

# **SPOKANE RIVER DISSOLVED OXYGEN TMDL**

## **SIERRA CLUB IMPLEMENTATION PLAN PROPOSAL DISSOLVED OXYGEN WATER QUALITY CLEAN-UP PLAN (TMDL)**

**JULY 2004**

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**Spokane River Dissolved Oxygen TMDL  
Sierra Club Implementation Plan Proposal  
Dissolved Oxygen Water Quality Clean-Up Plan (TMDL)  
July 2004**

The Clean Water Act requires the Washington Department of Ecology to adopt a clean-up plan to improve dissolved oxygen in the Spokane River. As a part of that plan, Ecology must include implementation strategies that describe how the clean-up will be accomplished. Because conditions in the river are so bad, wastewater treatment plants may be required to adopt strict treatment standards and alternative disposal methods (in other words, not discharge to the River during the low flow season).

In an effort to promote productive discussion about the issues, Sierra Club proposed this implementation plan. It includes proposals for water conservation, influent reduction, pollution reduction, reclamation and reuse of wastewater, land application and other strategies. In addition to ideas, we included examples from other cities where these measures are being used successfully to control wastewater pollution, along with links to websites.

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### **Introduction**

In 1997, Ecology entered into a Memorandum of Agreement (MOA) with the U.S. Environmental Protection Agency regarding the development of TMDLs in Washington state. The MOA was the result of a lawsuit and consent decree filed in federal court that requires Ecology to complete all TMDLs by 2013. Among other requirements, the consent decree requires Washington TMDLs to include a Summary Implementation Strategy (SIS).

This document is a draft Summary Implementation Strategy or SIS, developed by the Sierra Club and the Center for Justice in Spokane for inclusion in the Spokane River dissolved oxygen TMDL. Its purpose is to outline the strategies and specific measures that point source dischargers will undertake in order to meet the dissolved oxygen water quality standard for the Spokane River. It is intended to serve as the basis for the SIS chapter of the TMDL.

The draft dissolved oxygen TMDL projects that point source dischargers will be required to meet a phosphorous effluent limit of 10 micrograms per liter (ug/l). To meet this standard, dischargers will have to either install new treatment technology or develop new strategies for disposing of treated effluent during the summer months. Because 40-50 million gallons per day of treated effluent is involved, the development and execution of implementation strategies requires forethought and planning.

According to Ecology's TMDL Guidance Document, development of the SIS should have begun when the draft technical report was issued, approximately one year ago. Given that Ecology plans to finalize and adopt the Spokane River DO TMDL by December, 2004, it is urgent that development of the SIS begin immediately.

### **1. SIS process and requirements.**

A Summary Implementation Strategy is a "clear, concise, and sequential presentation of the concept or vision of how to attain the pollution allocations stated in the TMDL technical report and upon implementation will result in meeting water quality standards." Guidance Document for Developing Total Maximum Daily Loads (TMDL) – Water Cleanup Plans, Dep't of Ecology Publ. No. 99-23-WQ at 20. (hereafter TMDL Guidance Document or GD). The SIS "should be a foundation for the detailed implementation plan" or DIP, which will be developed after EPA approves the TMDL. GD at 21.

In developing the SIS, the TMDL advisory group must develop and evaluate preferred cleanup strategies that identify commitments needed to achieve water quality goals for the project. GD at 22. The SIS is the foundation for the Detailed Implementation Plan, which is promulgated after the TMDL is submitted to EPA, and which must indicate what parties will undertake what actions, and by when. GD at 22.

Development of the SIS involves consultation with tribes, the technical advisory committee, and the community. The draft SIS must be circulated for public comment prior to submittal to EPA.

### **2. Schedule**

The schedule for implementation will be driven by the schedule for compliance as shown in June 22, 2004 draft TMDL or developed in subsequent drafts of the TMDL. Requirements for establishing implementation milestones, monitoring and evaluation implementation, and amending the TMDL if necessary, are discussed in Parts 5 and 6 below.

### **3. Strategies & Approaches to Achieve TMDL Allocations**

Each of the NPDES permit holders on the Spokane River will adopt the following strategies, as appropriate, to reduce phosphorous loading to the Spokane River and achieve waste load allocations (WLAs) as set forth in the TMDL.

#### ***A. INFLUENT CONTROL & REDUCTION***

##### **Background:**

Reduction of the volume and pollution content of influent into treatment plants can reduce the volume of effluent and thus the capacity requirements for treatment plants.

Influent reduction strategies include I/I (influent & infiltration) control and water conservation. Pollutant reduction strategies vary. Because phosphorous is a pollutant of concern in the Spokane River DO TMDL, control of phosphate content in household and commercial products can reduce phosphorous treatment requirements. Advances in wastewater treatment technologies have eliminated concerns that increase in pollutant concentrations caused by water use reductions will increase pollutant discharges.

**Strategies:**

1. Municipal NPDES permit holders will adopt measures to investigate and control I/I losses in municipal sewer systems.
2. Municipal NPDES permit holders will conduct water audits and adopt water conservation measures to reduce household and commercial water use by their customers.
3. Industrial NPDES permit holders will conduct internal water audits to reduce internal water use and industrial effluent.
4. Spokane County will adopt an ordinance to ban the sale and/or use of dishwashing detergent that contains phosphorous.

**Specific water conservation measures & examples:**

**(1) Infiltration & Inflow Control**

- Identification and reduction of inflow & infiltration (I/I) into sewer pipes reduces the quantity of influent into wastewater treatment plants, and is an effective tool to reduce the quantity of effluent discharged by treatment plants.

*Examples:*

- EPA surveyed 212 communities to develop 20 recommendations for I/I control that should be implemented *before* wastewater treatment plants are built or enlarged.  
<http://www.epa.gov/ednrmrl/repository/abstrac1/abstrac6.htm>
- King County, Washington has developed a comprehensive I/I control program designed to reduce the size and capacity of water quality conveyance and treatment systems, and thereby save public funding.  
<http://dnr.metrokc.gov/wtd/i-i/whatis.htm>
- San Antonio, Texas employs an aggressive I/I control program. Its original purpose was to protect recharge to the Edwards Aquifer, but has had the added benefit of reducing influent into the municipal wastewater treatment plant. <http://www.saws.org/infrastructure/>

**(2) Water Conservation**

- Enact ordinances requiring use of low-flow fixtures (toilets, washing machines, dishwashers, showerheads) in all new construction, ordinances requiring phased retrofit for existing residences and buildings (e.g., 10 years or when replacement needed, whichever comes first), and develop and funding rebate programs.

*Examples:*

- There are untold resources on municipal water conservation. A good place to start is Water Wiser, sponsored by the American Water Works Association (AWWA). <http://www.awwa.org/waterwiser/>
  - Seattle Public Utilities has undertaken an aggressive water conservation program. Consumption dropped more than 10 million gallons pre day, even while the city's population grew from 1 to 1.3 million. SPU's program includes use of conservation rate structures, a new plumbing code, low flow fixture program, and better systems operations. [http://www.seattle.gov/util/About\\_SPU/Water\\_System/index.asp](http://www.seattle.gov/util/About_SPU/Water_System/index.asp)
  - Tacoma reports 1.1 mgd in water savings from plumbing code changes. <http://www.ci.tacoma.wa.us/water/WaterConservation/conservacc.htm>
  - Denver's low flow fixture rebate program: [http://www.water.denver.co.gov/popmain.html?drought/rebate\\_program.html&2](http://www.water.denver.co.gov/popmain.html?drought/rebate_program.html&2)
- Water pricing is one of the most effective incentives to reduce consumer use of water. Purveyors must evaluate and adopt water conservation rate structures.

*Examples:*

- The Washington Dep't of Health has a series of publications on water pricing. <http://www.mrsc.org/Subjects/Environment/water/wc-measures.aspx#Conspricing>
  - The Municipal Research & Service Center (MSRC) provides links for seven Washington municipal ordinances adopting water conservation rates. <http://www.mrsc.org/Subjects/Environment/water/wc-rates.aspx>
  - Whitworth Water District has adopted conservation-oriented water rates to control excessive consumer usage.
- Require water purveyors to audit water leakage and evaluate internal water use (municipal buildings, etc.), install low-water fixtures, operational controls, etc.

*Examples:*

- The City of Tacoma has saved 5.8 mgd with leakage control and better management of reservoirs, transmission lines and meters. <http://www.ci.tacoma.wa.us/water/WaterConservation/conservacc.htm>

- Establish a program to conduct commercial water audits. Dischargers and municipalities will establish standards for categories of water use (i.e., restaurants, car washes, etc.), adopt ordinances to require appropriate water usage and use of low-water fixtures, develop commercial water audit program and schedules, develop and fund rebate programs to replace commercial water use fixtures.

*Examples:*

- Albuquerque, N.M. offers free water audits to commercial and residential customers, and reports post-audit savings of between 8 and 30%. <http://www.cabq.gov/waterconservation/auditformici.html>
- San Jose, California was ordered to reduce flows from its municipal wastewater treatment plant to protect salt marsh habitat for endangered species. As part of the program, the City conducted a Flow Audit Study to assess methods to reduce commercial and industrial discharges into the wastewater system. <http://www.ci.san-jose.ca.us/esd/fas.htm>
- Industrial water audits. Industrial dischargers shall audit internal water use and adopt recycling technologies as alternative to discharge. Phased reduction of permitted effluent discharge as contemplated under CWA NPDES program.

*Examples:*

- The Simpson Tacoma Kraft mill in Tacoma, Washington reduced water consumption by 10 million gallons per day by installing equipment to treat and recycle water within the plant. <http://www.simpson.com/environment.cfm>
- Crown Cork & Seal in Portland, Oregon saved 8.5 million gallons of water and \$46,000 per year by changing operation of flow-control valves and switching from water to air-cooled equipment. [http://www.sustainableportland.org/energy\\_Crown\\_Cork.pdf](http://www.sustainableportland.org/energy_Crown_Cork.pdf)

### **(3) Consumer Phosphorous Use Reduction**

- RCW Chapter 70.95L bans the use of laundry detergents with greater than 0.5% phosphorous content and dishwashing detergents with greater than 8.7% phosphorous. Spokane County should enact an ordinance banning the local sale of all dishwashing detergent with phosphorous content.

*Examples:*

- Phosphate-free dishwashing detergent is now available at competitive prices (e.g., Seventh Generation dishwashing detergent has zero phosphate content).
- Phosphorous reduction has been a critical issue in restoration of Chesapeake Bay. Reduction in consumer use is key.

[http://www.chesapeakebay.net/status/status\\_dev.cfm?SID=128&SUBJECTAREA=INDICATORS](http://www.chesapeakebay.net/status/status_dev.cfm?SID=128&SUBJECTAREA=INDICATORS)

## ***B. ALTERNATIVE TREATMENT TECHNOLOGY***

### **Background**

The Department of Ecology proposes a reduction in phosphorus point source loading to 50 ug/L by 2008 with a total reduction to 10 ug/L by 2015. These reductions are necessary in order to limit problematic algae blooms and restore the river to the dissolved oxygen levels required by the State under the Clean Water Act. Several technologies exist which appear to be capable of achieving stringent reductions of phosphorus.

### **Strategies:**

NPDES permit dischargers shall evaluate new technologies to determine suitability and cost effectiveness.

### **Examples & Contact Information:**

- Micromedia Technologies: 8544 Hamilton Avenue, Huntington Beach, CA 92646; Phone: (949) 683-8111, Fax: (949) 589-2555 E-Mail: [slux@micromediafiltration.com](mailto:slux@micromediafiltration.com)
  - MicroMedia Filtration Inc., is a two-stage self-cleaning filter that treats primary effluent, which can be used for processing both surface water and wastewater treatment. MicroMedia has received EPA certification of its CleanStream system.
  - Plants in Stemford and Walton New York have achieved phosphorus removal averages at 0.007 mg/l and .0097 mg/l respectfully using MircoMedia's dual sand filtration process as a tertiary filter.
- Blue Water Technologies Inc.: 206 Indiana Ave., Ste. 204; Coeur d'Alene, Idaho 83814; (208) 664-5734, Fax: (208) 667-6317; [www.blueh2o.net](http://www.blueh2o.net).
  - BlueWater Technologies Vandal Ion filter is a tertiary, end of pipe, filtration system which can be added to any existing treatment system.
  - Blue Water claims to have the most advanced system to remove phosphorus in the industry. Removes phosphorus to NPDES discharge limits including non-detect (< 10ppb) limits.

## ***C. RECLAMATION & REUSE***

### **Background:**

RCW 90.46.005 states: "[T]he people of the state of Washington have a primary interest

in the development of facilities to provide reclaimed water . . . . To the extent reclaimed water is appropriate for beneficial uses, it should be so used . . . .” In the case of the Spokane River, this mandate is also an opportunity.

Reclaimed (or recycled) water is already used extensively at locations across the country, and would provide at least two significant benefits: First, water which is reclaimed for other purposes need not be discharged into the river, reducing the stress on the system.

Second, reclaimed water used locally substitutes for water which would otherwise be drawn from natural sources. Eliminating the need for such withdrawals enhances natural flows, including avoiding negative effects occurring upstream of the current discharge points. As municipalities and holders of state waste discharge permits are among those eligible to obtain water reclamation permits (see, e.g., RCW 90.46.030(4)), this option is available to all point source dischargers on the Spokane River.

Pursuant to RCW 90.46, the Washington State Departments of Health and Ecology issued the *Water Reclamation and Reuse Standards* (publication #97-23, hereafter Standards) in September 1997. These standards identify various uses appropriate for reclaimed water and set the criteria to be met by water used for each such purpose. One significant use is for irrigation, where some of the same substances considered contaminants when dumped in a river serve a beneficial purpose instead.

**Strategies:**

- (1) Municipal sewage treatment plants shall implement programs to provide reclaimed water of suitable quality for appropriate and available local uses.
- (2) Municipalities shall implement programs to use reclaimed water for all appropriate beneficial uses.
- (3) Land use planning shall require all major residential, commercial, industrial, and municipal development projects to include accommodation for appropriate reclaimed water uses.
- (4) Industrial dischargers shall develop their own reclamation facilities, contract to redirect their discharges into municipal reclamation facilities, or contract to substitute municipal reclaimed wastewater for industrial purposes.

**Specific reclamation and reuse measures:**

- Each municipality shall develop and implement a phased plan for converting municipal landscape irrigation to use reclaimed water, including roadways, golf courses, athletic fields, parks, and school grounds. The Level 1 Assessment for the Middle Spokane Watershed suggests that local non-agricultural irrigation demand is roughly equal to total municipal wastewater discharges, indicating a significant potential use for reclaimed water.
- Each municipality shall provide the opportunity for major private landscape irrigators to convert to reclaimed water. Municipalities shall provide reasonable incentives for such conversion.

- Each municipality shall facilitate delivery of reclaimed water to major development projects, both for construction use and later maintenance use. Such development projects shall be required to be constructed with the ability to use reclaimed water use for all appropriate purposes even if such use is not anticipated for the foreseeable future.
- Each municipality shall develop and implement a phased plan for converting significant uses identified in Article 4 of Section 1 in the Standards to reclaimed water.
- Each municipality shall develop and implement a plan for identifying suitable sites and creating or enhancing wetlands using reclaimed water. Such wetlands may be for wildlife, recreation, or education purposes, or any combination. The Standards limit reclaimed water discharged into wetlands to 1 mg/l of phosphorus, a standard that most Spokane River dischargers are meeting or exceeding.
- Any municipality with established uses which consume its entire reclaimed water supply need not implement further uses.
- Industrial dischargers that choose to develop independent reclamation facilities, the water reclaimed shall be used internally to the extent possible, with only the excess delivered off-site.

#### **Examples & Contact Information:**

- Tucson has provided reclaimed water for irrigation purposes for 19 years, supplying an average of over 9 MGD to users including 14 golf courses, 32 parks, 40 schools and over 300 individual homes.  
[http://www.ci.tucson.az.us/water/water\\_resources/reclaimed\\_water/reclaimed\\_water.htm](http://www.ci.tucson.az.us/water/water_resources/reclaimed_water/reclaimed_water.htm)
- San Diego has used reclaimed water for over 50 years, presently having two major water reclamation facilities processing a total of some 45 MGD of reclaimed water. The principal use is for landscape irrigation, with users including schools, industry, recreational facilities, the state highway department, etc. <http://www.sannet.gov/water/recycled/index.shtml>
- The Santee Lakes reclamation facility in San Diego County has offered recreational boating and fishing since the 1960s. While the same sort of facility is not as feasible for the Spokane area (the standards suggest reducing phosphorus levels for any such use), they should be a useful source regarding the marketing of reclaimed water recreation. <http://www.santeelakes.com/>
- The South Florida Water Management District uses the majority of some 575 MGD of reclaimed water processed in the state of Florida. Uses include landscape irrigation at golf courses, parks, schools and individual residences, wetlands enhancement, groundwater recharge, and cooling at a solid waste energy generation plant.  
<http://www.sfwmd.gov/org/wsd/wsconservation/pdfs/reuse/blwsurfreuse.pdf>
- Earlier this year, Denver opened the first phase of a water reclamation facility designed to process 30 MGD (at a cost of \$164 million) and capable of expansion to 45 MGD. The first major customer is using reclaimed water for cooling in an energy plant; other anticipated uses include irrigation and supplying lakes for

- recreation and wildlife. <http://www.denverwater.org/recycle/recycleframe.html>
- Salem, Oregon is presently testing a facility using constructed wetlands to treat reclaimed water. <http://www.salemnatural.net/index.htm>
  - San Antonio, Texas has operated water reclamation facilities since the 1930s. Current facilities include major sites processing some 120 MGD and small operations serving individual schools or communities. [http://www.saws.org/our\\_water/recycling/centers/index.shtml](http://www.saws.org/our_water/recycling/centers/index.shtml)
  - One of the demonstration projects authorized by RCW 90.46.110 is in Yelm, where an artificial wetland used for treatment and groundwater recharge also functions as a public park. <http://www.ci.yelm.wa.us/publicworks/cochrane.htm>
  - Eastern Municipal Water District (PO Box 8300 2270 Trumble Road, Perris, CA 92572; (909) 928-3777 ext. 4226) treats wastewater to tertiary levels through the use of gravity sand and gravel filters and then discharges it to a wetland which provides habitat for migratory birds, fish, and functions as a research and education center for alternative water treatment.

#### **D. Land Application**

##### **Background:**

One alternative to discharging treated waste water into the Spokane River is to land apply treated effluent, applying it at agronomic rates to support crops.

##### **Strategies:**

- (1) NPDES dischargers shall investigate land application potential and develop a land application program after influent reduction strategies have been employed, for that quantity of treated effluent that cannot be utilized re-use in the community.

##### **Examples & Contact Information:**

- Direct Application: Hayden Area Regional Sewer Board (Jim Taccogna) 10789 N Atlas Rd Rathdrum, ID 83835 – 7689 (208) 772-0672; [haydenwwtf@aol.com](mailto:haydenwwtf@aol.com).
  - Since 1995, Hayden has land applied treated effluent from mid-June to mid-September to approximately 450 acres, to irrigate 35 acres of hybrid poplar trees, and the rest to blue grass and alfalfa.
  - Discharge 1 mgd to the storage pond then apply it to land; monitor daily and only apply as much as is used by vegetation.
  - 95% removal of BOD and suspended solids
  - Research project with BlueWater Technologies now underway
- Biocycle Farm: Eugene, OR <http://www.ci.eugene.or.us/pw/ww/pww.asp>
  - Eugene, Oregon discharges its treated effluent onto poplar trees plantation. Trees are then sold for various commercial products.

- Chehalis, Washington is now implementing a dissolved oxygen TMDL imposing zero discharge limits for certain pollutants during low flow conditions at their outfall to the Chehalis River. One measure they are taking to achieve this requirement is water reclamation and use for irrigating a grove of poplars.

#### **4. Implementation Responsibilities of the Department of Ecology**

Both the TMDL Guidance Document and the Ecology-EPA MOA detail Ecology's responsibilities in developing implementation strategies. These include:

- ensuring meaningful public participation;
- providing technical assistance, including information concerning funding sources, to affected persons and agencies;
- issuing NPDES permits in conformity with the plan;
- monitoring the success of the plan and the compliance of the participants, and
- providing incentives for compliance and enforcement proceedings as necessary.

The following sections outline each of these responsibilities and set forth specific responsibilities concerning the Spokane River Dissolved Oxygen TMDL:

##### **a. Public/Community Participation**

The SIS should be jointly developed with the assistance of governmental agencies, conservation districts, citizen groups, tribes and other affected persons. Ecology should lead this coordinated effort through consultation and public oversight. Pursuant to the MOA, Ecology must implement a public participation process during the development of the TMDL which at a minimum meets federal requirements for public involvement. *See* 40 CFR § 25.4. These include:

- Making all information used in the TMDL process available to the public.
- Notifying all interested and affected persons at least 30 days prior to major actions such as submittal of a draft report to EPA or adoption of a TMDL.
- Consulting with the public prior to making final decisions through public hearings, public meetings, advisory groups, ad hoc committees, task forces, or workshops.
- Allowing for open public comment periods
- Responding to public comments and preparing a responsiveness summary as described in 40 CFR Part 25.8.
- Providing information concerning legal proceedings.

Because community participation is integral to a successful SIS, the TMDL Guidance Document recommends early identification and contact with those persons and entities most affected. At a minimum, the following should be contacted: Tribes, county commissioners, city and county officials, planners, public works departments; irrigation districts; affected businesses (wheat farmers, cattle ranchers, dairies, developers, etc.); 2514 groups; watershed groups; environmental groups; local health departments; point

source dischargers; legislators; other state and federal agencies (DOT, NMFS, USF&W, WDNR, WDFW, NRCS); local land owners. *GD at 15. See also Ecology's* publication, "Environmental Justice Public Participation Checklist" for further public outreach resources.

Development of the SIS should begin as soon as the draft technical report is received. The draft SIS must be put out for public comment prior to submittal to EPA. The SIS Public Comment Process should consist of the following items:

- Focus sheet sent to project mailing lists
- Newspaper ads (public comment period)
- News release (at recommendation of Public Information Officer)
- Public involvement calendar
- Public meetings
- 30-day comment period
- Response to comments
- Mail response to all commenters.
- Prepare responsiveness summary to public comments to include in Submittal Report

Guidance Document at 23.

### **B. Implementation Strategies for Point Sources/NPDES Permits**

Ecology will implement the Spokane River DO TMDL by incorporating appropriate conditions in discharger NPDES permits. Effluent limits in the Spokane River NPDES permits must conform to the TMDL. 40 CFR §§ 122.4, 122.44. For existing dischargers, the TMDL will include a compliance schedule setting forth interim targets and monitoring schedules as necessary to assess the efficacy of implemented controls. All permits must require effluent and ambient monitoring necessary to show that the effluent limits are being met and re-opener clauses allowing Ecology to modify or revoke the permit if the permit limits or the permittee fail to attain specified targets. 40 CFR § 122.44. *See also* WAC §§ 173-220-180, -190. All permits may be modified as necessary to achieve the interim targets set forth in the TMDL. 40 CFR §§ 122.44, 124.5.

No permits will be issued for new or expanded loads unless there is a TMDL in place and the applicant can show that its discharge will not degrade the waters, there are waste load allocations available, and the existing dischargers are on a compliance schedule. 40 CFR § 122.4. New sources/new dischargers must be in compliance with the required effluent limits set forth in the TMDL upon commencement and may not obtain a compliance schedule. WAC § 173-201A-510(4).

### **C. Technical Assistance & Funding**

As outlined above, community members, affected persons, tribes, and regional agencies participate in developing the cleanup plan, but only Ecology can submit a TMDL to EPA. Hence, Ecology should provide technical assistance to all participants as necessary to

insure that the final plan will not only gain EPA approval, but succeed. Ecology provides various resources to support voluntary compliance with environmental rules and regulations, many of which are listed at Ecology's website [www.ecy.wa.gov/ta.html](http://www.ecy.wa.gov/ta.html).

Multiple sources of financial assistance for water cleanup activities are available through Ecology and EPA grant and loan programs, local conservation districts, and other sources. Funding is available for such activities as:

- planning, design, and construction of wastewater and storm water treatment facilities;
- watershed planning, water quality monitoring, and wellhead protection;
- agricultural best management practices projects;
- local loan funds for water quality projects,;
- water reuse planning and facilities;
- lake restoration;
- acquiring wetland habitat for preservation,
- public information and education.

See Appendix A, Potential Funding Sources for Water Quality Projects

## 5. Monitoring

Under WAC § 173-220-210, any discharge authorized by a permit is subject to monitoring requirements as may be reasonably required by Ecology. The MOA, EPA Guidelines, and TMDL Guidance Document require detailed monitoring plans where implementation will be phased in over time. All permits must require effluent and ambient monitoring necessary to show that the effluent limits are being met and re-opener clauses allowing Ecology to modify or revoke the permit if the permit limits or the permittee fail to attain specified targets. 40 CFR § 122.44. See also WAC §§ 173-220-180, -190.

Monitoring for the Spokane River dissolved oxygen TMDL shall include the following:

- (1) Ambient monitoring of the Spokane River. An ambient water monitoring program must include collection and analysis of physical, chemical and biological data assurance and control programs to assure scientifically valid data. 40 CFR § 130.4. The data will be used to assess compliance with NPDES permits and the efficacy of nonpoint source cleanup strategies. Reports will be made public through section 305(b) reports.
- (2) Discharge monitoring reports prepared by NPDES permit holders. In addition to standard DMRs, for existing dischargers, the TMDL will include a compliance schedule setting forth interim targets and monitoring schedules as necessary to assess the efficacy of implemented controls.
- (3) SIS/DIP progress monitoring. The TMDL Detailed Implementation Plan will establish a series of milestones for the implementation of the strategies identified in Part 3 above. Ecology will develop and circulate a

quarterly report that indicates levels of progress for each party that is charged with responsibilities for implementation.

Pursuant to the Ecology-EPA MOA, the monitoring program must include interim and final targets to determine if the plan is working. The final targets must meet water quality standards at the end of the planned period. For point sources, a schedule of compliance shall be specified in the permit which will set forth interim requirements, the dates for their achievement, and reporting requirements. WAC § 173-220-140. Reports must be made available to the public for inspection.

For nonpoint sources, the TMDL must specify outcome-based, measurable targets and the agencies responsible for regular monitoring. Normally, Ecology must specify in the implementation plan other more restrictive measures which will be applied should initial measures not be implemented or successful. Because TMDL water quality planning is newly underway in Latah Creek and the Little Spokane River, the two major tributaries to the Spokane River that contribute nonpoint pollution, development and implementation of those plans must be coordinated with the Spokane River DO TMDL.

## **6. Evaluation & TMDL Amendment**

The monitoring and progress reports described in Part 5 shall be used as a basis for assessing the need for amendments to the TMDL. The TMDL and Detailed Implementation Plan shall be amended if (1) progress in implementation is not accomplished according to established milestones, (2) interim effluent targets are not met, or (3) ambient water quality monitoring indicates that dissolved oxygen in the Spokane River is worsening.

Spokane River Dissolved Oxygen TMDL  
Summary Implementation Strategy

**APPENDIX A**

**POTENTIAL FUNDING SOURCES  
FOR WATER QUALITY PROJECTS**

The following is a short list of the numerous websites offering information and links to financial and incentive programs for water quality enhancement.

1. The Department of Ecology's Water Quality Program administers three major funding programs that provide low-interest loans and grants for projects that protect and improve water quality in Washington State. Funding is available to local governments, recognized Indian tribes, special purpose districts such as sewer, health, and conservation districts, and not-for-profit groups.

The three programs sharing guidelines, application, and funding cycle are:

- The Centennial Clean Water Fund (Centennial), which provides low-interest loans and grants for wastewater treatment facilities and fund-related activities to reduce nonpoint sources of water pollution.
- The State Revolving Loan Fund (SRF), which provides low-interest loans for wastewater treatment facilities and related activities, or to reduce nonpoint sources of water pollution.
- The Section 319 Nonpoint Source Grants Program (Section 319), which provides grants to reduce nonpoint sources of water pollution.

See "Ecology's Grants and Loans Programs" at  
<http://www.ecy.wa.gov/programs/wq/links/funding.html>.

2. The EPA's website "Funding Opportunities" provides other links to potential funding sources and resources such as the following:
  - [Watershed Funding Information](#)
  - [Process for Applying for 319\(h\) Funds](#)
  - [Funding Documents](#)  
A list of funding documents that the "Nonpoint Source Control Branch" at EPA headquarters recommends.
  - [Applying for and Administering CWA Section 319 Grants: A Guide for State Nonpoint Source Agencies](#)  
This manual provides an overview of federal grant requirements to guide state and territory nonpoint source agency staff when applying for and administering grants awarded under the Clean Water Act Section 319.

- Nonpoint Source Minigrants (PDF, 100KB, 38 pages)  
This report describes mini-grants programs used by various States, local agencies, and non-profit organizations to implement efforts to address nonpoint source pollution and to protect or restore watersheds. Many of these are implemented as sub-awards, through State grant or contract mechanisms, of funds received by the State as part of an EPA grant under Section 319 of the Clean Water Act. Others are purely State-funded.
- A State and Local Government Guide to Environmental Program Funding Alternatives  
This document provides an overview of traditional (nongovernmental) funding mechanisms and innovative approaches for funding environmental programs.
- Office of Wastewater Management Financial Assistance page
- Environmental Finance Program - A Guidebook of Financial Tools  
This Guidebook is intended to be a working tool to enable practitioners in the public and private sector to find the appropriate methods to pay for environmental protection efforts. The Guidebook does not explain how or where to apply for nonpoint source related grants.
- The Clean Water State Revolving Fund - How to Fund Nonpoint Source & Estuary Enhancement Projects (PDF, 1.1MB, 19 pages)
- Cleaning Up Polluted Runoff with the Clean Water State Revolving Fund (PDF, 44KB, 2 pages)
- Capacity Building Resources  
This website, put together by the Nonpoint Source Capacity Building and Funding Work Group, provides watershed groups and local governments links to technical tools for scientific support, engineering support, information technology, assistance with legal issues, project management, outreach, and planning support. It also provides links to legal resources for activities such as permitting, enforcement, contracting, fund raising, and resource management.

See <http://www.epa.gov/owow/nps/funding.html>

3. The United States Department of Agriculture Natural Resources Conservation Service (NRCS) webpage "Conservation Programs" offers links to numerous water quality related financial assistance programs, including those offered in Washington State. See <http://www.nrcs.usda.gov/programs/>.
4. The United States Department of Agriculture's website "Funding for Water Quality" provides links to numerous federal programs that offer technical and financial assistance and incentives to public and private organizations and persons. See <http://www.nal.usda.gov/wqic/funding.html>.

5. Other resources may be found through the “Catalog of Federal Funding Sources for Watershed Protection” website which offers a searchable database of financial assistance sources to fund a variety of watershed protection projects. See <http://cfpub.epa.gov/fedfund/>.
6. Conservation Reserve Enhancement Program (CREP) - The Conservation Reserve Enhancement Program (CREP) is a joint partnership between the State of Washington and USDA, and is administered by the Washington State Conservation Commission and the Farm Services Agency (FSA). The agreement was signed in 1998 and provides incentives to restore and improve salmon and steelhead habitat on private land. The program is voluntary for landowners and the land enrolled in CREP is removed from production and grazing under 10 or 15 year contracts. In return, landowners plant trees and shrubs to stabilize the stream bank and to provide a number of additional ecological functions. Landowners receive annual rent, incentive and maintenance payments and cost share for practice installations. These payments made by FSA and the Conservation Commission, can result in no cost to the landowner for participation. See <http://crep.scc.wa.gov/>.
7. Environmental Quality Incentives Program (EQIP) - EQIP is the combination of several conservation programs that address soil, water, and related natural resource concerns. It encourages environmental and conservation farm improvements in a beneficial and cost-effective manner through technical assistance, cost-sharing, and incentive payments. See <http://www.nrcs.usda.gov/programs/eqip/>
8. Wetland Reserve Program - Wetland enhancement in exchange for retiring marginal agricultural land administered by NRCS. Provides technical and financial assistance. Contact : Wetland Reserve Program Coordinator for Washington State, USDA Natural Resources Conservation Service, West 316 Boone Ave., Suite 450, Spokane, WA 99201-2348, (509) 353-2337.