

**Key Elements of Spokane County's Proposed Managed Implementation Plan
Spokane River DO TMDL
(March 3, 2006)**

I. Introduction/Overview:

Spokane County appreciates the Washington State Department of Ecology's ("Ecology") work on the draft Managed Implementation Plan Proposal (January 2006). The County shares Ecology's goals of improving the water quality in the Spokane River and aquifer. Ecology invited the County to provide comments to Ecology's draft plan. In addition to our redlined comments to Ecology's draft implementation plan, we offer this summary of the County's proposed Managed Implementation Plan, which explains and supplements the County's redlined comments.

Because of the environmental review and permitting necessary for the County's proposed new regional sewage treatment plant to come online in the next five years, the County believes that it is important to reach agreement very soon on the key elements of the TMDL implementation plan. From the County's perspective, there are several elements of the plan that must be in place for the new regional plant to be constructed. First, the County must be given 20-years within which to achieve the TMDL targets, if those targets are based on the existing Dissolved Oxygen ("DO") standard. Second, the County must be given an NPDES permit that authorizes the discharge into the river with permit limits that can be consistently achieved with technology that will produce effluent meeting the current Class A Reclaimed Water Standards. Third, the County's NPDES permit must contain a reasonable compliance schedule to meet the TMDL's phosphorous targets. Fourth, Ecology must agree at year 11, to conduct a review to determine whether the existing DO standard is attainable, and must adjust the TMDL's goals, if necessary and appropriate based on that review. If these key elements are acceptable to Ecology, the County believes that an agreement can be reached that benefits the River, the aquifer, and the citizens of Spokane County. The key elements of the County's proposal are explained below.

II. Key Elements of the County's Proposal:

- 1) **20-Year Timeframe:** The TMDL should be implemented over a 20-year timeframe, consisting of two 10-year stages or phases. Specific action items should be identified within each ten-year period.
- 2) **Phosphorous Targets:** Provided that Ecology agrees to conduct a UAA to review the DO standard by the end of year 11, the County is willing to accept the pounds of phosphorous approach to meeting the DO TMDL target and to accept the draft TMDL phosphorous reduction target of 219 #/day (Draft TMDL, p. 27), which would be a goal that would be expected to be achieved by year 20. The County believes that nearly 80% of the reduction target could be achieved initially through technology upgrades at the existing and proposed new County regional treatment plant, assuming those upgrades could achieve an average 50 ug/L final effluent concentrations in the River during the TMDL season. The remainder of the reduction goal could be targeted through implementation measures for non-point source control, water conservation, reuse and/or infiltration. Under this approach, the County's point source allocation target would

be 3.34 #/day at the County's new 8 MGD plant and 4.17 #/day at the City of Spokane Plant, which would receive up to 10 MGD of the County's flow after the County's new regional plant is operating at its 8 MGD capacity. The sum total loading of 7.51 #/day at the end of the 20-year TMDL period would be a 73% reduction from the 27.7 #/day that were contributed to the River from County flows in year 2003. However, in year 2012, technology implemented at the new plant and at the City of Spokane plant could result in an interim reduction from 27.7 #/day down to 4.17 #/day or a reduction of 85%. The phosphorous reduction targets must be set forth in the TMDL as targets that would be expected to be achieved within 20 years.

3) NPDES Permit for New County Plant: Consistent with the approach outlined in the preceding paragraph, by the end of year 2011, the County will install and have operational an 8 MGD advanced effluent filtration technology sewage treatment plant that delivers effluent meeting the current Class A reclaimed water quality standards. Ecology will issue the County an NPDES permit that authorizes the discharge of that effluent to the River. Ecology will also issue the Ecology permits and/or approvals that are necessary for the use of the reclaimed water for reuse and rapid infiltration. The NPDES permit will contain performance-based, average seasonal effluent limits that can consistently be met, based on operating the plant to the best of the County's ability, consistent with wastewater treatment plant practices for advanced effluent filtration plants producing effluent meeting the current Class A Reclaimed water standards. Initially, interim limits would be based on pilot tests run by the County to select effluent filtration technology, with a goal of achieving a seasonal average performance of 50 ug/L P concentration. These interim limits would continue for five years after the plant begins operation. During the first year, the plant would be started up and de-bugged. During the next two years, full scale pilot tests would be run to test the plant in various operating scenarios, and during the next two years, the plant would be operated in optimum mode to generate adequate data to establish a statistically adequate data set to use in setting a final performance limit. After that time, sufficient performance data would be available from which to calculate final, performance-based, average seasonal limits, along with a compliance schedule to meet the existing DO water quality standard and TMDL phosphorous targets.

4) County Reuse/Rapid Infiltration: The County would like to be able to maximize the use of its reclaimed water through reuse and rapid infiltration. Both of these options are dependent on Ecology and the Department of Health permitting the reuse and infiltration options. To the extent that Ecology desires the County to rely heavily on these options, the County believes that it is very important to receive assurance from Ecology that Ecology will support these options with the public and other regulatory agencies and that Ecology will issue permits and approvals to the County. Spokane County believes that the County and Ecology share a mutual goal in this regard because if the County can re-use and infiltrate all of its water during the critical season (and possibly during other times), then the County will be able to meet the TMDL goal without conducting any other TMDL activities, which may have less predictable outcomes. There are, however, many uncertainties associated with the reuse and infiltration options, including potential legislation that may revise the reuse standards in 2010. These uncertainties make it very important for the County and Ecology to have a clear understanding of Ecology's commitment to and support of these options.

- 5) **Other Dischargers' Technology Upgrades:** During the first phase, the County expects that other point source dischargers will conduct pilot tests and select final filtration technology that will allow their facilities to be upgraded in order to provide improved phosphorous removal. The County expects that all of the municipal dischargers will strive to achieve a seasonal average effluent concentration of 50 ug/L, or better.

- 6) **Conservation:** During the first five (5) years of the TMDL implementation plan, the County will conduct an in-home water conservation program to target in-home use reduction of between 5-15%. The targeted reduction is dependent on the mix on existing homes that were built before and after the 1991 building code implementation. The conservation program will be modeled after the LOTT program that exists as of this date, including offering low-flow shower heads and toilets, and subsidizing front loading low water consumption clothes washing machines. The County will also promote outdoor water conservation. The County expects that other municipal point source dischargers will implement similar in-home water conservation measures. The County should be credited with phosphorous removal associated with this conservation program.

- 7) **Non-Point Source Control:** During the first three years of the TMDL implementation plan, the County will fund a proportionate share of the cost of developing a non-point source control plan for the Spokane Watershed. It is anticipated that federal and state funding will be provided to fund at least 50% of the cost of this study. A federal line item appropriation of approximately \$220,000 has already been approved. The plan will be implemented during the following seven years and then will be subject to readjustments based on the UAA conducted in year 11. If the County infiltrates or reuses effluent from its new plant during the critical season, the County will dedicate funding toward the cost of reducing P into the River using these measures rather than providing comparable funding toward implementation of non-point source control measures. At this time, the County anticipates an expenditure of up to \$10 million for implementation of either reuse measures or non-point source control measures during the first ten years of the TMDL implementation plan. The County should be credited for phosphorous removal associated with non-point source control. To the extent that the County continues to implement a Septic Tank Elimination System Program, this program will be acknowledged and credited for reduction of non-point sources at the time the septic tanks are eliminated.

- 8) **Stormwater Management:** Measures that the County implements under the Phase II Municipal NPDES Permit (anticipated to be issued in late 2006), which reduce phosphorous loading into the River or aquifer will be credited to the County.

- 9) **Detergent/Fertilizer Phosphorous Restrictions:** Within the first three years of the TMDL implementation plan, the County will support a phosphorous dishwashing detergent restriction to reduce phosphorous loading to the treatment plant and the septic tanks and will propose to implement a low phosphorous requirement for all residential and non-commercial lawn, and landscape fertilizer uses (inorganic fertilizers only). The County should be credited with phosphorous removal associated with these restrictions.

10) Avista Oxygenation: During the first 10 years, the County expects that Avista will develop and implement a tailrace DO enhancement (oxygenation) program aimed at achieving applicable DO standards downstream of Long Lake Dam.

11) UAA: After the UAA is conducted in year 11, the water quality standards for the River and Long Lake may need to be revised, the goals of the TMDL may need to be revised, and actions adjusted in accordance with the revised standards. If additional measures are necessary to meet the restated or revised TMDL goals, Spokane County will fund measures such as reuse, infiltration, non-point source control, and oxygenation projects in Long Lake to achieve its proportionate share of the delta necessary to meet the restated or revised TMDL goals. The decision on which measures or blend of measures to participate in will be made based on the probability of achieving the TMDL goal and on the cost-effectiveness of the measure(s).

12) Data Collection, Monitoring, and Reporting: Throughout the term of the TMDL, Spokane County will conduct monitoring of its proposed measures to be able to document the effectiveness of its phosphorous reduction efforts. The County's progress towards meeting the TMDL targets should be reviewed annually.

III. Conclusion:

We believe that the County's proposal to build a new regional plant that delivers effluent meeting Class A reclaimed water standard provides Ecology with assurance the water discharged from the plant will have less phosphorous than that of water currently discharged from the Regional Facility or from septic tanks. The County proposes the highest level of treatment on the most expedited timeframe of any discharger to the Spokane River. This means that in five years, the quality of water in the River and the aquifer will be better than it is today. The County offers to accompany the improved effluent with other actions, including reuse and infiltration, if those options are supported and permitted by Ecology, as well as conservation and non-point source control. We look forward to meeting with you to talk more specifically about our proposal and finalizing the Managed Implementation Plan.

cc: Jay Manning
David Peeler
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1. Introduction and Overview

Background

Development of a Spokane River Dissolved Oxygen TMDL began in 1998. A draft study plan was presented to the Spokane River Phosphorus Technical Advisory Committee, a group established under a 1989 agreement to control phosphorus in the Spokane River (see Appendix 6.1). To develop the Draft Dissolved Oxygen TMDL that was circulated in October, 2004 (see Appendix 6.2), Ecology used an extensive public participation process to develop the Draft TMDL (see Appendix 6.2) that was circulated in October, 2004. The Spokane River NPDES Permit holders, as well as other interested parties (the Petitioners), prepared detailed written comments to the Draft TMDL. The Petitioners also prepared

Following preparation of a Use Attainability Analysis (“UAA”) report and, Spokane River NPDES Permit holders and other interested parties (the Petitioners) filed a Petition for Rule Making concerning the Washington State water quality standards being applied to in development the Dissolved Oxygen TMDL. The Petitioners used an extensive public participation process to develop the UAA report. Prior to Ecology acting on the UAA Petition, at Ecology’s requests, the Petitioners and Ecology entered into an agreement to collaborate and prepare a proposed implementation plan (see Appendix XX). The Petitioners reserved their right to re-submit, either jointly or individually, the UAA Petition at any time.

Starting in February, 2005, the Collaboration began. Through a series of public meetings and detailed investigation of issues and implementation opportunities, the Collaboration agreed to prepare Implementation Plan scenarios. The Petitioners and the Sierra Club each offered independent scenarios describing Implementation Plan elements they favor. Both scenarios are characterized by multi-faceted, multi-jurisdictional coordinated efforts to create a healthier Spokane River.

Ecology’s Approach

This document is Ecology’s draft response to those scenarios. It takes the form of an expanded outline of Ecology’s perspective on key Implementation Plan elements and processes. It is a draft document aimed at moving the Collaboration substantially closer to an agreed upon TMDL Implementation Plan.

Ecology’s goal, which is a goal shared by the Collaboration, is to dramatically improve the amount of dissolved oxygen (DO) in the Spokane River and to protect existing and attainable beneficial uses that form the basis for meet Washington State and Spokane Tribe of Indians water quality standards. There is agreement that phosphorus (P) is the primary limiting-nutrient in the river which that limits the amount of DO levels in the Spokane River and the man-made impoundment, Lake Spokane. sets up conditions resulting in unacceptably low

~~DO levels.~~ Consequently, the Collaboration is concentrating on ways to reduce the amount of P in the river. Because strategies for managing P will likely result in reductions of C/BOD, ammonia, and TSS, ~~this~~ Draft TMDL implementation strategy with regard to P assumes reductions of ~~also deals with~~ C/BOD, ammonia, and TSS. Recognizing that strategies for managing P will likely result in reductions of these other important pollutants, the TMDL Implementation Plan focus on P is appropriate. The monitoring program outlined in this implementation plan will measure the success of reducing DO, C/BOD, ammonia, and TSS. ~~This focus, however, should not be construed as an acceptance of current conditions for the other pollutants.~~

Years of water quality testing and development of an advanced water quality model convincingly demonstrate that improved point source control of phosphorus will significantly improve Spokane River DO levels. Similarly, it is clear that controlling non-point sources, re-directing highly treated wastewater to beneficial uses away from the river (re-use and infiltration) will improve Spokane River DO levels. ~~assist.~~ Also, reducing the volume of treated waste-water through indoor water conservation efforts will reduce the amount of phosphorus discharged from wastewater effluent~~discharges,~~ and aggressively managing non-point sources of phosphorus can bring further improvement to the river.

While there continues to be a disagreement about Ecology's water quality standard for DO, as well as the beneficial uses that correspond to that standard, ~~There~~ is agreement about the need to act, provided that reasonable and feasible actions can be identified and implemented on a reasonable schedule. There is also agreement that point source discharges are major contributors to the DO problem in the Spokane River and that it is not possible to achieve Ecology's DO water quality standard even if all point source discharges in Washington and Idaho are removed entirely from the River. Prompt, productive, rational, feasible, reasonable, and manageable actions will unquestionably make significant improvements in the river's health. We know more than enough to begin.

~~The best available science shows a concentration of 10 µg/L P is the background concentration of P in the Spokane River.~~ ~~The initial~~ This is the target set in Ecology's Draft Dissolved Oxygen TMDL for the point source dischargers was 10 µg/L. This target was based on Ecology's assumption that the Spokane River could be comparable to the Little Spokane River, when assuming a background concentration of 10 µg/L. This assumption has been disputed by the Petitioners. The 10 µg/L target, or its equivalency, is the goal. ~~It is the target~~ to which the Implementation Plan aspires over the next 20 years. For clarity and action accountability, the Collaboration is expressing discharge goals in pounds of phosphorus (#P) rather than concentrations (µg/L). This is P concentration multiplied by water volume multiplied by a conversion factor. ~~Ecology proposes to supplement the Draft Spokane River TMDL to make #P more obvious.~~

In the Draft TMDL, Ecology estimated that 195.2 #/day of P was contributed by point sources and 150.8 #/day of non-point and natural background sources based on year 2003 loading. Further, the Draft TMDL identified goals for reductions in loading of 190.6 #/day and 23.8 #/day respectively, for a total reduction of 214.4 #/day over the implementation period for the TMDL. ~~permittee #P discharge goals are assigned as presented in the table below. Because Spokane County currently sends its wastewater to the City of Spokane for treatment, the County and City goals are combined. The County is proposing to construct a new treatment plant that will divert flows from the City plant. The goal needs to be divided to accommodate a County plant assuming some portion of the diverted flow is discharged in the Spokane River. Ecology is ready to assist the County and City in this effort should they require.~~

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<i>Permittee</i>	<i>Goal #P</i>
City/County of Spokane	2.90
Liberty Lake	0.03
Inland Empire Paper	0.20
Kaiser	1.30
<i>Idaho</i>	0.20
Total	4.83

~~Through the collaborative process, Ecology and the Petitioners have recognized that many different actions will be needed to meet the goals for reduction of P. The suite of actions will include implementation of effluent filtration treatment technologies at the treatment plants, water conservation, actions to control or reduce non-point sources, and implementation of water reclamation, reuse, and/or infiltration.~~

Ecology expects that permittees will work aggressively to achieve equivalent the goals for reductions of ~~their assigned~~ #P during the first ten years of the Implementation Plan; however, the Implementation Plan provides for an assessment of the progress on meeting the TMDL goals at the end of 10 years, including a review of progress on reduction of point sources and non-point sources, a review of water quality improvement in the Spokane River and Long Lake, and a review of the DO water quality standard. Based on the outcome of the 10-year assessment, adjustments to the goals for the water quality in the River may occur, and revisions to the suite of actions may be adopted. Regardless of the outcome of the assessment in year 10, the TMDL implementation period will be for a period of not less than 20 years.

~~Once a permittee achieves the #P goal, or the river in general is at 10 µg/L P, concentration measurements will apply. #P will no longer be used to express the permittee's target.~~

The federal Environmental Protection Agency (EPA) issues and administers NPDES permits in Idaho. The Collaboration includes EPA in an "ex officio" role

(EPA approves the Spokane River TMDL and reviews the TMDL implementation plan) and it includes Post Falls, Hayden and Coeur d'Alene, the upstream cities discharging treated effluent to the Spokane River. Currently EPA is preparing to issue revised NPDES permits to these Idaho municipalities. EPA is determining the maximum pollutant loadings from those permits that will not cause or contribute to a violation of Washington's water quality standards. The Collaboration expects EPA to act on the Idaho permits to ensure that point sources in Idaho reduce #P to the River in a manner that is fair and consistent with Washington's WQS and the WQS of the Spokane Tribe.

When the new Idaho permit limits are determined, there may need to be some reconsideration of such on Washington's Draft TMDL. EPA has agreed that at some appropriate time it will adjust the Idaho NPDES permits if the Idaho discharges are problematic in reaching the water quality standards, or TMDL goal. Meanwhile, it is expected that the impact of the planned new permits is not sufficient to delay the Collaboration's effort or the start of treatment technology upgrades and implementation of ~~other toolbox measures~~ other actions in Washington.

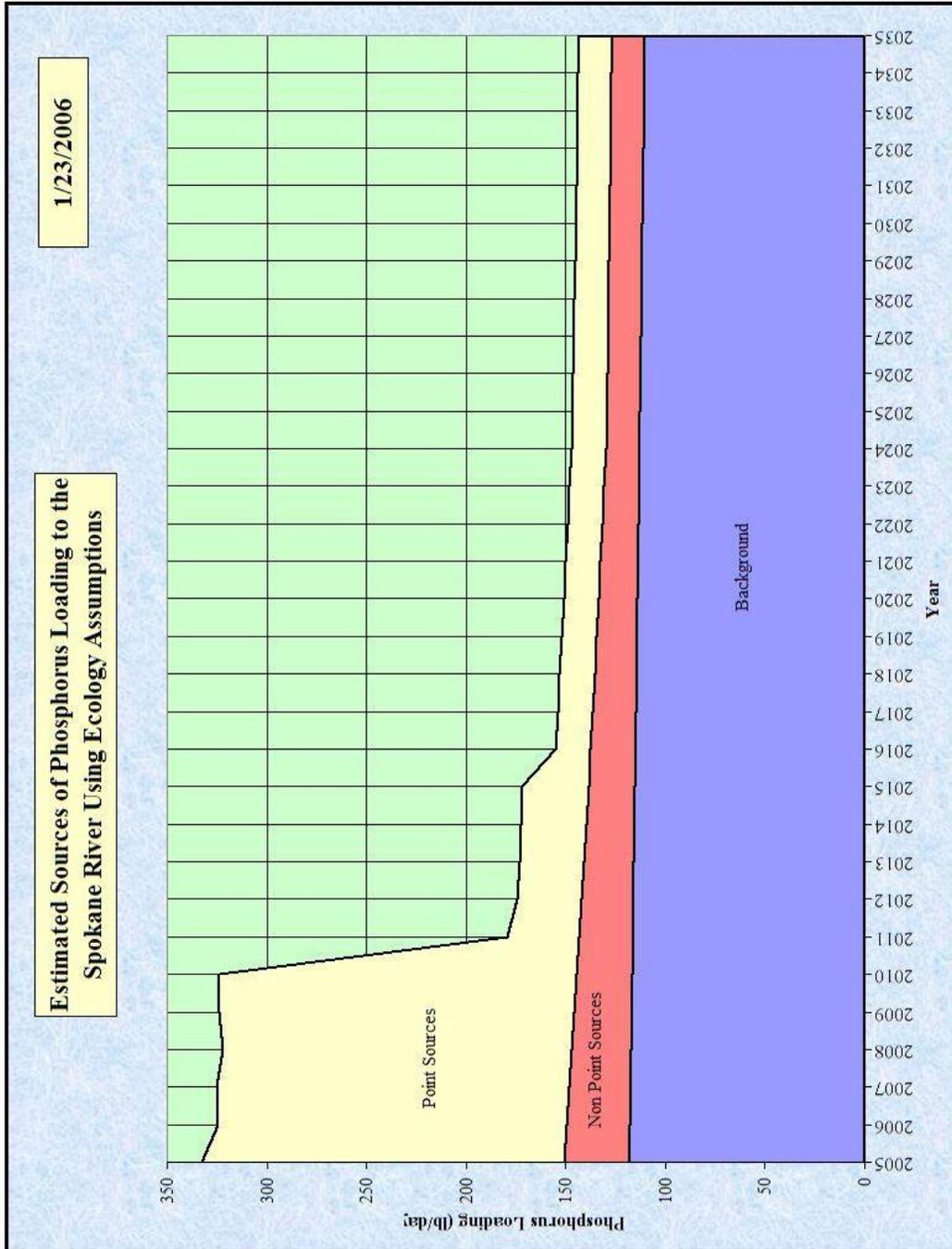
The exact beneficial results of improved point source treatment, treated water re-use, infiltration, conservation, and aggressive non-point source control can only be estimated. The results of these efforts cannot be precisely predicted or known until there is actual experience. The challenge is to devise a suite of actions that the permittees can commit to, which offers action commitments that offer reasonable assurance of meeting the interim and long-term TMDL goals, while clearly recognizing that exact outcomes, at this time, cannot be precisely predicted, and that Ecology's long-term TMDL goal and DO WQS will be reconsidered in 10 years in light of actual experience and monitoring data.

Resources for pursuing an improved Spokane River are limited to what can be afforded by those using the river and whatever assistance the state and federal governments can provide. Fiscal responsibility requires some-a high degree of predictability and confidence that dollars spent to improve the river will be effective and have long-term value. The quality of the river cannot be unreasonably compromised, nor can the ability of the people to fund and perform the necessary improvements be unreasonable. Consequently, both the Petitioners and the Sierra Club TMDL Implementation Plan scenarios envision a suite of concurrent, monitored actions over time that unfold in a planned manner with opportunities to re-direct the plan as experience, cost effectiveness and improved river understanding dictate. Ecology embraces this multi-faceted, adaptive approach and calls it the Managed Implementation Plan (MIP).

The graph titled "Estimated Sources of Phosphorus Loading to the Spokane River Using Ecology Assumptions" ~~is an approximate illustration of~~ how Ecology foresees a suite of concurrent actions resulting in fewer and fewer #P in the river over 20 years and beyond. The largest #P reductions are because of point

source technology improvements (for this illustration the graph assumes most discharges at 50µg/L by years 2011 and 2012). Other point source reductions result from assumptions about re-use of highly treated wastewater that is no longer discharged to the river.

As time progresses across the chart, experience with various P reduction strategies grows, the ability to predict results grows, familiarity with cost effectiveness grows and uncertainty is lowered. Exercising scheduled opportunities to revise and refine the TMDL Implementation Plan as it progresses assures maximum advantage from experience, improvements in science and known cost efficiency.



See Appendix 6.3 for Spreadsheet

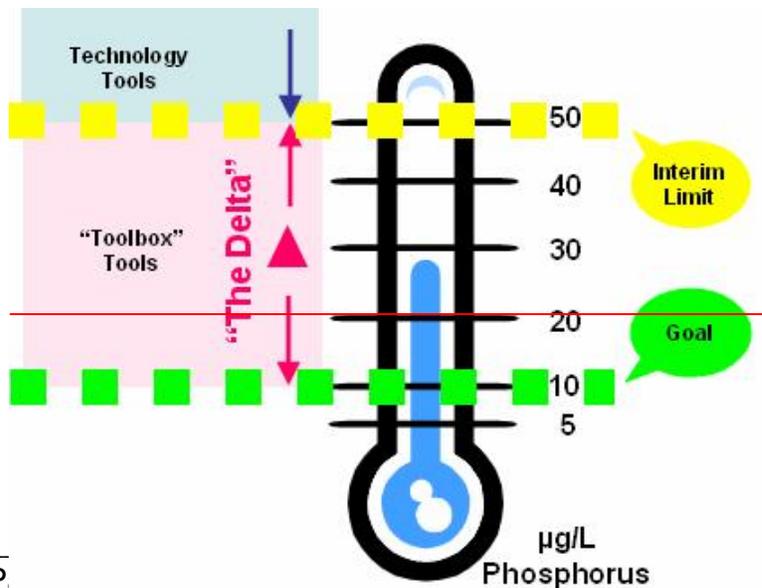
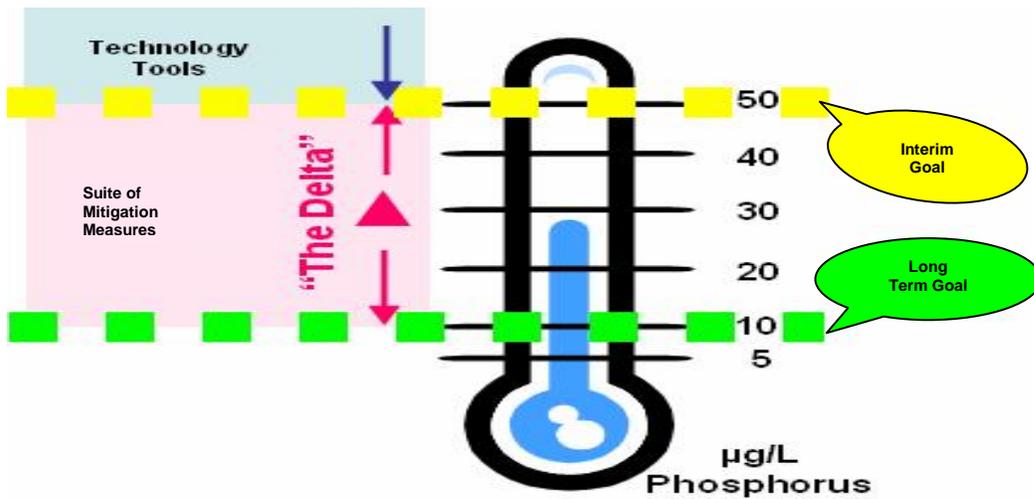
How the Implementation Plan Works

The Implementation Plan begins with the selection of improved point source (wastewater treatment plant discharge) treatment technology. The chart on the preceding page shows a dramatic drop in #P from point sources in 2011. This illustration assumes most technology improvements result in average seasonal discharges of 50µg/L P concentrations, and that each plant produces Class A Reclaimed Water. Although not at the goal of 10µg/L, this change results in significant P reductions for the Spokane River, achieving perhaps 80 percent of the reduction goals in the TMDL. ~~By far, s~~Selecting, installing and aggressively operating improved treatment technologies ~~are the largest contributors to a better river~~ will achieve the largest improvements to dissolved oxygen levels in Long Lake of any action in the suite of actions outlined in this MIP.

Ecology proposes each NPDES permittee use a vigorous, open, well-documented technology selection process that includes pilot testing. Since technology standards for P removal are not available, primary reliance is placed on “the best-most effective feasible” technology and the best operation possible^{*} to achieve the greatest P reduction.

There is disagreement on whether it is reasonable or even possible for current technology to reliably achieve a permit level of 10µg/L, which was, the basis for the #P goal the Draft TMDL assigned ~~each NPDES permittee to point sources~~. Consequently, the Implementation Plan offers options if a permittee selects a technology that results in more than the target #P being discharged to the river. The difference between the #P discharged from plants using improved technology and the long-term goal for #P is called “The Delta.” The Delta is achieved using the suite of actions outlined in this MIP. Review of the effectiveness of the commitments in the suite of actions will take place every five years, at years 5, 10, 15, and 20. Review and evaluation will be a joint effort between the dischargers and Ecology where applicable calculations, data, and reports will be used to facilitate the evaluation.

^{*} City of Spokane Deputy Mayor Jack Lynch, circa April, 2005



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Options for eliminating the Delta are collectively called “the suite of actions.” ~~Toolbox~~” The suite of actions ~~tools~~ include water re-use (and infiltration recharge), conservation and other influent management approaches (I/I reduction, pre-treatment for P, general reductions or elimination of high P dishwashing detergent) and non-point source management including septic tank elimination.

An additional ~~tool~~ action is sharing #P goal allocations. For example, suppose a permittee can, through a combination of ~~tools~~ actions, achieve P reduction beyond the assigned goal. That extra reduction may be shared among other permittees. Ecology’s interest is in achieving the aggregate goal for all permittees, and that goal may be achieved through use of any or all of the tools actions in the ~~Toolbox~~ suite of actions. The primary P reduction, however, is improved treatment technology that reduces #P to the river and opens the opportunity for re-use/infiltration recharge.

As part of the technology selection process, each Permittee, with Ecology’s involvement, will determine an initial Delta for their discharge and an accompanying commitment plan to for Delta reduction actions using the ~~Toolbox~~ suite of actions. The plan for technology improvements and other mitigation actions will be included in a Memorandum of Agreement between the Permittee and Ecology that will form a commitment during the period of the TMDL. Recognizing that the Delta and associated action commitments may need to be modified to some degree based on actual performance once a selected technology is installed, use of the tools implementation of the actions will start as soon as the initial commitments are made and later adjusted as appropriate.

There are different degrees of risk and return for each ~~tool~~ action, and perceptions of those risks and returns will likely vary among permittees. It is important, therefore, that each permittee select a technology and make Delta reduction commitments for their particular circumstance. Some of the ~~tools~~ actions, however, involve both individual and multi-jurisdictional actions. For example, indoor conservation from the standpoint of fixture replacement has greater potential in areas where structures were built prior to reduced-flow plumbing codes. Individual actions are in order. It is also possible to achieve better indoor conservation regionally through improved, wide-spread attention to fixture maintenance regardless of the age of plumbing equipment (fixing leaky faucets and toilet valves). Similar regional/local issues apply to reclaimed water, dishwasher detergent and fertilizer management, and non-point source programs. There is potential for reduced risk and higher return if there is a regional capability to support the ~~Toolbox~~ suite of actions.

Investments in technology are significant and the risk becomes substantially higher if discharge requirements are changed frequently. Ecology sees the

technology selection process for each Permittee as extremely significant, and Ecology expects to be closely involved. Ecology will view these technology decisions in light of a ~~probable-projected~~ 20 year pay-back time, i.e., once installed, the technology will be able to be used for at least 20 years. ~~Presuming the technology improvements are intelligently designed to allow foreseeable "add-on" processes,~~ Permittees installing new technology under this Implementation Plan can expect not to replace the technology for the 20-year timeframe. ~~However, Permittees may choose to implement additional technology(ies) to enhance their treatment performance during the 20-year TMDL implementation period.~~ ~~wholesale scrapping of that technology unless there is compelling financial reason to change it.~~

The Draft TMDL assigned #P goals to Permittees assuming a 20% reduction in the #P associated with non-point and background sources combined[†]. The non-point ~~total-source implementation measure~~ may be employed by a Permittee as part of the Permittee's Delta elimination commitment. Ecology recognizes #P reductions achieved at Permittee expense as the Permittee's Delta reduction. ~~The Delta elimination #P are not dependent on, and do not contribute to the assumed 20% non-point/background reduction. The assumed 20% non-point/background reduction is critical to successful TMDL and a healthy river, but that assumed reduction is separate from the Delta elimination reductions.~~

The Managed Implementation Plan, while relying on individual permittee action commitments, is a regional effort. It addresses a watershed problem. Many elements of the MIP call for some form of local entity to act as a clearing house or transaction facilitator or center for tracking and accounting. A regional entity, assuming it has financial capability, could serve as an investment center for #P removal from non-point sources that could be funded by jurisdictions lacking viable non-point projects within their own boundaries. The monitoring program necessary for measurement and reporting need a regional steering group. ~~As noted above, non-point efforts for Delta reduction would need to be separately accounted from #P reductions aimed at the assumed 20% cut in non-point/background.~~ A regional entity may be able to track such things as well as other multi-jurisdictional efforts on behalf of the participating jurisdictions and Ecology. The Collaboration is urged to consider a regional entity, its role and its authorities and responsibilities.

Accounting for #P reduction ~~becomes extremely is~~ important throughout the 20-years MIP. by the end of the first ten year period of the Implementation Plan. ~~After the first 10 years, At that point,~~ the monitoring effort, science, the best available science, and the tracking of Delta reduction action commitments made and kept will all be reviewed and the Managed Implementation Plan re-examined in light of actual experience, along with evaluation of the attainability of the DO standard.

[†] This reduction ~~assumed only X #P amounts to 80-85% of the controllable non-point sources~~ described in the Draft TMDL.

Prior to the initial ten year review, Ecology would like annual reviews of the status of action commitments and bi-annual river status reports. These should all be major, public reporting opportunities, and minor “course corrections” (dropping un-productive efforts, adding and enhancing productive ones) should be determined and executed as part of MIP adaptive management.

The ten year review, however, will be is a very complete, data-based, objective review that is based on actual. ~~This is the major opportunity to test whether “reasonable assurance” has become certain and what changes are needed. After 10 years, planning and implementation of technology and use of the Toolbox will have produced several years of actual experience. It is this experience and the associated changes in the Spokane River, plus other changes not anticipated as well as improved science and modeling. The Collaboration will then have that give cause and justification to for re-examin~~ing the Managed Implementation Plan, the interim and long-term TMDL goals, and the existing and attainable uses in the Spokane River and Lake Spokane reservoir. ~~whether or not the goals have been, could be, or can be achieved.~~ Ecology is committed to this thorough and objective examination. ~~Ecology is also committed to an additional ten years of vigorous effort under the revised MIP using all rational tools to achieve a healthy river.~~

This Managed Implementation Plan is distinguished by its multi-faceted approach and its water quality based NPDES permits instead of technology based permits. It stands on three foundations: a Spokane River Dissolved Oxygen TMDL, coordinated NPDES permits, and some form of strong, binding regional agreement.



The permits and the agreement create assurance of action. Ecology has the burden to decide whether these combinations of actions, each being more likely than not to produce desirable results, provide reasonable assurance that the TMDL short-term and long-term goals will be achieved. While improvements in DO through reduction of #P in the river is clearly necessary, while improved technology will make a tremendous difference, while re-use/infiltration recharge

will make a large and desirable contribution, while conservation and non-point source reductions will surely help, there is no absolute certainty that the goals will be met. All involved ~~face~~-risk. The greatest risk to water quality in the Spokane River is to do nothing.

~~The sections that follow are an outline for a Managed Implementation Plan. There are varying degrees of detail as we collectively reach closure on the path ahead. Ecology is ready to discuss each point. The Collaboration provides clear evidence for strong commitment to a healthy Spokane River and security that our course, while imprecise, is sound in response to the river's calls for action.~~

The County believes that the following sections are too detailed to be included at this stage of negotiations. If Ecology finds the preceding revisions to the narrative proposal acceptable, the County stands ready to discuss and prepare detailed revisions to the Managed Implementation Plan Outline below.

~~2. Point Source Tools~~

~~3. Washington~~

~~4. Technology~~

~~5. Wastewater Treatment Pilot Studies (mos. 0-6)~~

~~6. All wastewater treatment utilities will undertake and complete pilot testing and related or additional studies~~

~~7. Consideration must be given to opportunities to combine pilot testing and study efforts among similar utilities (such as among City of Spokane, Spokane County, and Liberty Lake Sewer & Water District, and among Inland Empire Paper and Kaiser)~~

~~8. Comprehensive Wastewater Management Plan (mos. 6-12)~~

~~— Each utility prepares a comprehensive wastewater plan that includes:~~

~~9. An Engineering Report/Facilities Plan describing and detailing upgrades, improvements, and modifications to wastewater treatment works~~

~~10. A detailed estimate of quality characteristics wastewater treatment facility improvements expects to achieve~~

~~11. A plan for implementing other phosphorus/nutrient reduction and control strategies over time to achieve TMDL-MIP goals and objectives~~

~~12. Using Other Toolbox Tools~~

~~13. Design (mos. 12-??)~~

~~14. Upon completion and approval items included within the Comprehensive Wastewater Management Plan, procure design services, prepare engineering design plans and related documents, and obtain all required approvals~~

~~15. Time to complete: It is generally assumed that the length time to accomplish this element will vary between individual utilities for a number of reasons. The following lengths of time are offered:~~

~~16. City of Spokane — 18 mos.~~

~~17. Spokane County — 18 mos.~~

~~18. Liberty Lake Sewer and Water Dist. — 12 mos.~~

~~19. Inland Empire Paper — 12 mos.~~

~~20. Kaiser — 12 mos.~~

~~21. Construction (times vary)~~

~~22. Upon design completion and obtaining all approvals, commence and complete construction~~

~~23. Time to complete: It is generally assumed that the length of time to accomplish this element will vary between individual utilities for a number of reasons. The following lengths of time are offered:~~

~~24. City of Spokane — 36 mos.~~

~~25. Spokane County — 36 mos.~~

~~26. Liberty Lake Sewer and Water Dist — 24 mos.~~

~~27. Inland Empire Paper — 12 mos.~~

~~28. Kaiser — 12 mos.~~

~~29. Permitting~~

~~30. General~~

~~31. Ecology will issue revised 5-year permits to existing Washington dischargers (City of Spokane, Liberty Lake Sewer & Water District, Inland Empire Paper, Kaiser) beginning Year 1 of the Memorandum of Agreement.~~

~~32. Every 5 years thereafter these NPDES permits will be reissued and will include a compliance schedule updated to reflect any appropriate adjustments necessary to implement the MIP so that water quality standards are met in the Spokane River and Long Lake.~~

~~33. In Year 6 Ecology will issue a new NPDES permit to Spokane County for the operation of a new POTW consistent with the TMDL and MIP. Until the 10µg/L goal is achieved, the sum of the City and County #P will remain unchanged with the City and County each having a #P target.~~

~~34. Ecology will investigate and determine appropriate permit conditions, such as rolling averages or other effluent limits, which are flexible enough to provide incentives to encourage the~~

- adoption of advanced technologies which will, together with other pollution control efforts, result in the attainment of water quality standards.
35. All permits will incorporate a reasonable growth in wastewater flows over time, including both new population/customers to wastewater collections systems as well as septic tank elimination projects.
 36. Interim Limits (6 mos.)
 37. By completion of pilot studies Ecology will determine interim effluent limits for each permitted wastewater treatment facility. Interim limits will be determined in the event final limits cannot be achieved by implementing wastewater treatment technology alone, and as such can be considered as simply "another tool in the toolbox" to aid in achieving final limits. Interim limits should be adhered to by year 5 of each permitted facility's compliance schedule. Individual "tools" in the "toolbox" include, but are not limited to, improved wastewater treatment technology, non-point source reduction, water reuse, water conservation, CSO elimination/reduction, I&I reduction, pretreatment, and nutrient source reduction and control.
 38. Interim permit effluent limits can be adjusted to reduce effluent pollutants to the maximum extent practicable and reasonable and as new technologies are put into place and "fine tuned". Specific timelines for adjusting these interim limits will be included as well.
 39. Final Limits (6 mos. concurrent with Interim limits)
By completion of pilot studies Ecology will determine final effluent limits for each permitted wastewater treatment facility. Final limits are effectively the concentration-based, or equivalent mass-based, maximum pollutant loading to the Spokane River, are identified in the Draft Spokane River DO TMDL and 10 ug/L for total phosphorus, and are effectively comprised of "all of the tools in the toolbox". Final limits must be adhered to by year 10 of each permitted facility's compliance schedule. Individual "tools" in the "toolbox" include, but are not limited to, improved wastewater treatment technology, non-point source reduction, water reuse, water conservation, CSO elimination/reduction, I&I reduction, pretreatment, and nutrient source reduction and control.
 - 40.
 41. The proposed new Spokane County wastewater treatment facility, as a "new source" is not eligible for receiving a compliance schedule.
 42. For the existing permitted wastewater treatment facilities of the City of Spokane, Liberty Lake Sewer & Water District, Inland Empire Paper, and Kaiser, Ecology and each utility will devise a 10-year compliance schedule to achieve MIP goals that will include, but is not limited to, dates/time frames for planning, designing, constructing, and operating the following in order to achieve identified interim and final effluent limits:
 43. Wastewater treatment technology (see above)
 44. Reclamation and Re-use (see 4.1 below)
 45. Water Conservation (see 4.2 below)
 46. Enhance Pretreatment Programs
 47. Municipal collection and/or treatment utilities
 48. Amend local pretreatment ordinances to add important target pollutants (such as phosphorus)
 49. Develop and prioritize an inventory of potential sources of important target pollutants throughout collection systems
 50. Write pretreatment permits for priority sources of important target pollutants which include strategies for reducing or eliminating such pollutants
 51. Industrial treatment wastewater utilities – Investigate opportunities for implementing pretreatment strategies, in advance of final wastewater treatment, that can reduce pollutant loading in effluent.
 52. Infiltration and Inflow – Utilities with wastewater collection systems will investigate opportunities to reduce or eliminate opportunities for groundwater infiltration and surface water inflow into wastewater collection systems.
 53. Non-point Phosphorus Reduction (see 3 below)
 54. Combine Sewer Overflow Reduction or Elimination
 55. The City of Spokane will complete all improvements included within their agreed-upon CSO elimination plan by the approved date of 2017

- ~~56. If possible, the City of Spokane will expedite improvements outlined within the agreed-upon CSO elimination plan~~
- ~~57. Stormwater~~
- ~~58. Spokane County and the Cities of Spokane, Spokane Valley and Liberty Lake will each be required to implement the provisions of the new Phase II Stormwater Permit for Eastern Washington.~~
- ~~59. Utilities will inventory and prioritize opportunities for stormwater discharge to the Spokane River, and develop implementation strategies for construction and/or management of such stormwater in order to reduce or eliminate the conveyance of pollutants via said stormwater to the Spokane River.~~
- ~~60. All Municipal Dischargers shall:~~
- ~~61. Year 1: Initiate studies and consideration of the following items for initiation of implementation by Year 2:~~
- ~~62. Enhanced street sweeping and leaf pickup from areas where storm water originates~~
- ~~63. Reduction or elimination of phosphorus from road de-icers~~
- ~~64. Installation and maintenance of bio-infiltration swales in key areas~~
- ~~65. Reconstruction of existing dry wells by priority in critical areas~~
- ~~66. The City of Spokane will make reasonable efforts to achieve completion, ahead of time if possible, of improvements to CSO system, and will consider enhancing inspection and maintenance to further reduce CSO events~~
- ~~67. Proposed Spokane County Regional Reclamation Plant~~
- ~~68. Cannot cause or contribute to exceedance of standards (10ug/L total phosphorus effluent).~~
- ~~69. Cannot exceed Spokane County's allocation of total phosphorus pounds (how the 2.93 lbs of total phosphorus identified and allocated to the existing City of Spokane wastewater treatment facility in the draft Spokane River DO TMDL report is distributed between the City of Spokane and Spokane County should be determined; Spokane County reportedly owns 10 MGD of the total 44 MGD permitted capacity at this facility).~~
- ~~70. This facility may very well be most easily permitted as a water reclamation facility. If this is the case, it will require an alternative point of discharge for emergency conditions.~~
- ~~71. Idaho~~
- ~~72. EPA Actions~~
- ~~73. Participate in the MIP adaptive management program. Adjust Idaho permits as appropriate to assure Washington Water Quality Standards are met and Idaho does not contribute to water quality violations in Washington~~
- ~~74. A permit "re-opener" clause is included within each Idaho NPDES permit.~~
- ~~75. Coeur d'Alene, Post Falls and Hayden Actions~~
~~In keeping with the Collaboration, the Idaho Permittees will investigate and consider Implementation Plan toolbox actions.~~
- ~~76. Wastewater treatment technology~~
- ~~77. Water reclamation and re-use~~
- ~~78. Water conservation measures~~
- ~~79. Infiltration and inflow reduction~~
- ~~80. Non-point phosphorus reduction~~
- ~~81. Combined sewer overflow reduction or elimination~~
- ~~82. Pretreatment programs aimed at phosphorus and other target pollutants~~
- ~~83.~~

~~84. Non-point Source Tools~~

~~85. Introduction~~

~~The Draft Spokane River Dissolved Oxygen TMDL requires reductions in the amount phosphorus coming from non-point sources. These reductions need to come from non-point sources in both the Spokane watershed and the tributary watersheds. Several tools to manage non-point sources are included in the "Toolbox" section.~~

~~86. The Draft TMDL identifies the need for reductions of 80-85% of controllable sources of phosphorus loading to the tributaries of the Spokane River. These tributaries include Latah (Hangman) Creek and the Little Spokane River, and possibly other smaller unnamed or intermittent streams. The strategy would be to complete the tributary TMDLs now in development, and identify opportunities to aggressively implement nutrient reduction practices from the top to the bottom of the sub-watersheds.~~

~~87. The assumption is that completing and implementing TMDLs for the tributaries will meet the established load allocations for the Spokane River. Financial and technical support for these ongoing efforts increases the probability of success in the shortest amount of time.~~

~~88. Additionally, other non-point source phosphorus reduction strategies could and should be looked at during a NPS evaluation study. Other phosphorus reduction opportunities may include reduction of phosphorus content in agricultural use fertilizers, reduction or elimination of phosphorus in lawn care products, and reduction or elimination of phosphorus content in dish-washing detergents.~~

~~89. Schedule: Completion of the Spokane River (Lake Spokane) Dissolved Oxygen TMDL, followed by completing TMDLs for Hangman Creek by December 2006, and the Little Spokane River by December 2007. These TMDLs will include implementation schedules which generally entail 5-20 years of aggressive actions to reduce non-point source pollution.~~

~~90. Use existing information in developing a comprehensive plan for non-point activity (see Appendix 6.4)~~

~~91. Hangman (Latah) Creek TMDL~~

~~92. Hangman Creek and its tributaries are listed as impaired for dissolved oxygen, fecal coliform bacteria, pH, temperature, turbidity, and ammonia-N. Because Hangman Creek is an important contribution to the Spokane River, the TMDL for Hangman Creek will set allocations throughout the watershed for total suspended solids, nutrients and fecal coliform bacteria. It is expected that activities that address these pollutants will also help address the other listed parameters.~~

~~93. Possible Issues to Be Addressed In Detailed Implementation Plan~~

~~94. Sediment/nutrients from agricultural operations~~

~~95. Sediment/fecal from livestock and wildlife~~

~~96. Nutrients/chemicals from residential uses~~

~~97. Sediment/nutrients from agricultural field ditches~~

~~98. Nutrients/fecal from improper functioning septic systems~~

~~99. Sediment from gravel and summer road~~

~~100. Sediment from sheer or undercut banks~~

~~101. Sediment from storm water~~

- ~~102. Forestry management~~
- ~~103. Sediment from roadside ditching~~
- ~~104. Little Spokane River TMDL~~
- ~~105. Following the adoption of the Little Spokane Total Maximum Daily Load (TMDL), which is for dissolved oxygen, fecal coliform bacteria, temperature, and pH, implementation actions will occur. The Little Spokane River is not on the 303(d) List for phosphorus; however, the advisory group recognizes that phosphorus is a concern throughout the Spokane River watershed. Although this TMDL is in the early stages of development, the research team and advisory group have focused on homeowners and agriculture as most likely largest contributors of phosphorus within the watershed.~~
- ~~106. Possible Issues to Be Addressed In Detailed Implementation Plan~~
- ~~107. Sediment/nutrients from upland agricultural practices~~
- ~~108. Run-off from hobby farms and small livestock operations~~
- ~~109. Nutrient contributions from wildlife~~
- ~~110. Nutrients from residential fertilizers~~
- ~~111. Yard waste management~~
- ~~112. Sediment/nutrients from agricultural run-off~~
- ~~113. Nutrients/fecal from improper functioning septic systems~~
- ~~114. Atmospheric deposition from gravel roads~~
- ~~115. Sediment and nutrients from stream bank erosion~~
- ~~116. Sediment and nutrients from storm water run-off~~
- ~~117. Forestry management~~
- ~~118. Sediment and nutrient from new development~~
- ~~119. Administration and Funding~~
 - ~~Establishment of a board to govern the disbursement of funds (\$1 million + annually) to evaluate and fund projects/studies to be initiated the following year (see also 5.1 Regional Entity). The merits of these project proposals will be prioritized and funded in order of priority. Agencies qualified and capable of performing the prescribed work will compete for the available funding on an annual or biennial basis, which ever is established by the board. The make-up of the board will be determined by the funding entities, in consultation with the Department of Ecology. Evaluation of the overall program's success will be made on a regular basis. Water quality monitoring will take place throughout to help quantify the effectiveness of implemented projects. This evaluation process will help focus funding for future projects.~~

~~120.—~~

~~121. Other Main Stem and Aquifer Considerations~~

~~122. Septic Tank Elimination~~

~~123. Washington~~

~~124. Idaho~~

~~125. Package Plants Instead of Temporary Septic Tanks~~

~~126. Treatment/Re-use~~

~~127. Establish Way to Recognize #s P Removed by Septic Elimination Program~~

~~128. Evaluation of Near-shore Development~~

~~129. Spokane County~~

~~130. Stevens County~~

~~131. Kootenai County~~

~~132.—~~

|

~~133. Other Phosphorus Management Tools~~

~~134. Tool/box: Re-use/Infiltration Recharge~~

~~Ecology will require all municipalities & industries participating in the Memorandum of Understanding to develop and implement aggressive water reclamation and re-use programs as elements of their wastewater facility plan. Non-Washington municipalities will be encouraged to participate. The municipalities and industries include the following:~~

Spokane County	City of Spokane	City of Spokane Valley
Liberty Lake W/S District	Airway Heights	City of Cheney
Kootenai County	City of Coeur d'Alene	City of Post Falls
Hayden Area Regional Sewer Dist.		

Inland Empire Paper	Kaiser	

~~135.A~~

~~Administration and Policy Changes~~

~~136. Development Code~~

~~Reclamation and reuse is central to the success of efforts to comply with phosphorus loading requirements of the DO TMDL for the Spokane River. The definition of re-use is somewhat vague in state regulations for development of a water system plan. Therefore it is necessary that County Development Codes be amended to define and clarify what is intended for reclamation of wastewater and appropriate reuse options and beneficial uses. Appropriate incentives and enforcement tools need to be crafted and communicated. The code changes should include information on dual piping systems; satellite wastewater reclamation and reuse facilities; criteria for their location and size; incentives and criteria for wastewater reclamation at large developments – residential or commercial; revisions of SEPA requirements to include the evaluation of reuse as option.~~

~~137. Administration~~

~~Administrative changes should include strategies for marketing reuse options and identifying potential audiences and benefits of interest to each audience~~

~~138. Education, Outreach and Marketing~~

~~Plan updates include a public involvement process. This public contact with customers is an educational opportunity to link re-use to conservation and local values (e.g. “Near Nature. Near Perfect”). Re-use is a sustainability practice that can enhance the quality of life, enhance and preserve the quality of the natural environment (come closer to “perfect”), and gain public understanding on the value and potential for substitution of reclaimed water for certain appropriate potable water uses.~~

~~—A comprehensive and continuous public information and education program is vital to the success of re-use/infiltration recharge.~~

~~139. Comprehensive Wastewater Resource (Re-use) Management Plan~~

~~Prepare a comprehensive wastewater management effort with schedules for approximate start and completion of planning that includes public involvement/public education. The resulting plan will detail the following:~~

~~140. Re-use options, parameters of concern, and needed research~~

~~141. Identification of potential users~~

~~142. Review alternatives and select treatment technology required for intended use(s), time period of use(s), volume & rate of use(s), and storage needs;~~

~~143. Sites for Water Reclamation and re-use facilities~~

~~144. Distribution for reclaimed water to re-use sites~~

145. Assess potential for infiltration-aquifer recharge, potential sites, define appropriate treatment and clarify barriers identified by Workgroup
146. Inventory local understanding and perceptions
147. Define education needs
148. Identify and plan revisions of state and local regulations and codes
149. Develop appropriate hydro-geologic data
150. Identify and clarify any research needs
151. Describe necessary monitoring and feedback systems
152. Issue Draft Preliminary Plan
153. Issue Final Plan
154. **Water Supply Plan**
155. **Water System Plans**

Update Water Supply Plans to include possible revenue enhancements resulting from reclaimed water availability by identifying potential users, water re-use distribution systems, building cooperative agreements, holding workshops on revenue, workshops on marketing reclaimed water, and establish the link between reclaimed water and conservation. — Besides assessing potential users, appropriate beneficial uses, sites and possible routes for a distribution system, the Water Supply Plans would also include possible revenue enhancement programs by identifying potential users, water re-use distribution systems, building cooperative agreements, holding workshops on revenue, and workshops on marketing
156. **Regional Water System Plan**

Develop a Regional Water System Plan (RCW 90.46.120) that includes and coordinate the Comprehensive Wastewater Management Plan with re-use elements and the Water System Plans of regional and local water purveyors.
157. The participants in the TMDL development shall utilize incentives that encourage the use of Reclaimed Water. These incentives include potable water rates vs. water reuse rates; state and federal low interest loans for infrastructure; and cost sharing with industries, other municipalities, etc.
158. Implementation of this element of the TMDL is envisioned to include a funding strategy for the development of reclamation and reuse infrastructure. — The strategy would include funding for design and construction of appropriate treatment of reclaimed water; a distribution system including dual pipe systems, storage of reclaimed water and pump stations; infiltration basins; and groundwater storage recovery.
159. TMDL with Technical Assistance and through the revision of regulations and procedures; education; and reclaimed water marketing. — It is anticipated that additional assistance from the Department of Health; Washington Water Research Center (@ WSU and UW) will also be available.
160. Assistance may also include the National Water Research Institute (NWRI) through research, workshops, Expert Advisory Panel, and funding of Research and Technical Assistance; Water Environment Federation; and American Waterworks Association.
161. It is recommended that a point person (Spokesperson) be appointed for guiding and advocating Water Reuse implementation for the Spokane River TMDL.
162. **Project Implementation**
163. Prepare Reclaimed Water Engineering Report
164. Design Reclaimed Water Facility
165. Design Distribution and/or Infiltration Recharge Component
166. Construct Facility and Distribution/Infiltration
167. Secure Reclaimed Water Permit
168. **Toolbox: Indoor Conservation**

The Collaboration has discussed using an indoor water conservation program modeled after the program used by the regional sewer utility serving Lacey, Olympia and Tumwater in Thurston County (LOTT). This is one of the first sewer utility sponsored water conservation efforts in the state. Its aim is to

~~cut per-capita indoor water use to reduce per capita wastewater treatment capacity needs. The LOTT program bases its conservation efforts on the cost of new wastewater treatment capacity. If the conservation effort can reasonably be expected to reduce water consumption without heavy reliance on behavior changes and its cost-per-gallon is below approximately 50% of the per-gallon cost of new wastewater treatment capacity, the effort is approved. Like the situation in Spokane, LOTT involves multiple jurisdictions. Some conservation efforts are pursue regionally while others can be done locally.~~

~~169. Prepare Individual Jurisdiction Conservation Plans~~

~~170. Pre- vs. Post-Code Revision Structure Inventory~~

~~National plumbing code revisions require low-flow equipment. Toilet replacement and other fixture modifications in older structures can have very positive results. A first step is to estimate the potential by doing a rough inventory of pre-code revision structures.~~

~~171. Retrofit Fixture Program~~

~~Toilet replacement was a key element of LOTT's early conservation program. Generally, homeowners found it fairly easy to present their utility bill, pick up free toilet(s), install them and bring back the old fixtures. There are contractors that supply the toilets, set up the program, and recycle the old fixtures (ceramic is ground into asphalt aggregate). Newer communities have significantly fewer eligible replacements.~~

~~172. Commercial Audit and Assistance Program~~

~~Commercial sewer customers are usually billed on the basis of flow, so there is economic incentive for conservation. Often, however, the cost of more efficient fixtures and equipment does not "pencil out" because the sewer savings are not sufficient and the water cost savings are slight because the cost of water is very low. Programs to inventory and design commercial conservation can be subsidized and part of the capital investment share so the business or industry has a reasonable pay-back on conservation investments.~~

~~173. Implementation Schedule~~

~~Scheduling of programs is critical. Across the board implementation can lead to failure because no program is well-managed and identifying actual reductions associated with each effort cannot be discerned. Continuous attention to the community value of using less water is also more effective at changing behaviors than one intense dose of information.~~

~~174. Prepare, and Implement Group Conservation Plan~~

~~Regionally scheduled and implemented public education and information efforts are generally more effective than multiple messages coming from multiple jurisdictions.~~

~~175. Fixture Maintenance Program~~

~~Toilet leak detection kits, replacement flapper valves, faucet washer replacements, flow restriction washers and low-flow shower heads are generally best handled regionally provided wastewater utilities and associated water utilities work together so there is substantial uniformity among jurisdictions.~~

~~176. Appliance Rebate Program~~

~~Electric and gas energy utilities can sometimes work jointly with wastewater and water utilities in sponsoring rebates for low-flow and low-energy use appliances such as front-loading laundry machines. Merchants are also important participants in these programs. In estimating conservation results it is necessary to allow for some machines being moved out of the area. Similar programs can be set up for businesses for laundry and dishwashing equipment.~~

~~177. Education Program~~

~~Resource conservation is widely and enthusiastically accepted both from the standpoint of preserving resources and cutting waste. Public education is most efficiently done on a regional basis using unified messages and staged over many months or years.~~

~~178. Implementation Schedule~~

~~Results measurement, measuring cost effectiveness and learning what works and what doesn't all depend on thoughtful scheduling and associated research.~~

~~179. Toolbox: Source Control~~~~180. Dishwashing Detergent P Reduction Effort~~

~~Dishwashing Detergent Ban: A significant source of phosphorus is dishwasher detergent. Automatic dishwasher detergents may contain up to 8 percent phosphorus by weight. A general ban on the use of dishwashing detergents containing phosphorus, or requiring the use of low phosphate detergents would be expected to eliminate or reduce a significant source of phosphorus to ground water.~~

~~181. Residential Fertilizer Limitations~~

~~Residential and commercial fertilizer may be a significant source of phosphorus to the river and its tributaries via non-point runoff and discharge from storm water collection systems. The most effective way to address the non-point contributions from fertilizer is banning or limiting its use within the watershed boundaries. Encouraging or requiring the use of non-phosphorus fertilizer may be an effective, low-cost practice for reducing phosphorus in runoff.~~

~~—Additionally, Local ordinances could be developed, which would require residential car washes to be conducted on lawns instead of impervious surfaces such as driveways or streets. This would allow for treatment and removal of phosphorus via uptake by vegetation rather than discharge to a drywell or other storm water collection system.~~

~~182. Commercial and residential Vehicle Washes~~

~~These operations, whether commercial or residential, are a source of phosphorus (as well as other pollutants) to ground water and the river via surface run-off and or discharges to a storm water collection system. Commercial Car washes could be required to install state-of-the-art treatment systems to assure the quality of water being discharged. The most beneficial of these technologies would be closed-loop (zero discharge) systems.~~

~~183. Septage Management~~

~~Septage Management: The City of Spokane currently receives and treats septage/sludge from smaller communities that lack the means to properly treat and dispose of it. This practice concentrates phosphorus rich septage at the City of Spokane's treatment plant, requiring treatment (including phosphorus removal) prior to discharge to the Spokane River. Funds should be made available for small municipalities to develop their own septage treatment and disposal facilities.~~

~~184.—~~

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~~185. Managed Implementation Plan (MIP)~~

~~The opportunity to combine technology upgrades with toolbox tools to reduce #P to TMDL goal levels comes with a need for inter-jurisdictional coordination. Several tools demand pooling of resources to reduce #P without particular regard for political boundaries. There is necessarily a requirement for monitoring and keeping track of who has achieved which #P reductions. A “managed” plan also allows for adjustments as science and experience clarify the most efficient ways to reduce #P.~~

~~186. Devise and Form Regional Entity~~

~~There is discussion about the value of a regional entity to help support the Managed Implementation Plan. The responsibilities and authorities of such an entity may be covered in the Agreement which the Collaboration creates to compliment the TMDL and the NPDES permits and to contract for #P reduction efforts.~~

~~187. Reasons for an Entity~~

~~188. TMDL Success Is Multi-Jurisdiction Watershed Effort~~

~~189. Several Toolbox Items Rely on Multi-Jurisdiction Actions~~

~~190. Could Serve as Home for Monitoring, Modeling and Studies~~

~~191. Action Commitments Need Central Responsibility~~

~~192. Ecology's Interest~~

~~193. Form of Entity Need Only Be Responsible/Responsive~~

~~194. Authority of Entity Is Commensurate with Responsibility~~

~~195. Term of Entity Matches Multi-Jurisdiction Action Commitments~~

~~196. Administration and Funding~~

~~197. Consider Making Entity Grant Eligible~~

~~198. Will Need to Be Attached to Public Entity with Financial Capability~~

~~199. Governance (Board?) to Fairly Represent Participants~~

~~200. Open and Accessible~~

~~201. Monitoring, Modeling and Studies (see Appendix 6.5)~~

~~202. Current Monitoring Programs~~

~~203. Core TMDL Implementation Monitoring Program~~

~~204. Washington Standard~~

~~205. Amend Current Monitoring to Meet TMDL Implementation Needs~~

~~206. Careful Data Quality Management~~

~~207. Reports “Health of the River” Every Two Years~~

~~208. Adaptive Management TMDL Implementation Plan Adjustments~~

~~209. Spokane Tribe of Indians Standard~~

~~210. Effectiveness Monitoring~~

~~211. Establishes Demonstrated Pounds P Reductions for Non-point Programs~~

~~212. Establishes Pounds P Reductions from Septic Tank Elimination~~

~~213. Special Studies~~

~~214. Sediment Oxygen Demand~~

~~215. Stormwater and CSO Phosphorus Sources~~

~~216. Reactive vs. Non-reactive Phosphorus~~

~~217. Groundwater Phosphorus Sources~~

~~218. Adaptive Management~~

~~Because the effect of actions to achieve the TMDL goal for the Spokane River are not as certain as technology-based implementation plans, it is in the interest of both the river and those paying for the actions that adjustments in~~

~~plans are possible. To have “reasonable assurance” the commitments, as adapted, are fulfilled, opportunity for substantial agency and public vigilance and accountability is worthwhile. Clear understandings about what is to be done, the measured effect of the action, and adaptation of the plan to incorporate learning and new information create an efficient program.~~

~~219. Action Commitments Annually Reviewed~~

~~220. Determine progress on Commitments and Encourage Attention~~

~~221. Unproductive Efforts Dropped~~

~~222. Promising Efforts Added~~

~~223. Minor Plan/Agreement/Permit Adaptations Approved~~

~~224. Biennial River Status Review~~

~~225. Each Participant Reports in Public Symposium~~

~~226. River Status Presented by Monitoring Team~~

~~227. Non-point Project Effectiveness Review~~

~~228. Minor Plan/Agreement/Permit Adaptations Approved~~

~~229. Ten Year Review~~

~~The Ten Year Review is an extremely important factual and objective assessment of progress toward a healthy river. Technology improvements will have made dramatic reductions in #P, conservation will be established, non-point pollution will be better controlled and re-use/infiltration recharge will be underway.~~

~~230. Individual and Collective Action Commitment Review~~

~~231. Were Commitments (as adapted) Kept?~~

~~232. What Went Right?/What Went Wrong?~~

~~233. Detailed Status of River Review~~

~~234. Summary of Collected River Data~~

~~235. Summary of Special Studies Conclusions~~

~~236. Review of How the River Responds~~

~~237. Model Run Projections on Probable Future Actions~~

~~238. Assessment of Oxygenation (see 5.5)~~

~~239. Analysis of Results vs. Goal~~

~~240. Review of Goal/DO Standards — Appropriate?/Attainable?~~

~~241. Public Assessment of MIP~~

~~242. Reconstruct Plan, Amend Permits and Agreement, Detail Next Actions that Offer Reasonable Assurance of Meeting Goal~~

~~243. Minimum In-stream Flow~~

~~A minimum in-stream flow for the Spokane River is being considered within the Avista Hydroelectric Dam Re-licensing process for both Washington and Idaho. Although lake levels and river flows are difficult issues, a minimum in-stream flow from Post Falls Dam above the current minimum (300 cfs) would likely provide some water quality benefits to the Spokane River and Lake Spokane. At present, there are many uncertainties associated with minimum in-stream flows in the Spokane River. It is anticipated that an adaptive management process will need to be developed during the dam re-licensing process to resolve these issues. Although it would be inappropriate to assume a particular minimum in-stream flow recommendation or outcome, the Water Quality Modeling Group is considering a model run (for illustrative purposes only) which would show the water quality benefits of an increased~~

~~minimum in-stream flow. When or if a minimum in-stream flow is established, it could be used to revise the TMDL.~~

~~244. Oxygenation~~

~~245. Long Lake Dam Tailrace~~

~~246. Option to be considered especially in effort to attain Spokane Tribe of Indians water quality standards (see 5.6.2.1 below)~~

~~247. Potential adjunct option in association with Lake Oxygenation~~

~~248. Lake Oxygenation~~

~~Lake Oxygenation is appears to be an appropriate option after phosphorus inputs from WWTPs and non-point sources are reduced to the extent feasible as confirmed by fulfilling action commitments, examining monitoring results and reviewing modeling.~~

~~249. This proposal recommends the preparation of a draft scope of work for a feasibility study of the oxygenation of Lake Spokane and the tail race to be completed early in the first ten-year period of the Collaboration TMDL Implementation. The feasibility study would include a value analysis early in the effort. The feasibility study should include consideration of option for long term lake management~~

~~250. The feasibility study will include public education and participation elements. Education and input could occur at public workshop(s) in two parts:~~

~~251. Technology Options~~

~~252. Administrative Lake Management Options~~

~~253. Appropriate SEPA/NEPA documentation and processes could require 2 years of effort~~

~~254. Design and construction of tailrace oxygenation may reasonably occur during the first ten year period of the Collaboration TMDL Implementation Plan.~~

~~255. Design and construction of river oxygenation should occur in light of the Collaboration TMDL Implementation Plan tenth year review and after funding and long-term management are in place.~~

~~256. Education and Outreach~~

~~257. Outdoor Conservation~~

~~Residential water conservation may seasonally reduce municipal pumping from the Spokane Rathdrum Aquifer and produce a benefit for stream flow restoration. Residents of the Spokane River Watershed use high quantities of water during summer months, primarily to irrigate lawns and gardens. Because of the intimate connection between the aquifer (the source of municipal water supply) and the Spokane River, reduction in outdoor use could result in partial restoration of stream flow in the River.~~

~~258. Polluted Runoff~~

~~In addition to best management practices, ordinances and bans, education is a valuable and essential tool for reducing and in some cases eliminating non-point source pollution. For education campaigns to be effective they must result in people changing their behaviors. Therefore it is important that proper research and planning is carried out prior to implementing an environmental education campaign. Successful education campaigns need to have dedicated professional educators designing and carrying out the education plan. A social marketing approach to an education plan identifies the target audience, identifies the barriers and benefits to doing the desired behavior, and removes these barriers so people are more likely to adopt the new behavior. Watershed pledge programs and other public education programs~~

~~targeting specific sources of phosphorus should be an integral part of this TMDL.~~

~~259. Compliance~~

~~A compliance and enforcement strategy for the MIP will be implemented to assure that adequate progress is being made toward meeting water quality goals and standards. This strategy will entail accountability measures for both point sources (i.e., NPDES permitted facilities) and non-point source control and management.~~

~~260. Point Source Compliance:~~

~~Each permitted facility will be issued an NPDES permit and compliance schedule for meeting planned deadlines and goals. Five year compliance schedules, with a maximum up to ten years (as allowed under WAC 173-201A-510) will be used for achieving interim and final effluent limits. Failure to meet agreed-upon deadlines and permit conditions or requirements will be managed by the Department of Ecology using established protocols, including the possibility of enforcement and associated penalties.~~

~~261. Non-point Source Compliance:~~

~~The implementation of site-specific best management practices to control non-point sources and to meet the load allocations of the TMDL are the responsibility of individual landowners and local jurisdictions. If it is proven or demonstrated through monitoring that a particular site or land use is causing or contributing to a significant water pollution problem or a violation of the water quality standards, the Department of Ecology will use discretion and the authority granted under RCW 90.48.080 and WAC 173-201A-510 to follow up and conduct a compliance investigation. A standardized agency protocol will be followed for all enforcement actions.——~~

~~262.—~~

~~263. Coordination~~

~~The Spokane River TMDL Collaboration interfaces with a multitude of water quality and watershed management projects and processes with similar objectives. It will be imperative to have good communication and coordination among the various efforts listed below to assure success.~~

- ~~— Avista Hydroelectric Dam Re-licensing~~
- ~~— 2514 Watershed Planning~~
- ~~— Spokane Valley/Rathdrum Prairie Groundwater Study~~
- ~~— Latah Creek TMDL~~
- ~~— Little Spokane River TMDL~~
- ~~— Spokane River PCB TMDL~~

~~264.—~~

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~~265. Appendix~~

~~Documents in Order of Attachment~~

~~266. Regional Phosphorous Agreement (1989)~~

~~267. Spokane River Draft Dissolved Oxygen TMDL Report (2004)~~

~~268. Estimated Sources of Phosphorus Loading to the Spokane River~~

~~269. Draft Spokane Conservation District Non-point Source Program~~

~~270. Monitoring and Modeling Workgroup Report~~