SUMMARY OF CITY OF SPOKANE'S POSITION ON SPOKANE RIVER TMDL COLLABORATION

(preliminary draft - 02-09-06)

Actions should be taken to improve water quality, including:

- Substantial improvements to existing wastewater treatment facilities within 5 – 6 years (including Idaho);
- The City will treat stormwater that reaches RPWRF via its sanitary sewers and will reduce combined sewer overflows;
- The proposed Spokane County facility should be permitted to treat effluent from the remaining septic tanks and to treat a portion of the County flow to the City's plant;
- The City and other dischargers should help fund non-point source controls (including reducing the amount of phosphates in dishwasher detergents and fertilizers);
- Water purveyors should promote and fund water conservation because this reduces the cost/household of treating wastewater (although it does not eliminate pollution);
- Highly treated wastewater can and should be reused in industrial and commercial settings and for irrigation of agricultural and recreational facilities;
- Avista should add oxygen to the water flowing out of Long Lake consistent with the Spokane Tribe's standards;
- Stevens County should be encouraged (politically and financially) to build centralized wastewater treatment facilities to reduce the effects of septic tanks on the River;
- The effectiveness of these actions on the river need to be monitored closely.

We agree that the TMDL must acknowledge Ecology's current standards, but we disagree that the TMDL must establish hard targets or waste load allocations based on Ecology's current standards. We need Ecology to commit to reconsider its current water quality standards in 10 years, when the above actions are all in-place and we have more data from the River. Regardless of what happens during that reconsideration process, the above measures will continue through year 20 – the question in 10 years will be what more, if anything, must be done.

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). Ecology used an extensive public participation process to develop the Draft TMDL (see Appendix 6.2) that was circulated in October, 2004.

Following preparation of a Use Attainability Analysis (UAA), 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 in development of the TMDL. The Petitioners used an extensive public participation process to develop the UAA. Prior to Ecology acting on the petition, the Petitioners and Ecology entered into an agreement to collaborate and prepare a proposed implementation plan.

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, a goal shared by the Collaboration, is to dramatically improve the amount of dissolved oxygen (DO) in the Spokane River and to protect attainable beneficial uses of the Spokane River~~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 sets up conditions resulting in ~~unacceptably~~ low DO levels that do not meet Ecology's current WQS throughout the Spokane River and man-made impoundment, Lake Spokane. Consequently, the Collaboration is concentrating on ways to reduce the amount of P in the river. The Draft TMDL 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. This focus, however, should not be construed as an acceptance of current conditions for the

other pollutants and the monitoring program articulated in this implementation plan will also measure the effect of actions taken on C/BOD, ammonia and TSS.

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 and re-directing highly treated wastewater and stormwater to beneficial uses away from the river (re-use) will assist. Also, reducing the volume of waste water through indoor water conservation efforts will reduce the cost per household of removing phosphorus from wastewater~~discharges, and aggressively managing non-point sources of phosphorus can bring further improvement to the river~~.

While there continues to be disagreement about Ecology's WQS, ~~T~~there is agreement about the need to act. 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 attain Ecology's current WQS even if all point sources in Washington and in Idaho were eliminated entirely. Prompt, productive, rational 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 10µg/L P is the background concentration of P in the Spokane River. This is t~~The initial target set in Ecology's Draft Dissolved Oxygen TMDL is 10 µug/L P. Ecology considers this to be the background concentration of P in the Spokane River. ~~It is the target to which the Implementation Plan aspires. For clarity and action accountability, t~~The Collaboration is expressing discharge goals in pounds of phosphorus (#P) rather than concentrations (µg/L). This is P concentration multiplied by water volume. ~~Ecology proposes to supplement the Draft Spokane River TMDL to make #P more obvious.~~

~~In the Draft 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.~~

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

~~DELETE THIS TABLE~~

Ecology expects point sourcesthat permittees in Washington will work to achieve equivalent reductions of their assigned #P over a twenty year period through commitments to reduce #P in point and non-point sources, to conserve water, and to divert #P from the river by reusing highly-treated wastewater and stormwaterduring the first ten years of the Implementation Plan. 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 for point sources 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 permits and 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 will need to be some reconsideration of such on the Collaboration's approach to the 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 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 in Washington.

The exact beneficial results of improved point source treatment, treated water re-use, 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 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 WQS will be reconsidered in 10 years in light of actual experience.

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 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 Petitioner 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.

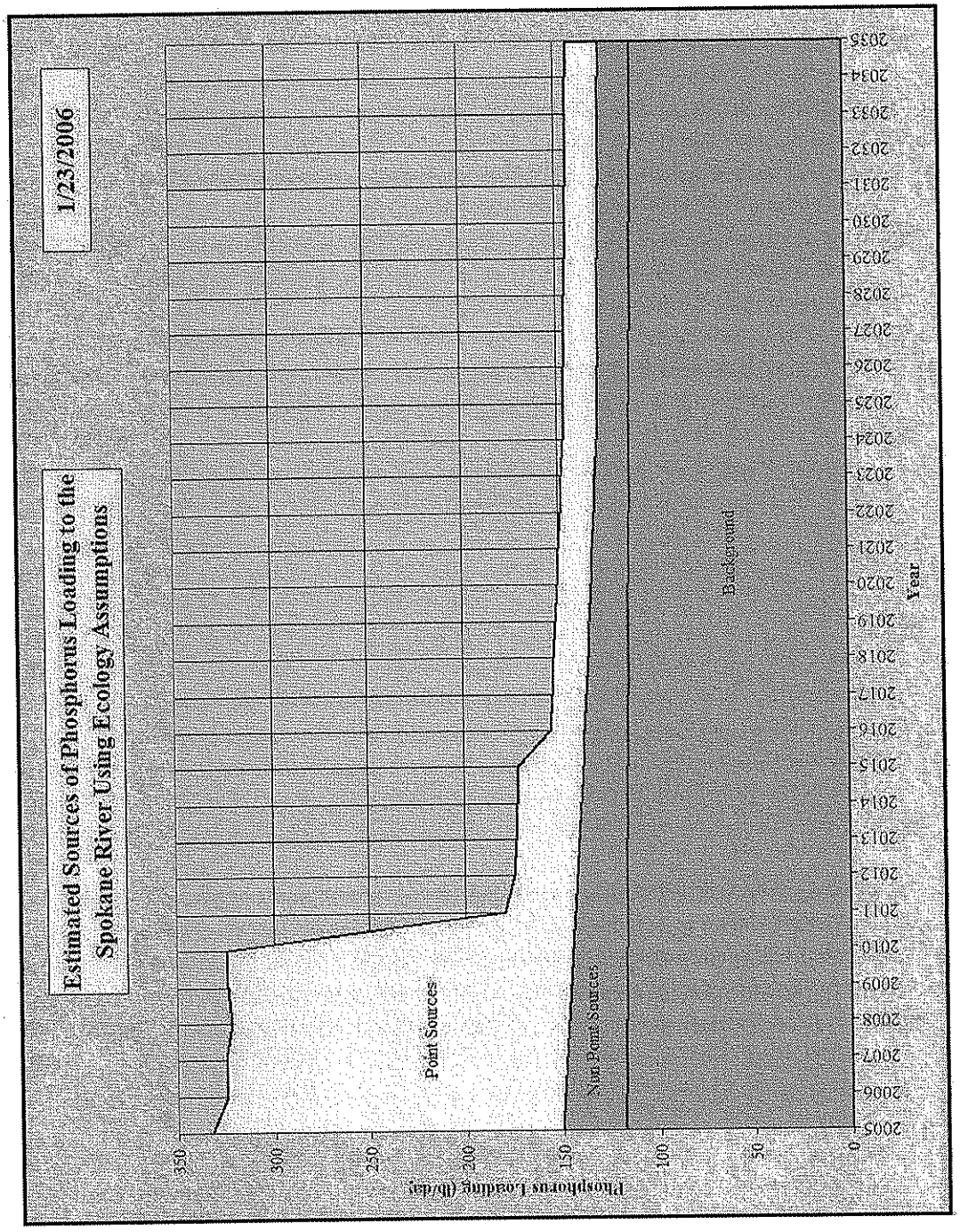
The graph titled "Estimated Sources of Phosphorus Loading to the Spokane River Using Ecology Assumptions" ~~is an approximate~~ illustrate~~sion of~~ how Ecology foresees a suite of concurrent actions resulting in fewer and fewer #P in the river over 20 years and beyond. It represents "what is likely and possible." D. Peeler, 01/25/06. The first and the largest #P reductions are from ~~because of~~ point source technology improvements (for this illustration the graph assumes all existing point sources~~most~~ discharges can achieve~~at~~ 50µg/L by years 2011 and 2012). Additional ~~Other point source~~ reductions from existing point sources result from assumptions about re-use of highly treated wastewater and stormwater that is no longer discharged to the river.

~~The interim TMDL goals for the existing point sources beginning in 2011 or 2012 would be:~~

~~City of Spokane (lbs/dy based on 50 ug/L x flow at year 20)~~
~~LLSWD "~~
~~IEP "~~
~~Kaiser "~~

~~New point sources, such as Spokane County's proposed wastewater treatment facility will .... [insert language about technology to be used for new plant, anticipated concentration of P, and interim TMDL goal based on that concentration x flow from new county plant at 2025.]~~

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. It is necessary for both dischargers and Ecology to recognize structured and non-structured commitments "toolbox," as paths to control and reduce the impacts to water quality.



See Appendix 6.3 for Spreadsheet

How the Implementation Plan Works

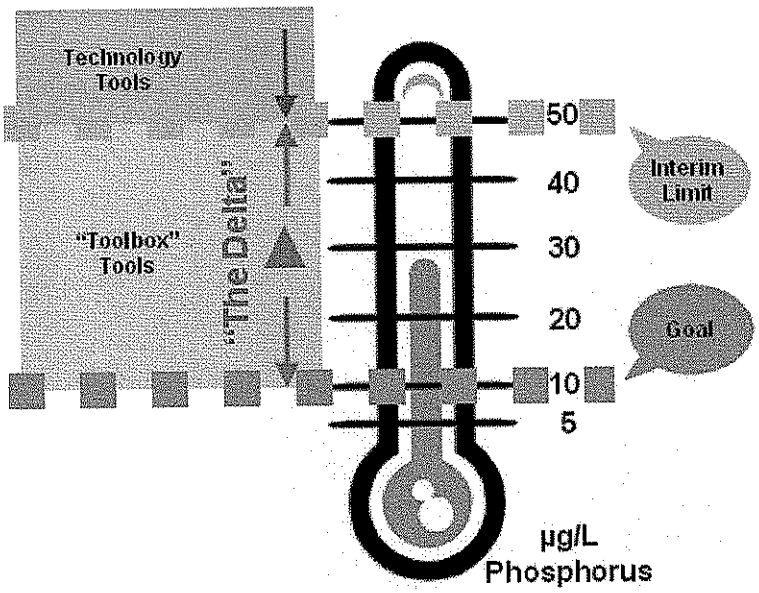
The Implementation Plan begins with the selection of improved point source (wastewater treatment plant discharge) treatment technology. The chart on the preceding page shows a dramatic drop in #P from point sources in 2011. This illustration assumes most technology improvements result in discharges of 50µg/L P concentrations at existing point sources in Washington. ~~Although not at the goal of 10µg/L, t~~This change results in significant P reductions for the Spokane River. By far, selecting, installing and aggressively operating improved treatment technologies are the largest contributors to a better river. Spokane County's plan will be a new point sources and it will [insert expectation for P concentration] and thereby reduce the total #P to the river and not case or contribute to WQS violations.

Ecology proposes each existing 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 technology and the best operation possible"* to achieve the greatest P reduction taking into account capital and operating costs, available space at existing facilities, and treatment systems already available at existing facilities. The new Spokane County wastewater treatment plant will [insert description of process for selecting and testing technology prior to and/or after initial discharge].

There is disagreement on whether it is reasonable, necessary, or even possible for current technology to reliably achieve ~~1~~50µg/L at existing point sources in Washington or to achieve 10 µg/L~~ug/L~~ at a new plant such as Spokane County's~~, the basis for the #P goal the Draft TMDL assigned each NPDES permittee. Consequently, t~~The Implementation Plan offers options if a permittee needs to reduce #P below these levels ~~selects a technology that results in more than the target #P being discharged to the river~~in light of flows projected in year 20. 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 through structured and non-structured commitments of the "toolbox." Review of the effectiveness of commitments "toolbox" occurs every 2 years, at 5, 10, 15, and 20 years of the permit cycles.

Review and evaluation will be a joint effort between dischargers and Ecology where applicable calculations, monitoring data, published reports and data will collaborate and support positions.

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



[Note in figure that 50 = ~25 lbs/dy and 10 = ~5 lbs/dy; change "interim limit" to "interim goal" and change "goal" to "long-term goal."]

Options for eliminating the Delta are collectively called "the Toolbox~~."~~," or structured and non-structured commitments. The "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 is sharing #P goal allocations. For example, suppose a permittee can, through a combination of tools, achieve P reduction beyond the assigned ~~interim~~ goal. That extra reduction may be shared among other permittees. Ecology's interest is achieving the aggregate interim and long-term goals for all permittees, and th~~at~~ose goals may be achieved through use of all the tools in the Toolbox. The primary P reduction to meet the interim goal, however, is improved treatment technology that reduces #P to the river and opens the opportunity for re-use/infiltration recharge.

Goal is to achieve Washington WQS. Interim goals may be utilized to define efforts of dischargers and may be defined a next level of treatment with individual expected numerical criteria established through actual operations.

As part of the technology selection process, each Permittee, with Ecology's involvement, will determine an initial Delta and an accompanying commitment to Delta reduction actions using the Toolbox. 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 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, 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, 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.

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 20 year pay-back time; i.e., once installed technology should be available for use for at least 20 years. ~~Presuming the technology improvements are intelligently designed to allow foreseeable "add-on" processes, p~~Permittees installing new technology under this Implementation Plan can expect no 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 Collaboration concluded that more aggressive non-point and background controls were possible and necessary in light of the technical, economic and social limitations to eliminating all point sources. ~~The non-point tool 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~~ long-term goals of ~~2~~50% for non-point~~/background~~ reduction and 15% background reduction are both ~~is~~ critical to successfully achieving the long-term TMDL goal and a healthy river, and a substantial portion of that ~~but that assumed~~ reduction can be included in~~is separate from~~ achieving the long-term

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

Delta elimination reductions. During the interim period, Ecology and the point sources in Washington are committing to take specific actions that will begin reducing both non-point sources and background sources before the end of the interim period (i.e., by 2011 and 2012) and will continue to reduce non-point sources and background sources through 2025 and beyond.

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 is ~~becomes~~ extremely important throughout the 20-year ~~by the end of the first ten year~~ period of the Implementation Plan. After the first 10 years~~At that point~~, the monitoring effort, 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, and the interim and long-term TMDL goals will be reviewed and reconsidered.

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.

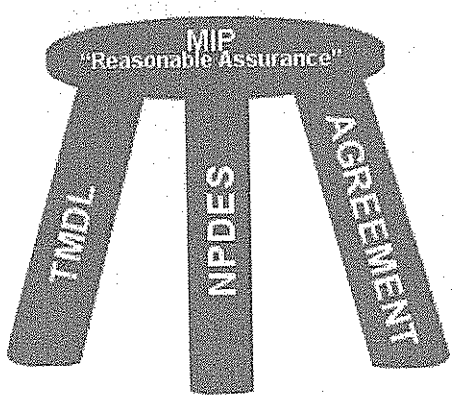
The first ten year review, however, will be ~~is~~ a very complete, data-based, objective review, based on actual. ~~This is the major opportunity to test whether "reasonable assurance" has become certain and what changes are needed. After 10 years, planning and implementation of technology and use of 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-examine~~ing~~ the Managed Implementation Plan, the interim and long-term TMDL goals, and the attainable beneficial uses of the Spokane River~~and 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 MIP's multi-faceted system would benefit from a centralized entity and recommends one be evaluated. In event one is not formed, each entity will keep track of its goals, commitments and monitoring data collaborating its efforts. All this will be shared with all the other dischargers annually and will be a requirement addressed in the individual discharge permits.

A joint review between the discharger(s) and Ecology will occur annually with collaborative evaluation of the commitments and goals made. Upon the completion of year 10, year 11 will have a total evaluation and collaboration resulting in a re-evaluation of the goals and toolbox, establishment of direction based on monitoring, achievement, technical and engineering evaluation of facilities and scientific and biological evaluation of the river and lake.



The permits and the agreement create assurance of action by the permit holders and the parties to the agreement. 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 short-term and long-term TMDL goals will eventually be achieved. While achieving 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 the interim or

long-term goals will be met or should be the final goals for the Spokane River. All involved face risk. The greatest risk 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.

It is important that overall evaluation of wholesale infiltration of water into the aquifer recharge area both in Washington and Idaho take place to assure no degradation of the sole source aquifer occurs. That there exists if needed a balanced approach to solving the DO problem in the river and lake without creating a potential larger impact on drinking water and impacts to the SURP sole source aquifer. If there are existing divergent interests then there must be an evaluation of existing surface water standards so as to allow substantial achievement of the standards without impacting/degrading existing aquifer quality.

~~Introduction and Overview~~[replace this generic outline with entity-specific commitments to point source, reuse, conservation and non-point source programs and funding]

2. Point Source Tools

2.1. Washington

2.1.1. Technology

2.1.1.1. Wastewater Treatment Pilot Studies (mos. ~~0-6~~12-18)

2.1.1.1.1. All wastewater treatment utilities ~~will undertake and complete pilot testing and related or additional studies~~must pilot through 1 year for high and low and summer/winter flows

2.1.1.1.2. 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)

2.1.1.2. Comprehensive Wastewater Management Plan (mos. ~~6-12~~12-18)

Each utility prepares a ~~comprehensive~~ wastewater plan or amendment to existing facility plan that includes:

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

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

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

2.1.1.2.4. Using Other Toolbox Tools

2.1.1.3. Design (mos. ~~12-??~~18-24)

2.1.1.3.1. 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. Need SEPA, maybe EIS!!

2.1.1.3.2. 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:

2.1.1.3.2.1. City of Spokane – ~~18 mos.~~within 24 mos. of approved facility plan

2.1.1.3.2.2. Spokane County – 18 mos.

2.1.1.3.2.3. Liberty Lake Sewer and Water Dist. – 12 mos.

2.1.1.3.2.4. Inland Empire Paper – 12 mos.

2.1.1.3.2.5. Kaiser – 12 mos.

2.1.1.4. Construction (times vary)

2.1.1.4.1. Upon design completion and obtaining all approvals, commence and complete construction. Bid process—council approvals, maybe financing

2.1.1.4.2. 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:

2.1.1.4.2.1. City of Spokane ~~– 36 mos.~~within 48 mos. from notice to proceed, unless a lawsuit against the City

2.1.1.4.2.2. Spokane County – 36 mos.

2.1.1.4.2.3. Liberty Lake Sewer and Water Dist – 24 mos.

2.1.1.4.2.4. Inland Empire Paper- 12 mos.

2.1.1.4.2.5. Kaiser – 12 mos.

2.1.2. Permitting

2.1.2.1. General

~~2.1.2.1.1.1.~~ ~~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.~~

~~2.1.2.1.1.2.~~ ~~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.~~

~~2.1.2.1.1.3.~~ ~~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.~~

~~2.1.2.1.1.4.~~ ~~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.~~

~~2.1.2.1.1.5.~~ 2.1.2.1.1.1. ~~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.~~ Collaboration between Ecology and discharger utilizing:

2.1.2.1.1.1.1. Monitoring data

2.1.2.1.1.1.2. Discharge data

2.1.2.1.1.1.3. Scientific and biological reports from other entities throughout world

2.1.2.1.1.1.4. Estimates of commitments within "toolbox"

2.1.2.1.1.1.5. Professional judgment

2.1.2.2. Interim Limits (6 mos.)

2.1.2.2.1.1. 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, stormwater collection and treatment, I&I reduction, pretreatment, and nutrient source reduction and control.

2.1.2.2.1.2. 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.

2.1.2.3. 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~~ Final limits for each facility will be created from the O & M data of each facility that has operated for at

least a year. Final limits will be specific for each facility and based on engineering data, operational data, and consider the factors of existing plant constraints, flow and whether impacted by other conditions identified in facility plans, O & M data and engineer analysis. Final limits will be within five years of the plant commencing to discharge the so-called NLT wastewater. ~~,~~ ~~m~~Maximum pollutant loading to the Spokane River~~, are~~ is identified in Ecology's ~~the~~ Draft Spokane River DO TMDL a~~nd~~ 10 µ~~g~~g/L for total phosphorus, and Ecology has committed to reconsider this goal in year 10~~are effectively comprised of "all of the tools in the toolbox"~~. Final limits must be adhered to at ~~by year 10 of~~ each permitted facility's according to a 10-year compliance schedule established in a permit. 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, stormwater collection and treatment, I&I reduction, pretreatment, and nutrient source reduction and control.

2.1.2.4.

2.1.2.4.1.1. ~~The proposed new Spokane County wastewater treatment facility, as a "new source" is not eligible for receiving a compliance schedule.~~ [Recommend that the current septic systems that discharge to the aquifer, current wastewater flows diverted from the City's plant and current stormwater discharges outside the City of Spokane be considered as "existing" the County's plant is an upgrade to the level of treatment like all other existing facilities.]

2.1.2.4.1.2. ~~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~~:~~ based on all above and may include the following:

2.1.2.4.1.2.1. Wastewater treatment technology (see above)

2.1.2.4.1.2.2. Reclamation and Re-use (see 4.1 below)

2.1.2.4.1.2.3. Water Conservation (see 4.2 below)

2.1.2.4.1.2.4. Enhance Pretreatment Programs

2.1.2.4.1.2.4.1. Municipal collection and/or treatment utilities

2.1.2.4.1.2.4.1.1. Amend local pretreatment ordinances to add important target pollutants (such as phosphorus)

2.1.2.4.1.2.4.1.2. Develop and prioritize an inventory of potential sources of important target pollutants throughout collection systems

2.1.2.4.1.2.4.1.3. Write pretreatment permits for priority sources of important target pollutants which include strategies for reducing or eliminating such pollutants

2.1.2.4.1.2.4.2. Industrial treatment wastewater utilities - Investigate opportunities for implementing pretreatment strategies, in advance of final wastewater treatment, that can reduce pollutant loading in effluent.

2.1.2.4.1.2.5. 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.

2.1.2.4.1.2.6. Non-point Phosphorus Reduction (see 3 below)

2.1.2.4.1.2.7. Combine Sewer Overflow Reduction or Elimination

2.1.2.4.1.2.7.1. The City of Spokane will complete all improvements included within their agreed-upon CSO elimination plan by the approved date of 2017

2.1.2.4.1.2.7.2. If possible, the City of Spokane will expedite improvements outlined within the agreed-upon CSO elimination plan

2.1.2.4.1.2.8. Stormwater

2.1.2.4.1.2.8.1. 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.

2.1.2.4.1.2.8.2. 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.

2.1.2.4.1.2.8.3. All Municipal Dischargers shall:

2.1.2.4.1.2.8.3.1. Year 1: Initiate studies and consideration of the following items for initiation of implementation by Year 2.

2.1.2.4.1.2.8.3.2. Enhanced street sweeping and leaf pickup from areas where storm water originates

2.1.2.4.1.2.8.3.3. Reduction or elimination of phosphorus from road de-icers

2.1.2.4.1.2.8.3.4. Installation and maintenance of bio-infiltration swales in key areas

2.1.2.4.1.2.8.3.5. Reconstruction of existing dry wells by priority in critical areas

2.1.2.4.1.2.8.3.6. 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

~~2.1.2.5. Proposed Spokane County Regional Reclamation Plant~~

~~2.1.2.5.1. Cannot cause or contribute to exceedance of standards (10ug/L total phosphorus effluent).~~

~~2.1.2.5.2. 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).~~

~~2.1.2.5.3. 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.~~

2.2. Idaho

2.2.1. EPA Actions

2.2.1.1. ~~Participate in the MIP adaptive management program. Adjust Idaho permits as appropriate to assure~~Will ensure/assure Washington Water Quality Standards are met and Idaho does not contribute to water quality violations in Washington nor create additional burden (financial, technical) nor increase commitments of Washington dischargers.

2.2.1.2. A permit "re-opener" clause is included within each Idaho NPDES permit.

2.2.2. Coeur d'Alene, Post Falls and Hayden Actions
In keeping with the Collaboration, the Idaho Permittees will Investigate and consider Implementation Plan toolbox actions.

2.2.2.1. Wastewater treatment technology
2.2.2.2. Water reclamation and re-use
2.2.2.3. Water conservation measures
2.2.2.4. Infiltration and inflow reduction
2.2.2.5. Non-point phosphorus reduction
2.2.2.6. Combined sewer overflow reduction or elimination
2.2.2.7. Pretreatment programs aimed at phosphorus and other target pollutants

3. Non-point Source Tools

3.1. 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.

3.1.1. The Draft TMDL identifies the need for reductions of 80-85% of controllable sources of phosphorus loading to the tributaries of the Spokane River but there exist potential for even more reductions in non-P and P. 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.

3.1.2. 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.

3.1.3. 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.

3.1.4. 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. NPS pollution will be to an extent that will not cause nor create WQS violations in downstream river and lake. Further technology improvements on those facilities discharging into the Little Spokane River and Hangman Creek basins will follow the previous method outlined for current dischargers. Ecology will reconsider its WQS for dissolved oxygen and TMDL targets in Year 10 and modify the TMDLs for the Spokane River, Hangman Creek and Little Spokane accordingly.

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

3.2. Hangman (Latah) Creek TMDL

3.2.1. 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.

3.2.2. Possible Issues to Be Addressed In Detailed Implementation Plan

3.2.2.1. Sediment/nutrients from agricultural operations
3.2.2.2. Sediment/fecal from livestock and wildlife
3.2.2.3. Lagoon ops at the Hangman Golf Course and Cheney and other potential seasonal dischargers
~~3.2.2.3.~~3.2.2.4. Nutrients/chemicals from residential uses
~~3.2.2.4.~~3.2.2.5. Sediment/nutrients from agricultural field ditches
~~3.2.2.5.~~3.2.2.6. Nutrients/fecal from improper functioning septic systems
~~3.2.2.6.~~3.2.2.7. Sediment from gravel and summer road
~~3.2.2.7.~~3.2.2.8. Sediment from sheer or undercut banks
~~3.2.2.8.~~3.2.2.9. Sediment from storm water
~~3.2.2.9.~~3.2.2.10. Forestry management
~~3.2.2.10.~~3.2.2.11. Sediment from roadside ditching

3.3. Little Spokane River TMDL

3.3.1. 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.

3.3.2. Possible Issues to Be Addressed In Detailed Implementation Plan

3.3.2.1. Sediment/nutrients from upland agricultural practices
3.3.2.2. Run-off from hobby farms and small livestock operations
3.3.2.3. Nutrient contributions from wildlife
3.3.2.4. Nutrients from residential fertilizers
3.3.2.5. Yard waste management
3.3.2.6. Sediment/nutrients from agricultural run-off
3.3.2.7. Nutrients/fecal from improper functioning septic systems
3.3.2.8. Atmospheric deposition from gravel roads
3.3.2.9. Sediment and nutrients from stream bank erosion
3.3.2.10. Sediment and nutrients from storm water run-off
3.3.2.11. Forestry management
3.3.2.12. Sediment and nutrient from new development

3.4. 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.

3.5. Other Main Stem and Aquifer Considerations

3.5.1. Septic Tank Elimination

- 3.5.1.1. Washington
- 3.5.1.2. Idaho
- 3.5.1.3. Package Plants Instead of Temporary Septic Tanks
- 3.5.1.4. Treatment/Re-use
- 3.5.1.5. Establish Way to Recognize #s P Removed by Septic Elimination Program

3.5.2. Evaluation of Near-shore Development

- 3.5.2.1. Spokane County
- 3.5.2.2. Stevens County
- 3.5.2.3. Kootenai County

4. Other Phosphorus Management Tools

4.1. *Toolbox:* 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	

4.1.1. Administration and Policy Changes

~~4.1.1.1.~~ 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.

4.1.1.1. Infiltration of treated wastewater will not degrade or potentially degrade the quality of the Spokane Valley Rathdrum Prairie aquifer nor impact wellheads as outlined in the region's water purveyor plans.

4.1.1.2. Administration

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

4.1.2. 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.

4.1.3. 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:

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

4.1.3.2. Identification of potential users

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

4.1.3.4. Sites for Water Reclamation and re-use facilities

4.1.3.5. Distribution for reclaimed water to re-use sites

4.1.3.6. ~~Assess potential for infiltration aquifer recharge, potential sites, define appropriate treatment and clarify barriers identified by Workgroup~~Non-degradation of sole source aquifer. Idaho and Washington dischargers.

4.1.3.6.1. Inventory local understanding and perceptions

4.1.3.6.2. Define education needs

4.1.3.6.3. Identify and plan revisions of state and local regulations and codes

4.1.3.6.4. Develop appropriate hydro geologic data

4.1.3.6.5. Identify and clarify any research needs

4.1.3.6.6. Describe necessary monitoring and feedback systems

4.1.3.7. Issue Draft Preliminary Plan

4.1.3.8. Issue Final Plan

4.1.4. Water Supply Plan

~~4.1.4.1.~~ 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~~

~~4.1.4.2.~~ ~~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.~~

~~4.1.4.2.1. 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.~~

~~4.1.4.2.2. 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.~~

~~4.1.4.2.3.4.1.4.1.1.~~ ~~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.~~ Recognizing not all dischargers purvey drinking water: Individual dischargers shall amend or create their water system plans for their proposed water reuse system if so chosen. It will be included and if needed amending the comprehensive water plan of the County.

~~4.1.4.2.4.~~4.1.4.1.2. 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.

~~4.1.4.2.5.~~4.1.4.1.3. It is recommended that a point person (Spokesperson) be appointed for guiding and advocating Water Reuse implementation for the Spokane River TMDL.

4.1.5. Project Implementation

4.1.5.1. Prepare Reclaimed Water Engineering Report

4.1.5.2. Design Reclaimed Water Facility

4.1.5.3. Design Distribution and/or Infiltration Recharge Component

4.1.5.4. Construct Facility and Distribution/Infiltration

4.1.5.5. Secure Reclaimed Water Permit

4.2. *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. It's 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. For those entities who do not purvey water, they must fund in dollars the equal amount in $/household that those entities who do for the amount of water conserved. The intent is to not penalize or credit dischargers so as one benefits over the other as credit per $ spent should remain equal to technology chosen.

4.2.1. Prepare Individual Jurisdiction Conservation Plans

4.2.1.1. 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.

4.2.1.2. 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.

4.2.1.3. 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.

4.2.1.4. 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.

4.2.2. 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.

4.2.2.1. 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.

4.2.2.2. 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.

4.2.2.3. 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.

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

4.3. *Toolbox:* Source Control This plan recognizes and supports a collaboration and creation of a single entity to help manage point, non-point technologies, commitments but also recognizes a potential that this not occur. So dischargers will be required to maintain records of all activities identified in this plan as to provide for credit toward "the Delta." Ecology will review and through collaboration with individual dischargers determine the effectiveness using monitoring data, reports both here and in other locales as well as any data determined to be useful in directly

evaluating the commitment/toolbox every 2 years, 5, 10, 15, and 20 year permits.

4.3.1. 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.

4.3.2. 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 then discharge to a drywell or other storm water collection system.

4.3.3. 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.

~~4.3.4.~~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. Septage management is a necessary evil addressing existing septic systems within the region. Although emphasis should be given to requiring smaller communities and those large ones who still have septic tanks to provide regulated and permitted themselves, it still may be a benefit to the environment and region to provide this centralized service. Again, it's to the discretion of the discharger, but there exists studies that advanced facilities provide a more sound and thorough treatment of septic waste than lagoons, land application and other less technical systems.~~Funds~~

~~should be made available for small municipalities to develop their own septage treatment and disposal facilities.~~

4.3.4.

5. 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.

5.1. Devise and Form Regional Entity

~~T~~Again, 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.

5.1.1. Reasons for an Entity

5.1.1.1. TMDL Success Is Multi-Jurisdiction Watershed Effort
5.1.1.2. Several *Toolbox* Items Rely on Multi-Jurisdiction Actions
5.1.1.3. Could Serve as Home for Monitoring, Modeling and Studies
5.1.1.4. Action Commitments Need Central Responsibility

5.1.2. Ecology's Interest

5.1.2.1. Form of Entity Need Only Be Responsible/Responsive
5.1.2.2. Authority of Entity Is Commensurate with Responsibility
5.1.2.3. Term of Entity Matches Multi-Jurisdiction Action Commitments

5.1.3. Administration and Funding

5.1.3.1. Consider Making Entity Grant Eligible
5.1.3.2. Will Need to Be Attached to Public Entity with Financial Capability
5.1.3.3. Governance (Board?) to Fairly Represent Participants
5.1.3.4. Open and Accessible

5.2. Monitoring, Modeling and Studies (see Appendix 6.5)

5.2.1. Current Monitoring Programs

5.2.2. Core TMDL Implementation Monitoring Program

5.2.2.1. Washington Standard
5.2.2.1.1. Amend Current Monitoring to Meet TMDL Implementation Needs
5.2.2.1.2. Careful Data Quality Management
5.2.2.1.3. Reports "Health of the River" Every Two Years
5.2.2.1.4. Adaptive Management TMDL Implementation Plan Adjustments
5.2.2.2. Spokane Tribe of Indians Standard

5.2.3. Effectiveness Monitoring

5.2.3.1. Establishes Demonstrated Pounds P Reductions for Non-point Programs
5.2.3.2. Establishes Pounds P Reductions from Septic Tank Elimination

5.2.4. Special Studies

5.2.4.1.1. Sediment Oxygen Demand
5.2.4.1.2. Stormwater and CSO Phosphorus Sources
5.2.4.1.3. Reactive vs. Non-reactive Phosphorus
5.2.4.1.4. Groundwater Phosphorus Sources

5.3. 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.

5.3.1. Action Commitments Annually Reviewed ? Ecology will review every two years and 5, 10, 15, and 20 years.

5.3.1.1. Determine progress on Commitments and Encourage Attention
5.3.1.2. Unproductive Efforts Dropped
5.3.1.3. Promising Efforts Added
5.3.1.4. Minor Plan/Agreement/Permit Adaptations Approved

5.3.2. Biennial River Status Review

5.3.2.1. Each Participant Reports in Public Symposium
5.3.2.2. River Status Presented by Monitoring Team
5.3.2.3. Non-point Project Effectiveness Review
5.3.2.4. Minor Plan/Agreement/Permit Adaptations Approved

5.3.3. 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.

5.3.3.1. Individual and Collective Action Commitment Review
  5.3.3.1.1. Were Commitments (as adapted) Kept?
  5.3.3.1.2. What Went Right?/What Went Wrong?
5.3.3.2. Detailed Status of River Review
  5.3.3.2.1. Summary of Collected River Data
  5.3.3.2.2. Summary of Special Studies Conclusions
  5.3.3.2.3. Review of How the River Responds
  5.3.3.2.4. Model Run Projections on Probable Future Actions
  5.3.3.2.5. Assessment of Oxygenation (see 5.5)
5.3.3.3. Analysis of Results vs. Goal
5.3.3.4. Review of Goal/DO Standards – Appropriate?/Attainable?
5.3.3.5. Public Assessment of MIP
5.3.3.6. Reconstruct Plan, Amend Permits and Agreement, Detail Next Actions that Offer Reasonable Assurance of Meeting Goal

5.4. 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.~~The entities are encouraged to create a single "entity" for the MIP but where this is not done, the discharger must provide and keep all monitoring data and technical reports, O & M data, structured and non-structured commitments with their impacts to reducing P and increasing WQ for DO. Ecology collaboration with discharger will evaluate the effectiveness of commitments and controls using monitoring data, O & M data reports both locally and others to ascertain the effectiveness of the discharger's MIP. Dischargers will find it advantageous to work, monitor and collaborate among themselves so as to obtain the maximum credit for effort. Ecology will provide incentives either in collaboration, evaluation and analysis of effectiveness of MIP where there is joint cooperation among all or any dischargers.

5.5. Oxygenation

5.5.1. Long Lake Dam Tailrace

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

5.5.1.2. Potential adjunct option in association with Lake Oxygenation

5.5.2. 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.

~~5.5.2.1. 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~~

~~5.5.2.2. The feasibility study will include public education and participation elements. Education and input could occur at public workshop(s) in two parts:~~

~~5.5.2.2.1. Technology Options~~

~~5.5.2.2.2. Administrative Lake Management Options~~

~~5.5.2.3.~~5.5.2.1. ~~Appropriate SEPA/NEPA documentation and processes could require 2 years of effort~~Oxygenation will be provided by Avista both in lake and tailrage if there is a technical support of such activity that either directly correlates a benefit or provides a potential benefit to in-lake or downstream standards and conditions.

~~5.5.2.4.~~5.5.2.2. Design and construction of tailrace oxygenation may ~~reasonably~~ occur during the first ten year period of the Collaboration TMDL Implementation Plan.

~~5.5.2.5.~~5.5.2.3. 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.

5.6. Education and Outreach

5.6.1. 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.

5.6.2. 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.

5.7. Compliance

A compliance and enforcement strategy for the MIP will be ~~implemented to~~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.

5.7.1. 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 once those limits have been established. 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.

5.7.2. Non-point Source, Reuse, Conservation Compliance:
The implementation of site-specific best management practices to control non-point sources, conserve water and reuse highly treated wastewater and stormwater ~~and to meet the load allocations of the TMDL~~ are the responsibility of individual landowners and local jurisdictions. These commitments will be articulated in an interlocal agreement (or series of agreements) among the WA State local governments in the Collaboration and Ecology. 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.

5.8. 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 Hydrolelectric Dam Re-licensing
2514 Watershed Planning
Spokane Valley/Rathdrum Prairie Groundwater Study
Latah Creek TMDL
Little Spokane River TMDL
Spokane River PCB TMDL

6. Appendix

Documents in Order of Attachment

6.1. Regional Phosphorous Agreement (1989)

6.2. Spokane River Draft Dissolved Oxygen TMDL Report (2004)

6.3. Estimated Sources of Phosphorus Loading to the Spokane River

6.4. Draft Spokane Conservation District Non-point Source Program

6.5. Monitoring and Modeling Workgroup Report