewide land use laws in any future actions related to TMDL implementation.

We would very much appreciate feedback from DEQ confirming the City's perception that this plan fulfills TMDL implementation requirements, or if such is not the case, to specifically inform the City as to what additional information needs to be provided.



Covered Bridge Crossing the North Fork Middle Fork Willamette River in Westfir

**TMDL Implementation Tracking Matrix: Westfir, Oregon**

Westfir has legal authority over land use on 188 acres within the City's limits. The North Fork of the Willamette River runs 1.7 miles through length of the City. The land upstream from Westfir is mostly Willamette National Forest.

<b>POLLUTANT</b> <i>What pollutants does the TMDL address?</i>	<b>SOURCE</b> <i>What sources of this pollutant are under your jurisdiction?</i>	<b>STRATEGY</b> <i>What is being done, or what will you do to reduce and/or control pollution emanating from this source?</i>	<b>HOW</b> <i>Specifically, how will this be done?</i>	<b>MEASURE</b> <i>How will you demonstrate successful implementation or completion of this strategy?</i>	<b>TIMELINE</b> <i>When will the strategy begin? Be completed?</i>	<b>BENCHMARK</b> <i>What intermediate goals will be achieved, and by when, to know progress is being made?</i>	<b>STATUS</b>
<b>Temperature</b>	1. Solar radiation input	a. Maintain existing shading vegetation.	Comprehensive Plan (pp. 32, 50, and 59) contains riparian setback requirements.	Enforce code requirements Track the number of violations	Began in 2002 and will be on-going	Compare aerial photographs at five-year intervals to determine the state of and changes to riparian areas	
		b. Work with Middle Fork Watershed Council and mill site property owners to initiate riparian tree plantings	Contact Middle Fork WC and discuss options	Monitor new growth in riparian areas by visiting planting sites annually	Will begin in November, 2006 and will be on-going	At least one riparian tree planting projects completed every two years	
			When requested, provide formal support (and resources as available) for watershed council projects	Track the number of watershed council projects on which the City is a partner.	Ready immediately and will be on-going	Formal support provided for watershed council projects	
	2. Wastewater treatment plant discharge	Maintain effluent low temperatures.	Meet requirements of DEQ Discharge permit	Monitor effluent and river temperatures as a condition of the recently renewed DEQ discharge permit	In progress and to be Completed in 2008 (See schedule B1C, NPDES permit)	Compliance ensures that our effluent does not impair the river.	
<b>Bacteria</b>	1. Waste water treatment plant (monitoring indicates meets requirements)	Replace existing plant	Secure grant funding	Monitor as project continues	In progress and will be completed in 2008	Grant funds secured Treatment plant constructed and operating Continue to meet discharge permit requirements	
	2. Septic Systems (About 1/2 of the City's dwellings are on individual, privately- owned septic tanks)	<b>Short term goal:</b> Inform residences about bacterial water contamination including proper maintenance of septic systems, treatment of pet waste, etc. <b>Long term goal:</b> have all residences served by sewer system (Comp. Plan p. 71)	<b>Short term:</b> Monthly newsletter <b>Long term:</b> On-going tracking of grants to minimize septic impacts	<b>Short term:</b> Solicit public comments and monitor building permits <b>Long term:</b> Annual review and submission of grant applications to fund education efforts and infrastructure improvements	On-going	<b>Short term:</b> Heightened public awareness related to these issues <b>Long term:</b> Funding secured to hook up residents to municipal wastewater treatment system	
	3. Pet and animal waste	Install pet waste stations	Partner with Lane Council of Governments to determine type of station and best locations	At least two pet waste stations installed and operating	January 2008	Determine appropriate locations by June 2007	
<b>Mercury</b>	1. Natural background in soil and rock is low in North Fork (indicated by testing over two decades).	Limit erosion to maintain clear, clean water.	Land Development code (pp 20, 113, 173) requires geotechnical evaluation on new development on erosive areas, and erosion control plan for development over 5 acres on slope greater than 10%.	Building inspector will monitor compliance with Land Development code requirements	Begin: 2007 Completed: 2008	All necessary geotechnical evaluations are completed One hundred percent compliance with code requirements	
			Inform developers about and monitor 1200-C permits for new developments	Demonstrate that 100% of new developments over one acre obtain 1200-C permits	Begin immediately and on-going	Obtain materials explaining 1200-C requirements and make available with development applications	
	2. Erosion and sedimentation	Limit erosion to maintain clear, clean water.	City will add specific erosion control requirements (e.g. silt fences, mulching, seeding, avoid excavation during wet times) for all new construction/reconstruction	Once adopted, building inspector and planning department will monitor compliance with Land Development code requirements	Begin: 2007 Completed: 2008	Erosion Control requirements adopted by the City	