LOWER GRANDE RONDE SUBBASINS TMDL
CHAPTER 4: WATER QUALITY MANAGEMENT PLAN

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4.1 INTRODUCTION

A Total Maximum Daily Load (TMDL) defines the amount of a pollutant that can be present in a water body while meeting water quality standards. A Water Quality Management Plan (WQMP) is developed by DEQ as a broad strategy for implementing TMDL allocations. TMDLs, WQMPs and associated planning work together to protect designated beneficial uses, such as aquatic life, drinking water supplies, and water contact recreation. These TMDLs and WQMP address the geographic area included in the Lower Grande Ronde Subbasins.

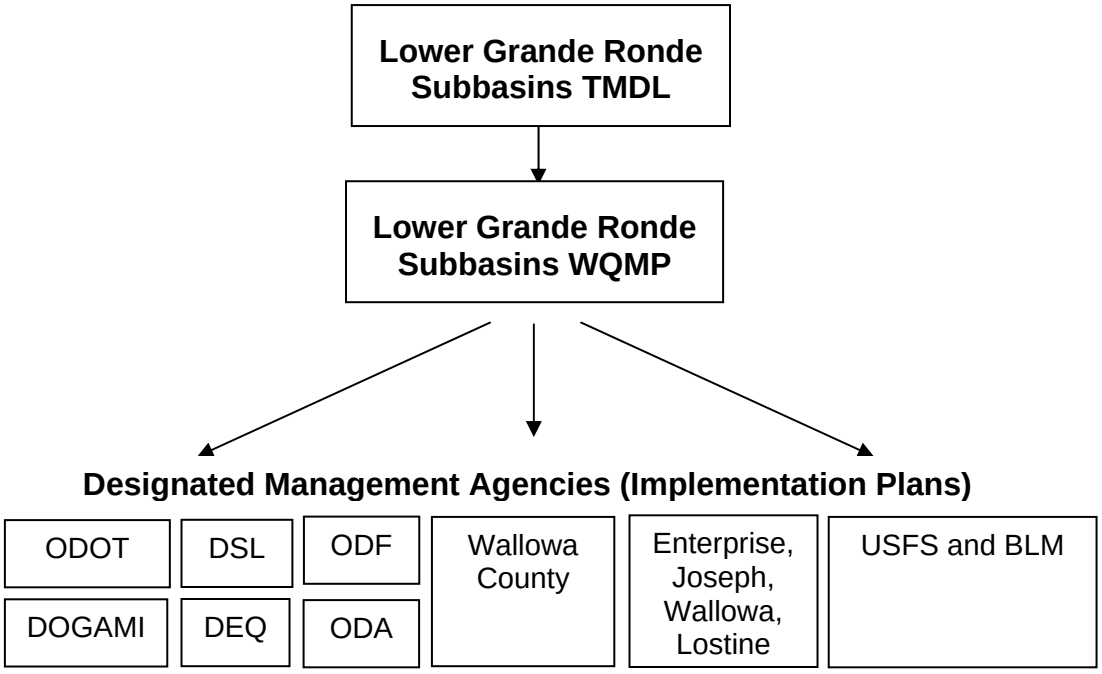
In December of 2002, the State of Oregon's Environmental Quality Commission (EQC) adopted a rule commonly referred to as the "TMDL rule" (OAR 340-042). The TMDL rule defines DEQ's responsibilities for developing, issuing, and implementing TMDLs as required by the federal Clean Water Act (CWA). The WQMP is one of the twelve TMDL elements called for in the TMDL rule. Oregon Administrative Rule 340-042-0040-(4)(l) states the following:

> *(l) Water quality management plan (WQMP). This element provides the framework of management strategies to attain and maintain water quality standards. The framework is designed to work in conjunction with detailed plans and analyses provided in sector-specific or source-specific Implementation Plans.*

Accordingly, implementation of this TMDL is addressed through two different scales of planning. The WQMP itself serves as a multi-sector framework plan for the area covered by the TMDLs. It describes and references various plans and programs that are specific to a given land use or management sector. The sector-specific plans, or *TMDL Implementation Plans*, comprise a second tier of planning prepared by the local land use or water quality authority (Designated Management Agencies). A Designated Management Agency (DMA) is defined in the TMDL Rule as "a federal, state or local governmental agency that has legal authority over a sector or source contributing pollutants, and is identified as such by the Department of Environmental Quality in a TMDL." This organizational process is represented schematically in **Figure 4-1**. Because the DMAs will require some time to fully develop these Implementation Plans once the TMDLs are finalized, the first iterations of the Implementation Plans are not expected to completely describe management efforts.

This WQMP establishes timelines to develop Implementation Plans. DEQ and the DMAs will work collaboratively to assure that the WQMP and TMDL Implementation Plans collectively address the elements described in **Section 4.2**. In short, this document is a starting point and foundation for the WQMP elements being developed by DEQ and the DMAs. If the Department identifies other responsible DMAs at a later time, then the DMA list will be revised. ***It should be noted that individual Implementation Plans are only referenced in this document; they are not attached as appendices.***

Figure 4-1. TMDL/WQMP/Implementation plan schematic



Agency abbreviations are for: Oregon Departments of Transportation (ODOT), Geology and Mine Industries (DOGAMI), State Lands (DSL), Environmental Quality (DEQ), Forestry (ODF) and Agriculture (ODA), US Forest Service (USFS) and Bureau of Land Management (BLM)

Nez Perce Tribe. The Nez Perce Tribe is not identified as a DMA in this WQMP. Tribal responsibility on ceded lands throughout the Lower Grande Ronde Subbasins is defined through their role as co-manager of the salmon resource which has been determined through treaty rights and federal court decisions. As a co-manager of these resources, the Tribe plays a central role in development and implementation of plans and projects designed to protect and enhance treaty-reserved resources, including salmon, steelhead, and other aquatic resources. Consultation and continued coordination with the Nez Perce Tribe will enhance the effective implementation of the TMDL

The Nez Perce Tribes have participated in the following planning processes which will assist in the implementation of TMDL goals:

1. *The Wallowa County-Nez Perce Salmon Habitat Recovery Plan with Multi-Species Habitat Strategy* (1999)
2. The Columbia River Inter-Tribal Fish Commission (CRITFC) Plan (1998), *Wy-Kan-Ush-Mi Wa-Kish-Wit, Spirit of the Salmon, The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama Tribes*
3. The Northwest Power and Conservation Council's Subbasin Planning process.

In the 1990s, staff from the Nez Perce Department of Fisheries Restoration Management played an important role in developing the *Wallowa County-Nez Perce Salmon Habitat Recovery Plan with Multi-Species Habitat Strategy* (*SHRP*). A committee consisting of Wallowa County citizens, agency professionals and the Nez Perce Tribe worked together to prepare the Plan which has the laudable mission to "…develop a management plan to assure that watershed conditions in Wallowa County provide the spawning, rearing, and migration habitat required to assist in the recovery of Snake River salmonids by protecting and enhancing conditions as needed." A more in-depth discussion of the SHRP is included in **Element H** of **Section 4.2**.

In 1995 CRITFC and the four Columbia Basin treaty-tribes (the Nez Perce, Umatilla, Warm Springs, and Yakama Tribes) took the initiative to develop and implement, *Wy-Kan-Ush-Mi Wa-Kish-Wit*, a cooperative plan to restore the fisheries resource in the Columbia River Basin above Bonneville Dam. This Restoration Plan stresses the importance of healthy connected riparian habitat for restoration of anadromous fish populations. *Wy-Kan-Ush-Mi Wa-Kish-Wit* identifies the watershed needs for 23 subbasins including the Grande Ronde (including the Wallowa) and Imnaha subbasins. The Grande Ronde plan states the need for water quality improvement such as increasing near stream land cover to reduce stream heating and reduction of sediment, nutrients and bacteria sources. The Imnaha plan includes recommended actions to mitigate problems such as sediment, limited large woody debris and loss of riparian vegetation.

The Nez Perce Tribe was also a partner in the subbasin planning that took place throughout the Columbia River Basin and was completed in 2005. The subbasin planning process was initiated by the Northwest Power and Conservation Council's 2000 Fish and Wildlife Program. The Council is responsible for mitigating the impact of hydropower dams on fish and wildlife in the Columbia River Basin. The program complements a basin-wide fish and wildlife vision with biological objectives and action strategies. The program will be implemented through locally developed subbasin plans that will be consistent with the basin-wide vision and objectives and its underlying foundation in ecological science. In the area covered by the Lower Grande Ronde Subbasins TMDLs, plans were developed for the Grande Ronde Subbasin and the Imnaha Subbaasin (Northwest Power and Planning Conservation Council, 2005a and 2005b). The Nez Perce were the lead agency in the Imnaha Subbasin planning effort. The Tribe has demonstrated commitment to seeing the principles and priorities developed in the subbasin planning incorporated into on the ground land management strategies and practices.

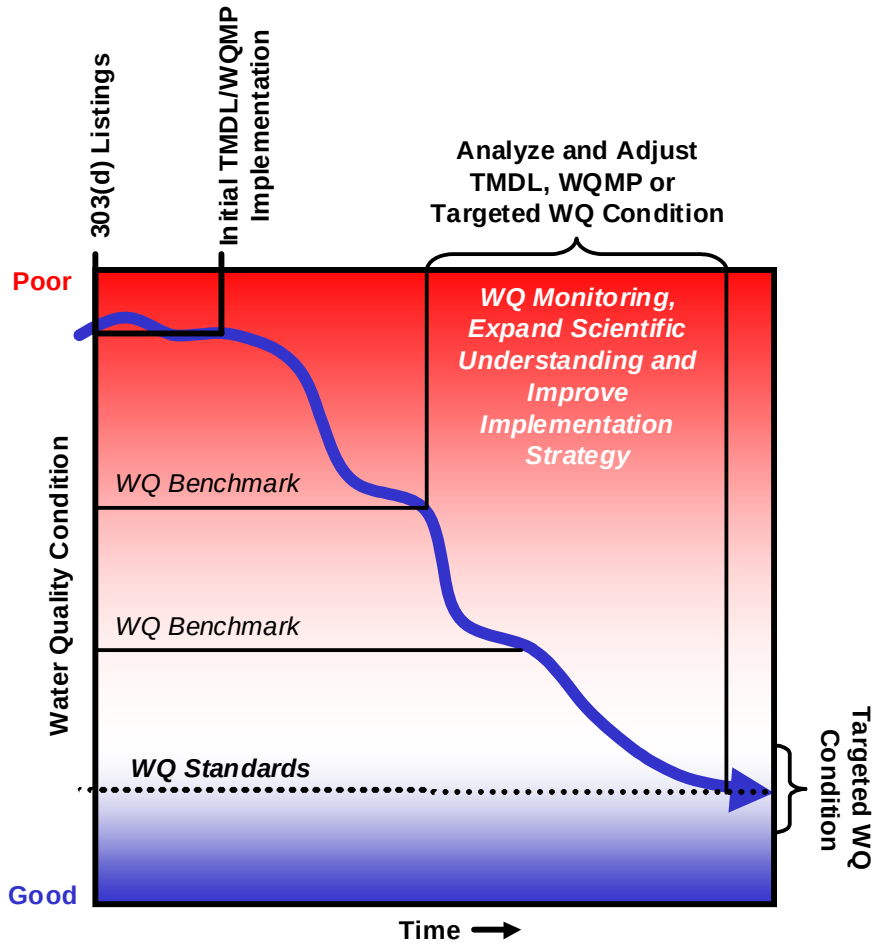
4.1.1 Adaptive Management

DEQ recognizes that the relationship between management actions and pollutant load reductions is often not precisely quantifiable. DEQ applies an *adaptive management* policy to implement TMDLs. *Adaptive management can be defined as a systematic process for continually improving management policies and practices by learning from the outcomes of operational programs.* In employing an adaptive management approach to the TMDLs and the WQMP, DEQ has the following expectations and intentions:

- In the short term, the DEQ anticipates reviewing TMDL and WQMP progress on an "as needed" basis. DEQ resources are currently concentrating efforts on completing TMDL development throughout the state.
- In conducting its review DEQ will evaluate progress towards achieving the TMDLs (and water quality standards) and the success of implementing the WQMP.
- DEQ expects that each DMA will also monitor and document its progress in implementing the provisions of its implementation plan. This information should be provided to DEQ for its use in reviewing the TMDL.
- As implementation of the WQMP and the associated implementation plans proceeds, DEQ expects that DMAs will develop benchmarks for attainment of TMDL surrogates that can then be used to measure progress.
- Where performance of the implementation plans or effectiveness of management techniques is found to be inadequate, DEQ expects the DMAs to revise their plan components to address the deficiencies.
- When DEQ in consultation with the DMAs, concludes that all feasible steps have been taken to meet the TMDL, its associated surrogates and water quality standards, and that the TMDL or the associated surrogates and standards are not practicable, the TMDL may be reopened and revised it as appropriate.
- DEQ will consider reopening the TMDL should new information become available indicating that the TMDL or its associated surrogates need revision.

Figure 4-2 is a graphical representation of this adaptive management concept.

Figure 4-2. Adaptive management - schematic diagram



4.1.2 TMDL Implementation Discussion

The Clean Water Act and related Oregon Administrative Rules (OARs) target water quality standards attainment or that all feasible steps will be taken towards achieving the highest quality water possible. The Lower Grande Ronde Subbasins TMDLs establish numerical loadings to limit pollutant levels in order to achieve water quality standards.

Existing water quality conditions in the Subbasins are expressions of hundreds of years of natural disturbance and human activities. Reversing these conditions may take decades of concerted stakeholder efforts before approaching the desired TMDL goals. In order to achieve the desired water quality conditions as quickly as possible, implementation strategies need to commence as quickly as possible. Some of the factors to be considered for the lengthy recovery time are:

- Complex natural systems (ecology, stream hydrology, channel morphology) recover slowly.
- Despite the best and most sincere efforts, natural disturbance events beyond the control of humans may interfere with or delay attainment of the TMDL and/or its associated surrogates. Such events

may include: floods, fire, insect infestations, and drought. DMAs will not be considered out of compliance with the TMDLs due to the effects of natural disturbances.

- System loadings are calculated using mathematical models and other analytical techniques designed to simulate and/or predict extremely complex physical, chemical and biological processes. DEQ uses the best data and pollutant loading estimates that are currently available, however the models and techniques are simplifications of extremely complex processes. As such, they are "best estimates" of how waterways in the Lower Grande Ronde Subbasins will respond to WQMP implementation measures.
- Building stakeholder acceptance and program support through education and outreach programs takes time.
- Technological controls for nonpoint source pollution are evolving. It may take one or more iterations to develop effective pollution abatement techniques.
- New information or analytical techniques may trigger the need to revise the TMDL and/or water quality goals.
- It is possible that after executing all reasonable best management practices, some TMDLs cannot be met.

TMDL Implementation Compliance and Enforcement:
TMDL implementation is generally enforceable by DEQ, other state and federal agencies, and by local government. However, it is envisioned that sufficient initiative exists to achieve water quality goals with minimal enforcement. Should the need for additional effort emerge, it is expected that the responsible agency will work with land managers using education, technical support or enforcement. Instances of inadequate action towards progress may necessitate the need for enforcement. This could occur first through direct intervention from land management agencies (e.g. ODF, ODA, counties, and cities), and secondarily from DEQ. The latter may be based on DEQ orders to implement management goals leading to water quality standards.

It is important to note that:

- *The DEQ considers a nonpoint source found to be in compliance with its approved implementation plan to be in compliance with the TMDL. Nonpoint sources will not be considered out of compliance with the TMDL due to the effects of natural disturbances.*
- *If the WQMP has been fully implemented, all feasible management practices have yielded maximum expected effects, and the TMDL or its interim targets have not been achieved, then the DEQ will reopen the TMDL and adjust it or its interim targets as necessary.*

4.2 TMDL WATER QUALITY MANAGEMENT PLAN AND IMPLEMENTATION PLAN GUIDANCE

On December 12, 2002, the State of Oregon's Environmental Quality Commission adopted rules (Oregon Administrative Rules (OAR 340-042) establishing procedures for developing, issuing and implementing TMDLs as required by the Federal Clean Water Act. The rules include a list of the required WQMP elements. These elements serve as the framework for this WQMP and are listed below.

Water Quality Management Plan Elements per OAR 340-042 0040(4)(l)

A. Condition assessment and problem description
B. Goals and objectives
C. Proposed management strategies
D. Timeline for implementing management strategies
E. Relationship of management measures to attainment of water quality standards
F. Timeline for attainment of water quality standards

G. Identification of responsible participants, including DMAs
H. Identification of sector-specific implementation plans
I. Schedule for preparation and submission of implementation plans
J. Reasonable assurance
K. Monitoring and evaluation
L. Public involvement
M. Planned efforts to maintain management efforts over time
N. Costs and funding
O. Citation to legal authorities

The following sections A-O provide a further discussion of each of these WQMP elements.

TMDL Implementation Plan – Expected Components

Some of the elements listed above are sufficiently addressed in the WQMP and others are partly or largely deferred to the DMA programs. The Oregon Administrative Rules in OAR 340-042 clarify DEQ's expectation of TMDL Implementation Plan content, as follows:

> 340-042-0080(2): "The Oregon Department of Forestry will develop and enforce Implementation Plans addressing state and private forestry sources as authorized by ORS 527.610 through 527.992 and according to OAR chapter 629, divisions 600 through 665. The Oregon Department of Agriculture will develop Implementation Plans for agricultural activities and soil erosion and enforce associated rules as authorized by ORS 568.900 through 568.933 and according to OAR chapter 603, divisions 90 and 95."
>
> 340-042-0080(3): "Persons, including DMAs other than the Oregon Department of Forestry or the Oregon Department of Agriculture, identified in a WQMP as responsible for developing and revising sector-specific or source-specific Implementation Plans must:
>
> (a) Prepare an Implementation Plan and submit the plan to DEQ for review and approval according to the schedule specified in the WQMP. The Implementation Plan must:
>
> (A) Identify the management strategies the DMA or other responsible person will use to achieve load allocations and reduce pollutant loading;
>
> (B) Provide a timeline for implementing management strategies and a schedule for completing measurable milestones;
>
> (C) Provide for performance monitoring with a plan for periodic review and revision of the Implementation Plan;
>
> (D) To the extent required by ORS 197.180 and OAR chapter 340, division 18, provide evidence of compliance with applicable statewide land use requirements; and
>
> (E) Provide any other analyses or information specified in the WQMP.
>
> (b) Implement and revise the plan as needed.

General discussion of the expected content of TMDL Implementation Plans can be found in *TMDL Implementation Plan Guidance (*DEQ, 2007a). DEQ also has a portion of its website devoted to TMDL Implementation Guidelines and Tools (http://www.deq.state.or.us/wq/TMDLs/implementation.htm). There are guidance documents provided here, such as the *Water Quality Model Code and Guide Book* (DEQ and Oregon Department of Land Conservation and Development, 2000), as well as examples of TMDL Implementation Plans. DEQ expects Implementation Plans to be submitted within 18 months of the issuance of the TMDL.

(A) Condition Assessment and Problem Description

A detailed condition assessment and problem description are provided in the preceding chapters of this document. In brief, the primary issue of concern is that the water quality standards are not being met perennially in portions of the Lower Grande Ronde Subbasins (which includes the Imnaha River Subbasin, the Wallowa River Subbasin and the Lower Grande Ronde Subbasin). **Table 4-1** summarizes the status of 303(d) listings in the three subbasins covered by the TMDLs included in this document.

Table 4-1. Lower Grande Ronde Subbasins streams on the 303(d) List addressed by 2009 TMDLs
For each parameter, the table shows number of listed miles and number of listed segments (x).

Parameter	Wallowa Subbasin	Lower Grande Ronde Subbasin	Imnaha Subbasin	Total
Temperature – Rearing & Migration		235.3 (12)	105.1 (5)	340.4 (17)
Temperature – Spawning	15.7 (3)	3.6 (1)	24.3 (2)	43.6 (6)
Temperature – Core Cold Water	90.1 (5)	11.7 (2)	24.2 (2)	126.0 (9)
Temperature – Bull Trout	18.2 (2)		47.9 (4)	66.1 (6)
E. coli – Summer	64.9 (3)			64.9 (3)
Fecal coliform – Fall, Winter, Spring	17.0 (2)			17.0 (2)
Fecal coliform – Summer	50.0 (1)			50.0 (1)
Total Stream Miles with One or More Listings*	129.2	246.6	177.2	

*Streams with more than one listing were counted only once in the total stream miles.

A description of the lower Grande Ronde Subbasins is provided in **Chapter 1** of this document**. Chapter 2** provides a condition assessment for temperature. The biologically-based numeric temperature criteria are exceeded throughout much of the stream network in all three subbasins. Surface water temperatures in the Lower Grande Ronde Subbasins are heavily influenced by human activities. Specifically, elevated summertime stream temperatures attributed to human activities may result from the following conditions:

- Riparian vegetation disturbance that reduces stream surface shading, riparian vegetation height, and riparian vegetation density (shade is commonly measured as percent effective shade);
- Channel widening (increased width to depth ratios) due to factors such as loss of riparian vegetation that increases the stream surface area exposed to energy processes, namely solar radiation;
- Reduced flow volumes (from irrigation, industrial, and municipal withdrawals)
- Increased high temperature discharges from point sources or from irrigation return flows; and
- Disconnected floodplains which prevent/reduce groundwater discharge into the river.

Chapter 3 provides a condition assessment for bacteria. Violations of the State's bacteria standard have been observed in the Wallowa River, Spring Creek and Prairie Creek in the Wallowa River Subbasin. Potential fecal bacteria sources include livestock waste, failing residential septic systems, wastewater treatment plants, pets, and illegal discharges. Although there a variety of possible sources of bacteria, the assessment provided in the TMDL and in the Wallowa County-Nez Perce *SHRP* (1999) indicates that a likely source of bacterial contamination in the Wallowa River valley appears to be from livestock feed lots and associated pastures. This contamination could enter streams either through runoff or through irrigation return flows. The Wallowa River Valley is home to the majority of human population and agricultural industry in the Lower Grande Ronde Subbasins. Although there is considerable livestock grazing in other parts of the subbasin (i.e., Imnaha and Lower Grande Ronde Subbasins), at present no data is available to demonstrate a consistent violation of water quality standards for fecal bacteria in these areas. While there may be some contribution from failing on-site sewage systems, this does not

appear to be the dominant source of bacteria in the Wallowa River. There is not enough data available for Spring and Prairie Creek to make that determination.

(B) Goals and Objectives

The overall goal of this WQMP is to provide a mechanism to achieve compliance with water quality standards for each of the 303(d) listed parameters and streams in the Lower Grande Ronde Subbasins. Specifically, the WQMP describes all DMA Implementation Plans that are or will be in place to reduce nonpoint source discharges to the level of the load allocations and point source discharges to the level of the waste load allocations described in the TMDLs. This WQMP is preliminary in nature and is designed to be adaptive as more information is gained regarding the pollutants, allocations, management measures, and other related areas.

(C) Proposed Management Strategies

DEQ acknowledges that restoration and conservation planning and implementation has already commenced, in a manner supportive of TMDL attainment. And, in much of the Subbasins, more restoration is needed and long term planning should provide for maintenance of effort over time, including areas where load allocations are currently being met. As described previously, DEQ is reliant on the DMAs for programs and projects providing strategies to minimize stream heating and reduce bacteria inputs. Management strategies should include outreach, effectiveness monitoring and inventory and tracking of water quality management practices. Implementation Plans should identify targeted TMDL allocations and the sources of water quality impairment addressed by proposed measures.

A list of conditions for management agencies to target is described below, although this list is not exhaustive. Many of these suggested measures are discussed further in the Wallowa County-Nez Perce *SHRP* (1999) in the Stream Analysis Section, with management suggestions made on a reach-by-reach basis. In addition, Appendix B of the SHRP includes a Problems/Solutions Summary that includes specific guidance on management measures that can be used to address a number of water quantity, water quality, and stream structure issues.

Stream Temperature:

- Riparian Restoration. Healthy riparian vegetation is needed, including shade producing types. There is potential for continuous stands of riparian trees and herbaceous vegetation along most of the Subbasins perennial streams, though in some situations this will require considerable evolution in channel shape. DEQ realizes this could take decades. System potential shade producing vegetation is described and referenced in **Section A2.3.5** of **Appendix A**. Although DEQ does not specify required vegetation types, the TMDL does require a level of heat reduction that is dependent on the height and density of riparian vegetation and is reflective of system potential vegetation communities. For overall ecological benefits and consistency with programs directed to fish and wildlife habitat restoration, native vegetation is generally optimal. Passive or active restoration of riparian vegetation could be applied. In some cases, the necessary riparian vegetation may already be present, but more time is needed for the vegetation to mature. In other cases, active vegetation planting and/or stream fencing may be required.

- Stream flow. Increased instream flow, where depleted, will ultimately be needed to achieve the water quality standard for temperature. Increasing stream flow can be achieved by a variety of specific management measures, including: improving irrigation efficiency and allowing conserved water to be used for instream purposes, leasing instream water during minimum flow times, and reducing diversions. Note that the TMDL calls for heat reduction, and although restored flow levels will help achieve this goal, increased flow is not required by the TMDL.

- Channel Condition. A stable and natural channel form will typically be narrower and/or more complex than the existing state for many streams in the Subbasins. Passive or active restoration could be applied. Increased sinuosity will lead to attainment of a more natural channel width/depth, as will restoration of the length and complexity of the stream channel. Removal of

levees, dikes, berms, weirs or other water control structures could be helpful for naturalizing channels, as could removing structural bank protections.

- Upland Management. Upland management that reduces erosion and sediment runoff will support attainment of a more natural channel form. Retaining adequate watershed vegetation can also reduce rapid surface runoff and promote infiltration and aquifer recharge which can increase groundwater flows into some streams. Finally, maintaining healthy watershed conditions by reducing fuel loads can help provide an optimal, sustainable supply of water.

- Irrigation Return Flows. Limiting irrigation return flows of warm water can also help meet the heat reduction called for in the TMDL.

Bacteria: Based on the bacteria assessment of the Wallowa Subbasin provided in the TMDL, one of the most likely sources of excess bacterial contamination comes from feedlots and associated pastures. Senate Bill 1010 is the process used by the Oregon Department of Agriculture (ODA) to address nonpoint source water quality issues on agricultural lands. Once load allocations are finalized, it will be ODA's responsibility to ensure that implementation of the Agricultural Water Quality Management Area Plan will result in the achievement of the load allocation. ODA also administers the CAFO program which regulates concentrated animal operations through a general NPDES permit. The general permit prohibits discharge of CAFO wastes to waterbodies.

Septic systems and urban/suburban stormwater runoff are other possible sources of bacterial contamination within the Subbasins. While the data evaluated in this TMDL did not indicate these were a likely source of bacteria in the Wallowa River, they might be in other areas. On-site septic systems in Wallowa County are regulated by DEQ. Management of stormwater runoff falls under the jurisdictions of Wallowa County and local municipalities.

Best management practices addressing bacterial reductions should be applied through the watershed, particularly along the major waterways. Example management strategies include:

- Livestock fencing of riparian areas
- Re-location of animal feedlots that are near streams, providing off-channel watering and feeding
- Providing wetlands and/or filter strips to improve quality of feedlot runoff
- Limiting irrigation return flows of water which contain bacterial contamination
- Further evaluation of possible effects of leaking septic systems and/or stormwater runoff on stream water quality
- Conduct on-site septic systems inspection and maintenance
- Implement stormwater BMPs to promote infiltration, filtration, retention, and detention
- Perform routine maintenance of stormwater systems
- Continued monitoring by point sources to ensure compliance with the terms of their permits and water quality standards.
- Outreach and education

(D) Timeline for Implementing Management Strategies

Individual DMA-specific Implementation Plans will address timelines for completing measurable milestones as appropriate. Timelines should be as specific as possible and should include a schedule for BMP installation and/or evaluation, monitoring schedules, reporting dates and milestones for evaluating progress. Time frames for TMDL attainment and Implementation Plan submittal are addressed in **Elements F** and **I** below. NPDES permits are scheduled for re-evaluation/issuance every five years. New and renewed permits will incorporate TMDL wasteload allocations.

DEQ recognizes that natural resource organizations, local jurisdictions and landowners have been active in watershed restoration both directly and through outreach. This report does not attempt a timeline for addressing the many ongoing and voluntary efforts.

(E) Relationship of Management Measures to Attainment of Water Quality Standards

For point sources of pollution, ODEQ will issue permits that include specific discharge limitations and compliance schedules that ensure wasteload allocations and water quality standards are met or will be attained within a reasonable timeline. Permits are reviewed and renewed on a five-year cycle. The CAFO general permit is also renewed on a five-year cycle, with the current permit expiring in 2014.

For nonpoint sources of pollution, DMA-specific Implementation Plans will include specific management strategies and timelines. It is expected that the management measures within each Implementation Plan will be directly linked to the reduction of pollutant loading and attainment of water quality standards. DMAs are expected to prepare an annual report and undertake an evaluation of the effectiveness of their plans every five years to gauge progress toward attaining water quality standards. If it is determined that an Implementation Plan is not sufficient to achieve the load allocation, the DMA will be required to revise the plan accordingly. All of these actions, taken together, will target attainment of water quality standards.

The objective of the Temperature TMDL is the attainment of natural thermal potential conditions that will result when solar heating is reduced to the level of the load allocations, as accomplished by improving vegetation, channel and flow conditions. **Chapter 2** of this document (Temperature TMDL) and **Appendix A** provide a discussion on the relationship among riparian vegetation, channel morphology, and flow management measures and their affect on temperature. Management strategies should be clearly linked to the load allocations and their surrogates.

As discussed in **Chapter 3** of this document (Bacteria TMDL) and **Element C** above, attainment of water quality standards for bacteria will primarily rely on reducing bacteria delivered to streams by various means including riparian protection, erosion control and stormwater control and treatment, low impact development, various agriculture and irrigation practices, and through implementation of the Agricultural Water Quality Management Area Plan, accompanied by long term monitoring.

(F) Timeline for Attainment of Water Quality Standards

The timeline for attainment is not explicit and will vary across the Subbasins and by pollutant. DEQ recognizes that where implementation involves significant habitat restoration or reforestation, water quality standards may not be met for decades. In addition, DEQ recognizes that technology for controlling nonpoint source pollution is, in some cases, in the development stages and will likely take one or more revisions to develop effective techniques. DEQ does expect that water quality standards will be attained as soon as feasible given technical, political, and economic constraints.

The time span for attainment of the natural conditions criterion for temperature relies on reductions in nonpoint source heat input. Modeling indicates that both vegetation and flow can have dramatic effects on heat reduction, depending on the stream. For vegetation, once passive or active restoration is underway and larger vegetation begins to establish, substantial improvement could take place in one to three decades. For flow, substantial improvements could be seen within a single year's time with the restoration of instream flows to a natural condition. Bacteria reduction is generally correlated to the emplacement of strategic management practices, and dramatic improvements can take place within a single year's time.

DMAs are expected to provide time-lines for TMDL implementation efforts, to the extent feasible. In subsequent TMDL and Implementation Plan review, this should enable further estimation of time frames for water quality standard attainment.

(G) Identification of Responsible Participants, including DMAs

While everyone living in the Subbasins share responsibility for preventing water pollution, certain entities are recognized under this TMDL as having specific responsibilities for implementing this TMDL and are

required to take necessary actions to meet their assigned load and wasteload allocations. This section identifies the DMAs responsible for implementing management strategies and developing and revising sector-specific or source-specific Implementation Plans to accomplish that. Implementation Plans are expected to cover all lands and activities which impact stream heating or bacterial loading within the geographic area covered by the TMDL. A more detailed discussion of each organization's responsibilities is provided in **Element H**. DMAs are not responsible for controlling pollution arising from land use activities occurring outside of their area of jurisdictional authority. Nor are they responsible for controlling stream heating that occurs as the result of natural disturbances.

Although they are not named as DMAs at this time, irrigation districts and ditch associations have been identified as a sector which potentially contributes pollutants to waterbodes in the Lower Grande Ronde Subbasins. Irrigation districts and ditch associations control operations related to irrigation water transport and delivery. Their operations are considered nonpoint sources that have the potential to influence the quantity and timing of both heat and bacteria delivery to downstream river reaches. While irrigation district and ditch association operations themselves are not primary sources of fecal bacteria, the laterals and canals that are used to convey water can play a major role in transporting bacterial contamination across the landscape and into surface waters. Water travelling through the laterals and canals also has the potential to heat up, introducing warm waters to streams as return flow.

Irrigation districts and ditch associations are encouraged to implement best management practices. To reduce the potential of polluted return flows, districts/associations may contact users directly or work in conjunction with ODA and the SWCD to inform irrigation users of effective irrigation practices, manure management and other practices to keep fecal organisms and heat out of the irrigation system and out of surface waters. If data becomes available at a later date which indicates that the canals and laterals are a source of pollution, the irrigation districts and/or ditch associations may be designated as DMAs at that time and be required to develop Implementation Plans that will achieve the load allocations established by the TMDLs.

The following is a list of DMAs for the Lower Grande Ronde Subbasins which has been identified at this time:

Oregon Department of Environmental Quality (DEQ)

- NPDES permitting and enforcement
- WPCF permitting and enforcement
- Section 401 water quality certifications for removal and fill activities
- On-site septic system permitting and enforcement
- Nonpoint Source TMDL Implementation Program
- Technical assistance
- Financial assistance

Oregon Department of Agriculture (ODA)

- Agricultural Water Quality Management Area Plan (AWQMAP) development, implementation, enforcement, and revision.
- CAFO permitting and enforcement
- Technical assistance
- Rules under Senate Bill 1010 to clearly address TMDL and Load Allocations as necessary.
- Riparian area management
- Oregon Conservation Reserve Enhancement Program

Oregon Department of Forestry (ODF)

- Forest Practices Act (FPA) implementation
- Revise statewide FPA rules and/or adopt subbasin specific rules as necessary.
- Riparian area management

Oregon Department of Transportation (ODOT)

- Implementation of Stormwater Pollution Prevention and Control Plan and Erosion and Sedimentation Control Plan
- Design, construction, operation and maintenance of state highways and state highway storm systems

Oregon Department of State Lands (DSL)

- Public land and waterway management
- Removal-fill activities
- Wetland management
- Land leasing and mining activities

Oregon Department of Geology and Mine Industries (DOGAMI)

- Aggregate mining activities in waterways or floodplains
- Riparian area protection/enhancement; streambank stabilization
- Implementation and enforcement of permits

Federal Land Management Agencies (BLM and Forest Service)

- Following standards and guides
- Development and implementation of Water Quality Restoration Plans

Wallowa County

- Construction, operation and maintenance of County roads and stormwater systems
- Land use planning/permitting
- Maintenance, construction and operation of parks and other county owned facilities and infrastructure
- Riparian area management

Cities of Joseph, Enterprise and Wallowa

- Construction, operation and maintenance of a wastewater treatment plant and sanitary sewer system
- Construction, operation and maintenance of city roads and stormwater systems
- Land use planning/permitting
- Maintenance, construction and operation of parks and other city owned facilities and infrastructure
- Riparian area management

City of Lostine

- Construction, operation and maintenance of city roads and stormwater system
- Land use planning/permitting
- Maintenance, construction and operation of parks and other city owned facilities and infrastructure
- Riparian area management

(H) Identification of Implementation Plans

The planning efforts described in this Element provide for TMDL implementation in the Lower Grande Ronde Subbasins. DEQ expects that Implementation Plans will be developed and/or updated by DMAs as needed to layout all feasible steps toward meeting the TMDLs. Expected elements of TMDL Implementation Plans were listed previously. DEQ has developed a guidance document, entitled *TMDL Implementation Plan Components* (DEQ, 2007a), to help DMAs draft TMDL Implementation Plans and identify strategies that can be used to meet wasteload and load allocations. This document can be downloaded from: http://www.deq.state.or.us/wq/TMDLs/implementation.htm. This website also provides

examples of Implementation Plans developed in other parts of the state which can also be used as a source of information for DMAs. DEQ expects Implementation Plans to be submitted within 18 months of the issuance of the TMDL.

In addition to the specific Plans described below, Wallowa County partnered with the Nez Perce Tribe in 1992 to develop a natural resource management plan for Wallowa County that would provide economic growth, entitled *The Wallowa County-Nez Perce Salmon Habitat Recovery Plan with Multi-Species Habitat Strategy (SHRP)* (1999). The *SHRP*'s "…strategy is to create guidelines for habitat improvement. The concept of the Plan is to develop on-the-ground projects through Coordinated Resource Management Plans, action plans and watershed assessments. Projects are implemented to correct problems identified in watershed analysis." Appendix B of the *SHRP* includes a Problems/Solutions Summary that includes guidance on decreasing stream temperature, turbidity, nutrients, and livestock waste and improving channel morphology. Wallowa County posts a copy of the SHRP on its web site at: http://www.co.wallowa.or.us/salmonplan/. The document was prepared in 1993, revised in 1999, and updated in 2002. All DMAs are encouraged to utilize the *SHRP* and its recommendations in development of their Implementation Plans.

The following identifies the status of sector-specific or source specific implementation plans of DMAs as of the writing of this document.

Point Sources – NPDES Permits

Individual and General DEQ Permits

DEQ administers NPDES permits for surface water discharge and is delegated to do so by EPA. The NPDES permit is a federal permit, required under the Clean Water Act for discharge of waste into waters of the United States.

Individual-facility NPDES permits are unique to a discharge facility. General NPDES permits address categories of facilities or aggregate pollutant sources, such as fish hatcheries or storm water. As described in **Section 1.3.5** of the TMDL, there are presently three individual-facility NPDES permits issued in the Wallowa Subbasin (sewage treatment plants for the Cities of Enterprise, Joseph and Wallowa) and four General NPDES permits (stormwater and boiler blowdown for Wallowa Forest Products, construction stormwater for the City of Enterprise, and aquatic animal production for ODFW). During the TMDL analysis, it was determined that the general permit discharges were not likely to contribute to exceedances of temperature or bacteria standards. The wasteload allocations for these facilities are their existing condition. Any future permits must address these TMDLs as appropriate given their location and season of discharge.

Current Status and DEQ Expectations:
The Temperature TMDL establishes wasteload allocations (WLAs) for the Enterprise, Wallowa and Joseph sewage treatment facilities (See **Section 2.10** of the TMDL). The WLAs are 1.36 MW/day, 1.34 MW/day and 0.34 MW/day, respectively, and will be incorporated into their NPDES permits upon renewal. Reasonable potential analyses were done for all three facilities which indicate that there is no reasonable potential for violating the WLAs or the numeric temperature under their existing conditions of operation. The Bacteria TMDL establishes WLAs for the Cities of Enterprise, Wallowa and Joseph. The WLAs are expressed as the effluent concentration allowed by the bacteria standard: monthly log mean of 126 *E. coli* organisms/100 ml and no single sample above 406 *E. coli* organsms per 100 ml. For all three plans, this is equal to the conditions specified in their current permits. If any of the general permit discharges are later shown to contribute to exceedances of water quality criteria, that issue will be addressed at that time and incorporated into a new permit.

CAFO General Permits

All CAFOs operate under a general NPDES permit issued and managed by ODA. The general permit prohibits discharge of CAFO wastes to waterbodies of the State. There are currently six CAFOs in the Wallowa River Subbasin

Current Status and DEQ Expectations:
DEQ expects continued administration and enforcement of CAFO permits by ODA.

Nonpoint Sources

Agriculture

The Oregon Department of Agriculture is the DMA responsible for regulating agricultural activities that affect water quality through the Agricultural Water Quality Management Act (Senate Bill 1010) and Senate Bill 502. TMDL implementation for agriculture will therefore be carried out through existing regulatory and non-regulatory programs. ODA has the ability to assess civil penalties when local operators do not follow their local Agricultural Water Quality Management Area rules.

SB1010 directs ODA to work with local communities, including farmers, ranchers, and environmental representatives, to develop Agricultural Water Quality Management Area Plans (AgWQMAP) and rules throughout the State. SB502 stipulates that ODA "shall develop and implement any program or rules that directly regulate farming practices that are for the purpose of protecting water quality and that are applicable to areas of the state designated as exclusive farm use zones or other agricultural lands." Further, ODA policy states that plans and rules will be "reviewed on a biennial basis and ODA in consultation with ODEQ will assess whether the plan and rules are sufficient to meet and address water quality concerns established under the 303(d) or TMDL process or other triggering mechanisms". Progress reports, which are submitted to the Board of Agriculture after the biennial review process, are developed based on data collected by Local Management Agencies and ODA on progress of implementation of the plans and rules. Reports to the Board of Agriculture and Director will include statistics on numbers of farm plans developed and types of management practices being employed. These reports will be available to DEQ for review in assessing implementation progress.

Local Management Agencies are funded to conduct outreach and education, develop individual farm plans for operations in the planning area, work with landowners to implement management practices, and help landowners secure funding to cost-share water quality improvement practices. The Local Management Agency for the Lower Grande Ronde Subbasins is the Wallowa County Soil and Water Conservation District working under contract to ODA.

Current Status:
ODA adopted the first Wallowa County AgWQMAP and rules on September 20, 2001. In 2003, ODA decided to delay its first biennial review process for the Wallowa County AgWQMAP until the Lower Grande Ronde Subbasins TMDLs were completed. Due to delays in completion of the TMDLs, ODA reconvened the Local Advisory Committee in 2005 to conduct the next scheduled biennial review, even though TMDLs were not completed. Since that time, biennial reviews have been conducted in 2007 and 2009. The AgWQMAP and Rules, as well as a 2009 Progress Report, are available from ODA's website at: http://oregon.gov/ODA/NRD/water_agplans.shtml.

DEQ Expectations:
DEQ expects that, once the TMDLs are completed and approved by EPA, that the next biennial review will address the temperature and bacteria TMDLs - including identifying how progress toward achievement of the surrogate measures for load allocations will be approached.

Non Federal Forest Lands

The Oregon Department of Forestry is the DMA, by statute, for water quality protection from nonpoint source discharges or pollutants resulting from forest operations on non federal forestlands in Oregon. ODF's water quality authority is provided through the Forest Practices Act (FPA). TMDL implementation for forestry will therefore be carried out through existing regulatory and non-regulatory programs.

By statute, forest operators conducting operations in accordance with the FPA are considered to be in compliance with Oregon's water quality standards. The FPA does have provisions for both criminal and civil penalties if forest operators do not comply with water protection regulations. Additionally, whenever a violation occurs, the responsible party is obligated to repair the damage.

Examples of forestland water protection best management practices include:

- Roads not located in riparian management areas, flood plains, or wetlands;
- Stream crossing structures designed for 50 year flows;
- Maintain riparian vegetation with a 20-foot no harvest zone of trees and a 10-foot zone no disturbance of all understory vegetation that is near the high water level of the stream or river (except all intermittent streams which have no protections);
- Minimize disturbance to beds and banks of streams, lakes, and all wetlands more than ¼ acre in size; and
- Minimize slash that may enter waters of the state during felling, bucking, limbing or yarding.

Additional information about the requirements of the Forest Practices Act can be found at the Oregon Department Forestry website: http://www.oregon.gov/ODF/lawsrules.shtml.

Coordination between ODF and DEQ is guided by a Memorandum of Understanding (MOU) signed in April of 1998. This MOU was designed to improve the coordination between the ODF and DEQ in evaluating and proposing possible changes to the forest practice rules as part of the TMDL process. ODF and DEQ are involved in several statewide efforts to analyze the existing FPA measures and to better define the relationship between the TMDL load allocations and the FPA measures designed to protect water quality.

An evaluation of rule adequacy has been conducted (also referred to as the "Sufficiency Analysis") through the analysis of water quality parameters that can potentially be affected by forest practices. This statewide demonstration of forest practices rule effectiveness in the protection of water quality addressed the following specific parameters:

1) Temperature
2) Sediment
3) Turbidity
4) Aquatic habitat modification
5) Bio-criteria

The Sufficiency Analysis report (ODF and DEQ, 2002) has been externally reviewed by peers and other interested parties. The report is available for viewing at: http://www.deq.state.or.us/wq/nonpoint/links.htm. The report provides background information and assessments of BMP effectiveness in meeting water quality standards. The report concludes overall FPA adequacy at the statewide scale with due consideration to regional and local variation in effects. Achieving the goals and objectives of the FPA will ensure the achievement and maintenance of water quality goals. The report offers recommendations to highlight general areas where current practices could be improved in order to better meet the FPA goals and objectives and in turn provide added assurance of meeting water quality standards.

Current Status:
The Forest Practice Rules apply in non-federal forest areas in the Lower Grande Ronde Subbasins. Watershed-specific rules have not been established in the Subbasins.

DEQ Expectations:
DEQ has not identified water quality impairment that is specific to forest management in the Subbasins. DEQ expects ongoing implementation of the Forest Practices Act.

Transportation

The Oregon Department of Transportation is the DMA for the regulation of water quality related to roads, highways and bridges under their jurisdiction. ODOT has worked with DEQ to develop a statewide TMDL program focused on managing TMDL pollutants associated with the operation, construction, and maintenance of ODOT roads, highways, and bridges. A MOU is currently being developed that will formalize a proactive, collaborative, and adaptive manner whereby the TMDL management goals and requirements as defined in Oregon Administrative Rules (OAR, Division 42, TMDLs) will be met.

ODOT has developed a single TMDL management plan that is implemented statewide rather than individual TMDL management plans for multiple water quality limited waterbodies across the state. By developing a single, statewide, management plan, ODOT:

- Streamlines the evaluation and approval process for TMDL watershed management plans.
- Provides consistency to ODOT highway management practices in all TMDL watersheds.
- Eliminates duplicative paperwork and staff time developing and participating in numerous TMDL management plans.

The ODOT TMDL management plan addresses management of all TMDL pollutants associated with ODOT facilities. Of TMDL pollutants, ODOT considers sediment and temperature to be the primary pollutants of concern associated with ODOT owned and maintained facilities, properties located within the highway right-of-way, and maintenance facilities. DEQ is still in the process of identifying TMDL pollutants that limit beneficial uses of waterways across Oregon. TMDL allocations are established by watershed. Because of this, some individual watersheds may have unique pollutant management needs that require special consideration under the ODOT watershed management plan. ODOT will work with DEQ or local watershed management agencies (e.g. County and Municipal Road Departments), to address local transportation related watershed concerns as needs arise.

Major components of a Statewide Implementation Plan will be executed through the core regulatory programs that ODOT is already required to comply with. These regulatory programs are: NPDES Municipal Separate Storm Sewer System Phase I and 1200CA permits, 401 Dredge & Fill Certification, and the Underground Injection Control programs. These programs are the core elements of their statewide Implementation Plan, however the MOU also describes the process that will be used to identify any gaps relative to meeting the TMDL requirements in a given basin or sub-basin. This process will allow an efficient use of both ODOT and DEQ staff in implementing specific actions and goals and identifying appropriate effectiveness monitoring to gauge how its actions are contributing to achieving TMDLs goals in each basin and across the state.

Current Status and DEQ Expectations:
Continued participation in MOU development and on-going implementation of ODOT's TMDL Implementation Plan.

State Lands

The Department of State Lands administers the state´s removal-fill permits and is responsible for leasing range and agricultural land and waterways for a variety of business activities. Many of the elements required in an implementation plan will likely be addressed through the implementation of existing regulatory programs and activities.

Current Status and DEQ Expectations:
DSL does not presently have an Implementation Plan. DEQ expects that a Plan will be developed and suggests that DSL may work with DEQ to develop a statewide implementation plan, as has been done by other State agencies.

Mining and Geology

The Oregon Department of Geology and Mining Industries regulates mining and quarry activities. Extraction operations are commonly located in or near floodplains. This can lead directly or indirectly to

channel morphology and vegetation disturbance leading to increased stream heating. This qualifies DOGAMI as a DMA. Many of the elements required in an implementation plan will likely be met through the implementation of the 1200A General Permit and through DOGAMI's Best Management Practices Manual.

Current Status and DEQ Expectations:
DOGAMI does not presently have an Implementation Plan. DEQ expects that a Plan will be developed and suggests that DOGAMI may work with DEQ to develop a statewide implementation, as has been done by other State agencies. As a starting point, DEQ will work with DOGAMI to identify whether existing and planned regulated operations have potential adverse water quality impacts.

Federal Lands

The U.S. Forest Service and the Bureau of Land Management are the DMAs for federal lands in the Subbasins. In July 2003, both agencies signed memoranda of agreement with DEQ defining how water quality rules and regulations regarding TMDLs will be met. The agencies will develop Water Quality Restoration Plans (WQRPs) which will be the equivalent of TMDL Implementation Plans. In addition, BLM and USFS developed *the Northwest Forest Plan (NWFP) Temperature TMDL Implementation Strategies: Evaluation of the Northwest Forest Plan Aquatic Conservation Strategy (ACS) and Associated Tools* (the Strategy) (2005). DEQ conditionally approved the Strategy in September 2005 as the temperature TMDL implementation mechanism under the Clean Water Act.

Activities on lands managed by the USFS in the Lower Grande Ronde Subbasins follow standards and guidelines listed in the respective amended Land Resource Management Plans for the Wallowa-Whitman and Umatilla National Forests. Two important Plan amendments were adopted in 1995 which provide the federal agencies with interim strategies for managing fish-producing watersheds in eastern Oregon, Washington, Idaho, and portions of California. One amendment, known as PACFISH (USDA & USDI 1995), pertains to anadromous fish-producing watersheds, while the other one, known as INFISH (USDA 1995), pertains to inland native fish. PACFISH and INFISH provide interim direction for establishment and management of Riparian Habitat Conservation Areas (RHCAs) and standards and guidelines for Key Watersheds. According to PACFISH, most USFS watersheds in the Lower Grande Ronde Subbasins have been designated as Key Watersheds. The RHCAs include riparian corridors, wetlands, intermittent streams, and other areas that help maintain the integrity of aquatic ecosystems by: (1) influencing the delivery of coarse sediment, organic matter, and woody debris to streams, (2) providing root strength for channel stability, (3) shading the stream, and (4) protecting water quality by establishing interim buffer widths.

Current Status:
WQRPs have not yet been developed for any Federal lands within the Lower Grande Ronde Subasins.

DEQ Expectations:
DEQ expects submission of WQRPs reflecting evaluation of the forest condition relative to natural thermal potential and planning to address any deviations from NTP and long term maintenance of NTP conditions. It is expected that WQRPs will build on the existing protections provided by the Land Resource Management Plans and PACFISH/INFISH. It is also expected that WQRPs will address bacterial contributions to the Wallowa River watershed, such as from livestock grazing, where appropriate.

Urban and Rural Sources

Responsible participants for implementing DMA-specific TMDL Implementation Plans for urban and rural sources were identified in **Element G** above. These include: Wallowa County and the cities of Joseph, Wallowa, Enterprise and Lostine. *TMDL Implementation Plan Guidance* (DEQ, 2007a), provides useful guidance to assist urban and rural sources in developing Implementation Plans. This document can be downloaded from the DEQ website: http://www.deq.state.or.us/wq/TMDLs/implementation.htm.

Oregon cities and counties regulate land use activities through local comprehensive plans and related development regulations. This authority begins with a broad charge given to them by the Oregon constitution and the Oregon legislature to protect public health, safety, and general welfare. Oregon's land use planning system, administered through the Oregon Department of Land Conservation and Development , provides a unique opportunity for local jurisdictions to address water quality protection and enhancement. Many of the land use goals have direct links to water quality, particularly Goals 5 (Natural Resources, scenic, and historic areas and open spaces, OAR 660-015-0000(5)), Goal 6 (Air, water, and land resources quality, 660-015-0000(6)), and Goal 7 (Areas subject to natural hazards). In the case of Goal 5, there is a specific rule that requires local jurisdictions to protect significant riparian areas and wetlands from development. Goal 6 has no developed guidance or rules about how local jurisdictions should protect and enhance water quality, but provides a sound framework for new ordinances that address a wide variety of water quality objectives, based on state or federal regulations, including these TMDLs.

Urban, residential, and rural sources can contribute significant amounts of pollution to waterways. Counties and municipalities can play an important role in pollution prevention and water quality improvement by:

- Raising public awareness of the impacts of urban, residential, commercial, runoff on surface water quality
- Providing access to practical information (BMPs) to ensure septic systems function properly
- Providing public education and oversight of riparian area management

It should be noted that DEQ manages on-site sewage disposal in Wallowa County through the State's Onsite Wastewater Management Program. The Program's goal is to ensure that septic systems are properly sited, installed, operated and maintained to protect land, water and public health. Wallowa County and the municipalities can assist DEQ by providing outreach and educational materials to landowners.

Wallowa County

Each county is required to have a comprehensive plan and accompanying development ordinances to be in compliance with state land use planning goals. While the comprehensive plan must serve to implement statewide planning goals mandated by law, counties also have a wide degree of local control over how resource protection is addressed in their community.

Wallowa County has demonstrated great leadership and initiative in addressing natural resource issues. For almost two decades the County has been cooperatively working with land owners to promote healthy riparian conditions and improved water quality. Wallowa County amended its Land Use Plan to include the Wallowa County-Nez Perce *SHRP* (1999) to guide land resource management. In 1995 the County Court adopted a Resolution that the *SHRP* would be implemented on all County lands. Under the *SHRP* umbrella the County, in cooperation with the Nez Perce Tribe, is taking significant steps toward continual improvement of watersheds, fisheries habitat and water quality.

In 1996 the Wallowa County Court appointed the Wallowa County Natural Resource Advisory Committee (NRAC) to advise the Court on natural resource matters affecting the County. The NRAC is comprised of members representing landowner, industry, professional, environmental, state, tribal, federal, county, and community interests. A technical committee provides specific natural resource expertise to the NRAC. The NRAC reviews proposed County projects for consistency with the *SHRP* and other natural resource provisions of the County's Comprehensive Land Use Plan.

Current Status:

In a December 4, 2003, letter to the County, DEQ affirmed that Wallowa County's Comprehensive Land Use Plan in conjunction with the *SHRP* provided the functionality to serve as the County's TMDL Implementation Plan. However, because the Comprehensive Land Use Plan was developed prior to the

TMDL, the letter noted that some key technical components required in TMDL implementation plans were absent and would need to be addressed once TMDLs were completed.

DEQ Expectations:
Upon approval of the Lower Grande Ronde Subbasins TMDLs, it is DEQ's expectation that Wallowa County will develop a TMDL Implementation Plan that will achieve the load allocations established by the TMDLs. The County can either develop its own Plan, or work with the Nez Perce Tribe and other stakeholders to provide the necessary modifications to the *SHRP*. It is expected that the Plan will incorporate existing management strategies, as well as include an assessment of ways in which County operations could be modified to better meet TMDL load allocations. Management strategies could include: education about riparian protection, evaluation of roads located along perennial streams for impediments to temperature load allocation attainment, restoration of river shading and/or channel condition on County owned properties, and consideration of riparian protection ordinances and low impact development building practices.

Municipalities

The municipalities of Enterprise, Joseph, Wallowa and Lostine will be responsible for developing and submitting TMDL Implementation Plans. The scope and scale of the Plans will likely be different due to the size and jurisdiction of the different DMAs.

Current Status and DEQ Expectations:
Enterprise, Joseph, Wallowa and Lostine do not currently have a TMDL Implementation Plan. Upon approval of the Lower Grande Ronde Subbasins TMDLs it is DEQ's expectation that they will develop and submit an Implementation Plan that will achieve the load allocations established by the TMDLs. It is expected that the Plans will incorporate existing management strategies, as well as include an assessment of ways in which City operations could be modified to better meet TMDL load allocations. Management strategies could include: education about riparian protection, evaluation of roads located along perennial streams for impediments to temperature load allocation attainment, restoration of river shading and/or channel condition on City owned properties, and consideration of riparian protection ordinances and low impact development building practices.

(I) Schedule for Preparation and Submission of Implementation Plans

This element specifies a timeline for the preparation and submission of Implementation Plans by DMAs. In accordance with OAR 340-042-0060, TMDLs are issued as a DEQ order, effective on the date signed by the Director. DEQ will notify all affected NPDES permittees and DMAs identified in this document and persons who provided formal comment on the draft TMDL within 20 business days of TMDL issuance. DEQ expects that DSL, DOGAMI, USFS, BLM, Wallowa County, Enterprise, Joseph, Wallowa and Lostine will fulfill the planning and evaluation expectations of **Element H** with 18 months of the date of receipt of their notification letter. ODA follows a two year timeline from the last AgWQMAP review as specified by rule.

OAR 340-042-0080(3) defines the required elements of a TMDL implementation plans. The main elements are as follows:

- Management strategies the DMA will use to achieve load allocation(s) and reduce pollutant loading;
- A timeline for implementing management strategies and a schedule for completing measurable milestones;
- Performance monitoring with a plan for periodic review and revision of the implementation plan;
- Evidence of compliance with applicable statewide land use requirements; and
- Any other required elements if specified in this WQMP.

DEQ review and approval of TMDL Implementation Plans is called for in OAR 340-042. Following approval of the TMDL implementation plan, DMAs will be expected to submit to DEQ an annual status

report briefly describing the status of management strategies that implement TMDL pollutant allocations or reductions. Every fifth year DMAs will need to submit an evaluation report. The report will describe the effectiveness of the management strategies identified in the TMDL Implementation Plan and put into place during the preceding four years. The report will indicate whether implementation of their plan is adequately meeting the pollutant reduction goals. If they determine it does not, the report will describe the steps they will take to modify their plan. In addition, DMAs may be required to review and revise their TMDL implementation plan as needed following DEQ's reevaluation or revision of the TMDL.

(J) Reasonable Assurance

This element of the WQMP is intended to provide reasonable assurance that the WQMP (along with the associated DMA-specific Implementation Plans) will be implemented and that the TMDL and associated allocations will be met.

There are several programs that are either already in place or will be put in place to help assure that this WQMP will be implemented. Some of these are traditional regulatory programs such as specific requirements under NPDES discharge permits. Other programs address nonpoint sources under the auspices of state law (for forested and agricultural lands) and voluntary efforts. The status of these different programs in the Subbasins was summarized in **Element H** above.

Should any responsible participant fail to comply with their obligations under this WQMP, DEQ will take all necessary action to seek compliance. Such action will first include negotiation, but could evolve to issuance of DEQ or Commission Orders and other enforcement mechanisms.

(K) Monitoring and Evaluation

Monitoring and evaluation has three basic components: 1) monitoring the implementation of TMDL Implementation Plans and activities as identified in this document; 2) evaluating the effectiveness of management practices; and 3) tracking water quality trends to ensure TMDL wasteload and load allocations are being achieved and water quality criteria are being met. DEQ generally expects that DMAs will monitor implementation efforts and that DEQ and various natural resource organizations including DMAs will participate in effectiveness and water quality monitoring.

The information generated by each of the agencies/entities gathering data in the Subbasins will be pooled and used to determine whether management actions are having the desired effects or if changes in management actions and/or TMDLs are needed. This detailed evaluation (refer to **Element M**) will be planned, as feasible, roughly on a five year cycle. If progress is insufficient, then the appropriate management agency will be contacted with a request for additional action. This monitoring and feedback mechanism is a major component of the "reasonable assurance of implementation" for this WQMP.

Although collaborative monitoring capabilities and plans have not yet been developed in response to an approved TMDL, it is anticipated that monitoring efforts will consist of some of the following types of activities:

- Reports on the numbers, types and locations of projects, BMPs and educational activities completed
- BMP efficacy evaluation
- Instream monitoring to track progress towards achieving water quality numeric criteria
- Monitoring riparian vegetation communities and shade to assess progress towards achieving NTP targets established in the temperature TMDL

As available, DEQ will contribute resources and training to design and/or implement quality water monitoring efforts. The monitoring program of the Grande Ronde Model Watershed is another source of monitoring expertise to assist in monitoring efforts, if staff and resources are available.

(L) Public Involvement

DEQ believes that public involvement is essential to any successful water quality improvement process. There was public involvement throughout the TMDL development process and public involvement in implementation will be important as well. Each DMA will be responsible for outreach efforts relating to their ongoing land management and TMDL implementation. DEQ will also promote public involvement through direct association and contact with existing public groups that work toward restoration and environmental protection in the Lower Grande Ronde Subbasins. These groups include: the Grande Ronde Model Watershed, the Wallowa County Natural Resources Advisory Committee, SB1010 Local Advisory Committee, the Wallowa County Soil and Water Conservation District, USFS, and ODFW.

(M) Maintaining Management Strategies over Time

DEQ administers a TMDL implementation program that will oversee the combined efforts of DMA Implementation Plans and DEQ permitting programs. As addressed in **Elements E** and **H**, each DMA will develop and/or review their TMDL Implementation Plan or program for its effectiveness in addressing load allocations. Each DMA will submit an annual report describing the implementation efforts underway and noting changes in water quality. DEQ will review these submittals and recommend changes to individual Implementation Plans if necessary. The 303(d) listing and TMDL process and the management planning associated with WQRPs, forest practices, agricultural and transportation planning are ongoing by design. Taken together, these efforts should ensure that management strategies are maintained over time.

(N) Costs and Funding

One purpose of this element is to describe estimated costs and demonstrate that there is sufficient funding available to begin WQMP implementation. Another purpose is to identify potential future funding sources for project implementation. The cost of restoration projects varies considerably and can range from zero cost, or even profit due to improvements, to full channel reconstruction and land acquisition which can cost hundreds of thousands of dollars per river mile. Restoration can be passive or active. Passive restoration results from removing stresses to the channel, vegetation and floodplain and allowing the river system to naturally recover. This can be accomplished through measures such as fencing or allowing natural vegetation to grow between farm fields and streams. Active restoration involves channel construction, installation of structures to capture sediment or re-direct water, etc., and tends to cost more than passive. Different measures are appropriate for different management styles, land uses, and types of geomorphic or vegetative impairment. Given these complexities and uncertainties, a cost analysis is not attempted here. DMAs will be expected to provide a fiscal analysis of the resources needed to develop, execute and maintain the programs described in their Implementation Plans.

DMAs and other natural resource organizations are already implementing numerous natural resource enhancement efforts and projects in the Subbasin which are relevant to the goals of the plan, through a variety of funding sources. Financial assistance is provided through a mix of cost-share, tax credit, and grant funded incentive programs designed to improve on-the-ground watershed conditions. Some of these programs, due to the sources of their funding, have specific qualifying factors and priorities. **Table 4-2** shows a partial list of assistance programs available in the Subbasin.

Grant funds are available for improvement projects on a competitive basis. Field agency personnel assist landowners in identifying, designing, and submitting eligible projects for these grant funds. For private landowners, the recipient and administrator of these grants is generally the local Soil and Water Conservation District or watershed council.

Table 4-2. Partial list of funding sources for natural resource enhancement projects

Program	Agency/Source
Oregon Plan for Salmon and Watersheds	OWEB
Environmental Quality Incentives Program	USDA-NRCS
Wetland Reserve Program	USDA-NRCS
Conservation Reserve Enhancement Program	USDA-NRCS
Stewardship Incentive Program	ODF
Access and Habitat Program	ODFW
Partners for Wildlife Program	USFWS
Conservation Implementation Grants	ODA
Conserved Water Program and other water projects	OWRD
Nonpoint Source Water Quality Control (EPA 319)	DEQ/USEPA
Riparian Protection/Enhancement	USACE
Oregon Community Foundation	OCF
Watershed Initiative Grants	USEPA
Clean Water State Revolving Funds (SRF) Low Interest Loans	DEQ/USEPA
Community-based Restoration Program	NOAA-Fisheries

(O) Citation of Legal Authorities

The implementation of TMDL waste load and load allocations and the associated implementation plans are generally enforceable by DEQ, other state and federal agencies, or local governments. It is envisioned that sufficient initiative exists to achieve water quality goals with minimal enforcement. Should the need for additional effort emerge, it is expected that the responsible agency will work with land managers to overcome impediments to progress through education, technical support or enforcement. Enforcement may be necessary in instances of insufficient action towards progress. This could occur first through direct intervention from land management agencies (e.g. ODF, ODA, counties and cities) and secondarily through DEQ. The latter may be based on departmental orders to implement management strategies leading to attainment of water quality standards.

Clean Water Act Section 303(d)

Section 303(d) of the 1972 Federal Clean Water Act as amended requires states to develop a list of rivers, streams and lakes that cannot meet water quality standards without application of additional pollution controls beyond the existing requirements on industrial sources and sewage treatment plants. Such water bodies are referred to as “water quality limited”. Water quality limited waterbodies must be identified by the EPA or by a state agency which has been delegated this responsibility by EPA. In Oregon, this responsibility rests with DEQ. DEQ updates the list of water quality limited waters every two years. The list is commonly known as the 303(d) list. Section 303 of the Clean Water Act further requires that TMDLs be developed for all waters on the 303(d) list. DEQ also has this responsibility.

Endangered Species Act, Section 6

Section 6 of the 1973 Federal Endangered Species Act as amended encourages States to develop and maintain conservation programs for federally listed threatened and endangered species

Oregon Revised Statute

The DEQ is authorized by law to prevent and abate water pollution within the State of Oregon pursuant to the following statute:

ORS 468B.020.

(1) Pollution of any of the waters of the state is declared to be not a reasonable or natural use of such waters and to be contrary to the public policy of the State or Oregon, as set forth in ORS 468B.015.

(2) In order to carry out the public policy set forth in ORS 468B.015, ODEQ shall take such action as is necessary for the prevention of new pollution and the abatement of existing pollution by:

(a) Fostering and encouraging the cooperation of the people, industry, cities and counties, in order to prevent, control and reduce pollution of the waters of the state; and

(b) Requiring the use of all available and reasonable methods necessary to achieve the purposes of ORS 468B.015 and to conform to the standards of water quality and purity established under ORS 468B.048.

ORS 468B.025 No person shall cause pollution of any waters of the state or place or cause to be placed any wastes in a location where such wastes are likely to escape or be carried into the waters of the state by any means.

NPDES and WPCF Permit Programs

DEQ administers two different types of wastewater permits in implementing ORS 468B.050. These are: the NPDES permits for waste discharge; and WPCF permits for waste disposal. The NPDES permit is also a Federal permit and is required under the Clean Water Act. The WPCF permit is a state program. As permits are renewed they will be revised to insure that all 303(d) related issues are addressed in the permit.

Oregon Administrative Rules

OAR 340-042 contains Department rules for TMDL establishment, issuance, implementation, and public participation. The following Oregon Administrative Rules provide numeric and narrative criteria for TMDL parameters of concern in the Subbasins:

TMDL Parameter	Applicable Rules
Temperature	OAR 340-041-0028
Bacteria	OAR 340-041-0009

Oregon Forest Practices Act

The Oregon Forest Practices Act was enacted in 1971. The Oregon Department of Forestry is the designated management agency for regulation of water quality on non-federal forest lands. The Board of Forestry has adopted water protection rules, including but not limited to OAR Chapter 629, Divisions 635-660, which describes BMPs for forest operations. The Environmental Quality Commission, Board of Forestry, DEQ and ODF have agreed that these pollution control measures will be relied upon to result in achievement of state water quality standards. Forest operators conducting operations in accordance with the Forest Practices Act are considered to be in compliance with water quality standards. A 1998 Memorandum of Understanding between both agencies guides the implementation of this agreement, as described in **Element H**.

ODF and DEQ statutes and rules also include provisions for adaptive management that provide for revisions to FPA practices where necessary to meet water quality standards. These provisions are described in ORS 527.710, ORS 527.765, ORS 183.310, OAR 340-041-0026, OAR 629-635-110, and OAR 340-041-0120.

Oregon Senate Bill 1010 (Agriculture Water Quality Management Act)

The Oregon Department of Agriculture has primary responsibility for water pollution control from agriculture sources. This is accomplished through the Agriculture Water Quality Management program authorities granted ODA under Senate Bill 1010 adopted by the Oregon State Legislature in 1993 (ORS 569.000 through 568.933) and Senate Bill 502 adopted 1995 (ORS 561.191).

SB1010 directs ODA to work with local communities, including farmers, ranchers, and environmental representatives, to develop Agricultural Water Quality Management Area Plans and rules throughout the State. SB502 stipulates that ODA "*shall develop and implement any program or rules that directly regulate farming practices that are for the purpose of protecting water quality and that are applicable to areas of the state designated as exclusive farm use zones or other agricultural lands*." The plans are accompanied by regulations in OAR 603-90 and portions of OAR 603-95, which are enforceable by ODA. As discussed in **Element H**, TMDL implementation coordination between ODA and DEQ is guided by an MOA signed in 1998.

Local Ordinances

Within the TMDL Implementation Plans, the DMAs are expected to describe their specific legal authorities to carry out the management measures they choose to meet the TMDL allocations. Legal authority to enforce the provisions of a City's NPDES permit would be a specific example of legal authority to carry out management measures.

4.3 TMDL-RELATED PROGRAMS, INCENTIVES AND VOLUNTARY EFFORTS

TMDLs in Oregon are designed to coordinate with and support other watershed protection and restoration efforts. Watershed enhancement in the Subbasins is ongoing and is, for the most part, consistent with or directly implements the load allocations of the TMDL. While regional programs are in place, much of the restoration is locally based. A summary of on-going implementation plan activities in the Lower Grande Ronde Subbasins is provided in **Table 4-3**.

Table 4-3. Ongoing Implementation Plan activities

Implement *The Wallowa County-Nez Perce Salmon Habitat Recovery Plan with Multi-Species Habitat Strategy*	Wallowa Co./Nez Perce Tribes
Oversee implementation of ordinances, policies and guidelines to improve/protect surface water quality	Wallowa Co.
Encourage and promote use of BMPs for urban sources	Wallowa Co.
Ensure all forest activities on federal lands comply with standards and guidelines listed in district forest plan, PACFISH, and BMPs defined in the implementation for Clean Water Act	Wallowa Whitman & Umatilla National Forests
Ensure all forest activities on state and private land complies with Oregon Forest Practices Act	ODF
Implement *Wy-Kan-Ush-Mi Wa-Kish-Wit*	Nez Perce Tribes
Implement monitoring and evaluation program	USFS, ODFW, Wallowa SWCD, DEQ, ODF, ODA, Nez Perce Tribes, Grande Ronde Model Watershed
Implement Imnaha and Grande Ronde Subbasin Plans developed through the Northwest Power and Conservation Council's 2000 Fish and Wildlife Program	USFS, ODFW, Wallowa SWCD, DEQ, ODF, ODA, Nez Perce Tribes, Grande Ronde Model Watershed

4.3.1 The Oregon Plan for Salmon and Watersheds (Oregon Plan)

The Oregon Plan represents a major process, unique to Oregon, to improve watersheds and restore endangered fish species. The Plan consists of four essential elements:

(1) Coordinated Agency Programs: Many state and federal agencies administer laws, policies, and management programs that have an impact on salmonids and water quality. These agencies are responsible for fishery harvest management, production of hatchery fish, water quality, water quantity, and a wide variety of habitat protection, alteration, and restoration activities. Previously, agencies conducted business independently. Water quality and salmon suffered because they were affected by the actions of all the agencies, but no single agency was responsible for comprehensive, life-cycle management. Under the Oregon Plan, all government agencies that impact salmon are accountable for coordinated programs in a manner that is consistent with conservation and restoration efforts.

(2) Community-Based Action: Government, alone, cannot conserve and restore salmon across the landscape. The Oregon Plan recognizes that actions to conserve and restore salmon must be worked out by communities and landowners, with local knowledge of problems and ownership in solutions. Watershed councils, soil and water conservation districts, and other grassroots efforts are vehicles for getting the work done. Government programs provide regulatory and technical support to these efforts, but local people will do the bulk of the work to conserve and restore watersheds. Education is a fundamental part of the community based action. People must understand the needs of salmon in order to make informed decisions about how to change their way of life to accommodate clean water and the needs of fish. Development and implementation of the *Wallowa County-Nez Perce Salmon Habitat Recovery Plan with Multi-Species Habitat Strategy* is an excellent example of a community-based action.

(3) Monitoring: The monitoring program combines an annual appraisal of work accomplished and results achieved. Work plans are used to determine whether agencies meet their goals as promised. Biological and physical sampling are conducted to determine whether water quality and salmon habitats and populations respond as expected to conservation and restoration efforts.

(4) Appropriate Corrective Measures: The Oregon Plan includes an explicit process for learning from experience, discussing alternative approaches, and making changes to current programs. The Plan emphasizes improving compliance with existing laws rather than arbitrarily establishing new protective laws. Compliance is achieved through a combination of education and prioritized enforcement of laws that are expected to yield the greatest benefits to salmon.

4.3.2 Landowner Assistance Programs

A variety of grants and incentive programs are available to landowners in the subbasin. These incentive programs are aimed at improving the health of the watershed, particularly on private lands. They include technical and financial assistance, provided through a mix of state and federal funding. This assistance is administered by several organizations, including but not limited to: the Grande Ronde Model Watershed, the Wallowa County Soil and Water Conservation District, the Oregon Department of Forestry, the Oregon Department of Fish and Wildlife, DEQ, and the National Resources Conservation Service. These services include site evaluations, technical project design, stewardship/conservation plans, and referrals for funding as appropriate. This assistance and funding is further assurance of implementation of the TMDL WQMP. A list of funding sources or programs is provided in **Element N** of **Section 2.2**.

4.3.3 Voluntary Measures

There are voluntary, non-regulatory, watershed improvement programs that are in place and addressing water quality concerns in the County. These programs provide both technical expertise and partial funding. Examples of activities promoted and accomplished through these programs include: planting of conifers, hardwoods, shrubs, grasses and forbs along streams; relocating legacy roads that may be detrimental to water quality; replacing problem culverts with adequately sized structures, and improvement/ maintenance of legacy roads known to cause water quality problems. These activities have been and are being implemented to improve watersheds and enhance water quality. Many of these efforts are helping resolve legacy water quality issues.

4.4 REFERENCES

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