Foundational Concepts for Spokane TMDL Implementation Plan

The Spokane River does not have enough dissolved oxygen (DO) during the months of April-October. Current science shows that excess phosphorus is the main cause of this problem. There is agreement that action is needed as soon as possible to improve the River's condition and protect the quality of the Spokane-Rathdrum Aquifer. Reducing significant amounts of phosphorus in the River during the months of April-October and achieving Water Quality Standards constitute the goal of the Spokane River TMDL Managed Implementation Plan (MIP).

In the draft TMDL, Ecology estimated a reduction target of approximately 215 pounds/day of phosphorus from point sources, non-point sources and controllable background sources. Most of this reduction is anticipated to come from improvements in treatment technology at the wastewater treatment plants. There is uncertainty regarding the River's response to phosphorus reductions and the amount of phosphorus reductions possible over the next 10-20 years. Hence, a managed approach, that removes phosphorus from a variety of sources and through a variety of methods over the next 10-20 years, a reasonable way to improve, monitor and assess DO changes and to maximize the effectiveness of the sizable investments to be made to improve the River.

The following actions will be taken over the next 10 years which, in aggregate, provide Ecology reasonable assurance that sufficient phosphorus will be removed to achieve attainment with the Water Quality Standards for DO. The petitioners and Ecology mutually agree these actions will be incorporated into one or more NPDES permits or will be independently enforceable under an agreement with Ecology. Each discharger will prepare a schedule of these actions that will aggressively and demonstrably pursue significant phosphorus reductions in the River and Lake Spokane during the first 10 years of the MIP and these actions will be incorporated into the NPDES permit or agreement as appropriate.

After the 10th year of implementation a thorough review will be conducted to determine what, if any, additional phosphorus reduction actions are necessary, or whether any changes to the phosphorus reduction goal in the TMDL or the Water Quality Standards for DO in Long Lake are warranted.

The actions are as follows:

- Current treatment plant owners will select and install the most effective technology for removing phosphorus from their effluent, and will operate it aggressively to optimize phosphorus reduction. These

improvements will be completed in the first six years of the MIP. NPDES permits for each discharger will include interim limits based on approved Engineering Reports. Final limits will be set based on the actual performance of the technology installed and operated at optimum reliable efficiency. Each discharger will submit its technology selection process and resulting engineering report to Ecology for review and approval.

- This investment in phosphorus removal technology is recognized by Ecology as having a 20-year life and no significant modifications or replacements will be required during the 20 years of the MIP unless the treatment plant owner and Ecology determine that improvements that enhance treatment performance/efficiency are cost-effective for achieving further phosphorus reductions if necessary.
- Each publicly owned treatment plant will produce Class A reclaimed water. All reasonable efforts to re-use and/or recharge the aquifer with this water, rather than direct discharge to the River, particularly in the April-October timeframe, will be made by each plant owner consistent with their circumstances and opportunities to do so. Ecology will work with each plant owner to prepare approvable permits that enable timely and successful implementation of these opportunities.
- Publicly owned treatment plants, in cooperation with water purveyors, will develop individual and regional programs that reduce flows by funding LOTT-style indoor conservation efforts that target **20**% water conservation in older urban areas and 10% water conservation per household in newer (post 1992) urban areas by year 10 of the MIP. These programs will have local ordinances, avoided cost investment principles and per connection expenditures similar to the LOTT program.
- Source control actions to limit phosphorus inputs through regulation of phosphorus-containing products and through enforced phosphorus-limiting pre-treatment ordinances will be implemented. Efforts to control and reduce phosphorus in storm water discharges to the River will also be implemented.
- The revised TMDL will include non-binding phosphorus reduction targets for individual dischargers. Because it authorizes a new discharge, the NPDES permit for the new County treatment plant will include a phosphorus reduction target that can be achieved through a combination of improved treatment and available offsets.
- A new Spokane County treatment plant will be constructed to meet phosphorus targets for the County through a combination of improved treatment and other offsets. The plant will be permitted by Ecology in order to enable rapid conversion of septic systems to sewers consistent with the approved septic tank elimination program. The County plant will treat any diversion of flows currently going through the City of Spokane's treatment plant to a higher level of phosphorus

reduction than would otherwise be achieved by the upgraded City plant. The County will also develop a comprehensive program for Class A reclaimed water production, re-use and infiltration. The County will construct the plant within the first 6 years of the MIP and will re-use or re-charge the aquifer with at least xx gallons of the plant's output at the time of initial operation, and at least **yy**% of the plant's output will be re-used and/or re-charge the aquifer by year 10 of the MIP. Plans will be developed by year 10 that describe how at least **zz**% of the plant's output will be re-used and/or re-charge the aquifer by year 20 of the MIP. These targets apply particularly to the plant's output in the months of April-October, but year-round re-use is encouraged as well.

- Publicly owned treatment plant operators will jointly fund and implement a regional program of non-point source phosphorus reduction. The program will be funded at $2 million/year and begin in the second year of MIP after completion of a study (funded in part by Ecology) to determine the best opportunities for non-point phosphorus reductions. The program will be closely monitored to routinely identify cost-effective strategies and verify actual phosphorus reductions. The program is intended to continue through the 20 years of the MIP, though the resources could be shifted to other more effective actions for phosphorus reduction in the latter 10 years of the MIP by mutual agreement with Ecology.
- The River will be routinely monitored to evaluate the impact of phosphorus reductions and associated improvements in dissolved oxygen levels. Also, there will be additional studies such as those concerning sediment oxygen demand, the efficacy of river aeration, and bio-availability of phosphorus in discharges and other areas that advance the understanding and refine the science concerning the River's health. Modeling capabilities for the River will also be enhanced. Ecology will assist the dischargers establish and operate this monitoring and research program and help pay the cost.
- There will be annual performance reviews of the actions described above and biennial public reports and public involvement efforts regarding the River's health and the performance and effects of the actions described in the MIP.
- Following the 10th year of MIP there will be a major assessment of the plan's impact and data-driven collaborative determinations made about the second 10 years of MIP. Those decisions will be made consistent with the MIP 10th Year Decision Diagram on the next page.

MIP Tenth Year Decision Diagram