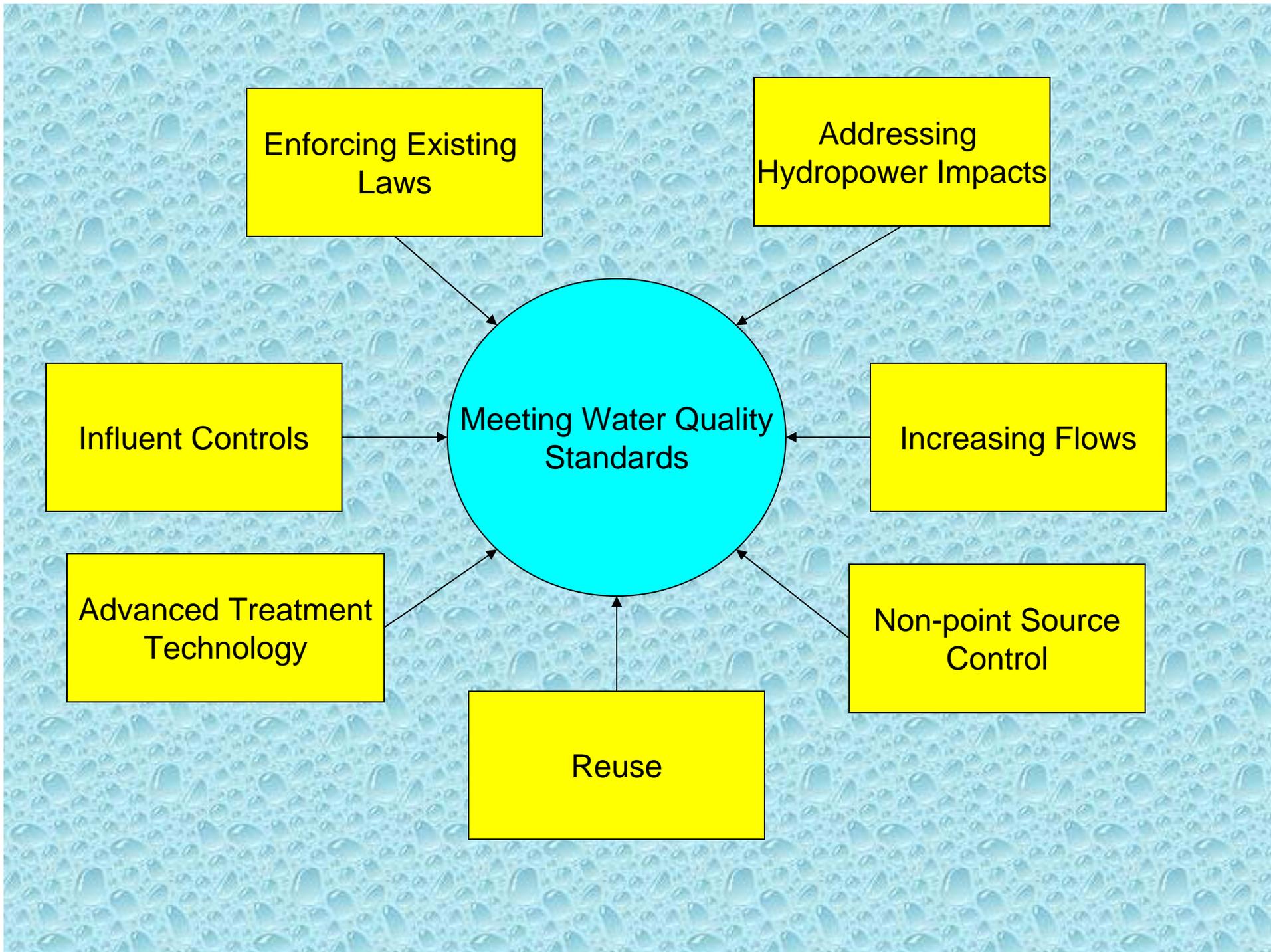


# **Spokane River Restoration Scenario for the Dissolved Oxygen TMDL Collaborative**

Prepared by the Upper Columbia  
Group of the Sierra Club



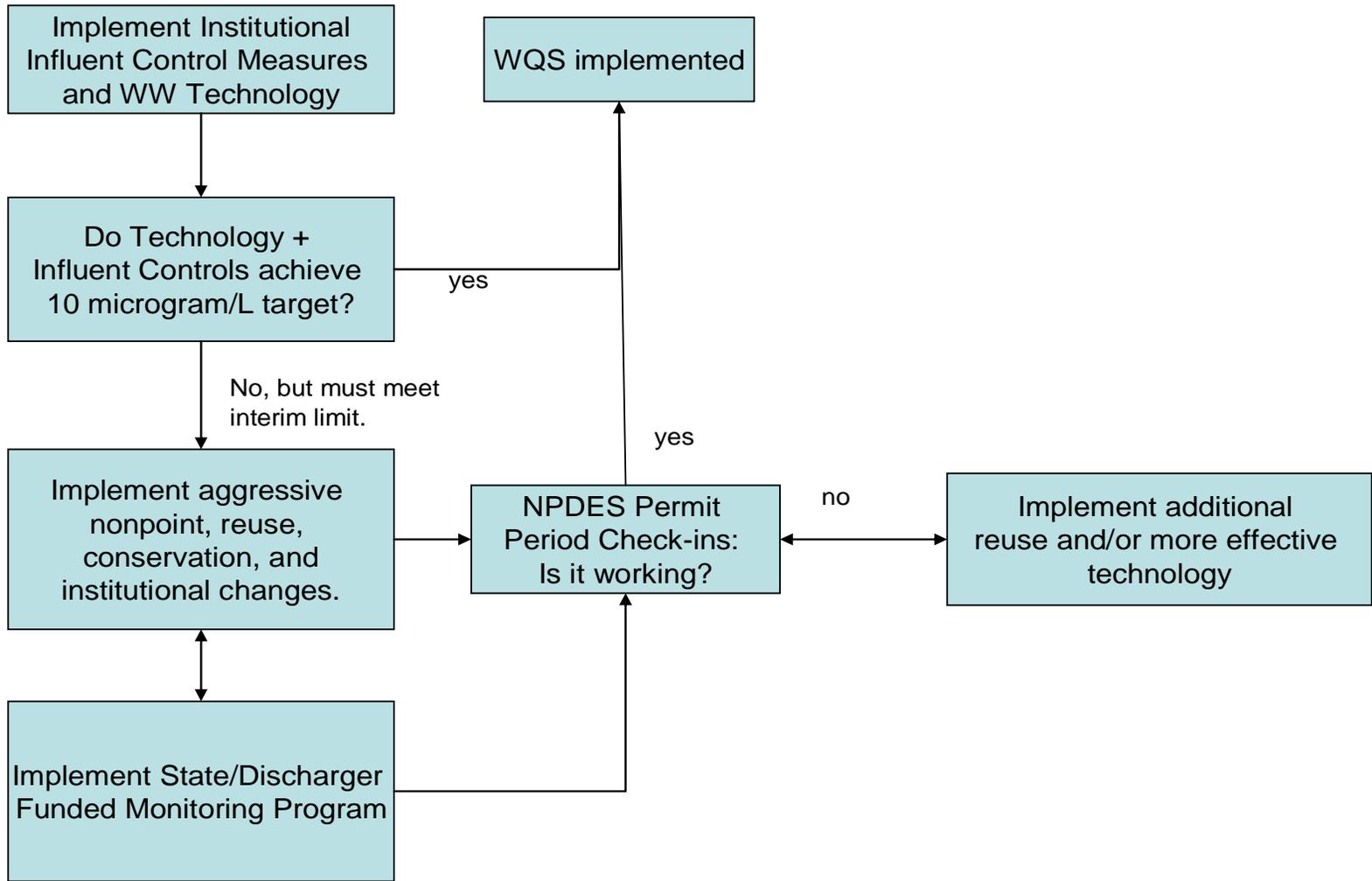


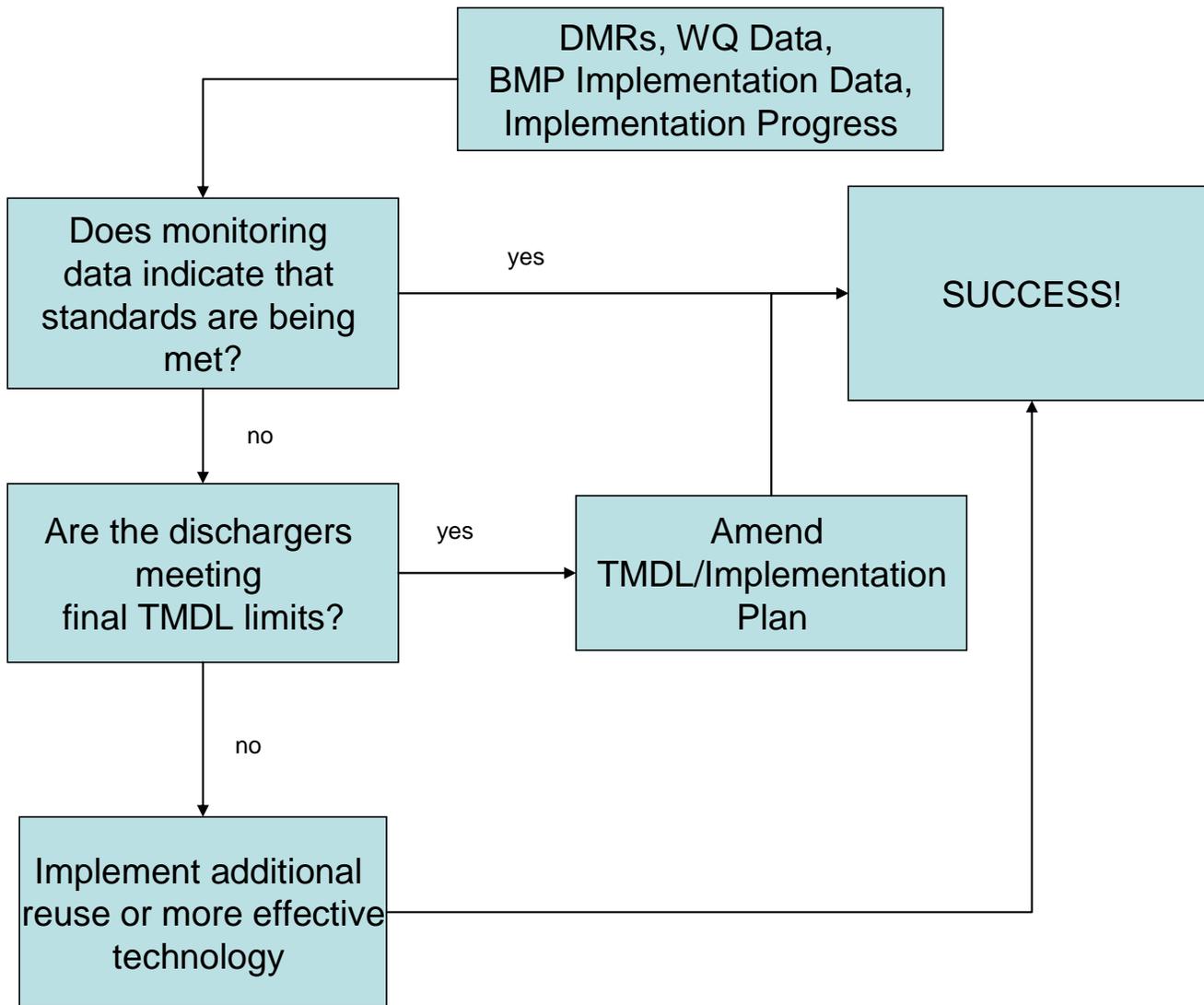
# Legal/Factual Realities

1. Collaborative Process Did Not Address Other Pollutants of Concern.
  - TMDL addresses phosphorus, carbonaceous biochemical oxygen demand, and ammonia.
2. Final Solution must meet Spokane Tribe's Water Quality Standards.
3. Impending PCB TMDL Will Likely Impact Decisions Regarding Dissolved Oxygen Technology.
4. County Plant Will Be a "New Source."
  - 40 CFR § 122.4(i) provides, "No permit may be issued: ... [t]o a new source or a new discharger, if the discharge from its construction or operation will cause or contribute to the violation of water quality standards."
  - Washington law, WAC 173-201A-510(4), does not authorize a compliance schedule for new sources.

# Legal/Factual Realities

5. Offsets from Non-point Source Reduction can only Occur after there is a Proven Reduction.
  - WAC 173-201A-450(1) provides, “A water quality offset occurs where a project proponent implements or finances the implementation of controls for point or non-point sources to reduce the levels of pollution for the purpose of creating sufficient assimilative capacity to allow new or expanded discharges.”
  - “The improvements in water quality associated with creating water quality offsets for any proposed new or expanded actions must be demonstrated to have occurred in advance of the proposed action.”
6. Given the Uncertainties involved in this TMDL, a Phased Approach is Appropriate.
7. The Spokane River has Multiple Jurisdictions with Multiple Responsibilities.





# Monitoring

1. Dissolved oxygen/phosphorus/ammonia/CBOD monitoring of the Spokane River.
  - An ambient water monitoring program must include collection and analysis of physical, chemical, and biological data. The data will be used to assess compliance with NPDES permits and the efficacy of non-point source cleanup strategies.
2. Monitor other physical/chemical parameters known to affect dissolved oxygen:
  - This could include sediment from the tributaries, as well as temperature.
3. Track Spokane River flows.
4. Discharge monitoring reports prepared by NPDES permit holders.
5. Implementation progress monitoring.
  - Ecology will develop and circulate a report that indicates levels of progress for each party that is charged with responsibilities for implementation.

# Memorandum of Agreement

- MOA must provide “reasonable assurance” of compliance with TMDL and WQS.
- Must include statement of actions of each parties and timeframe.
- The MOA should provide vehicles exist for addressing disputes and ensuring compliance.
  - Annual meetings to identify and address concerns, as well as measure success; the NPDES permits must explicitly bind the parties to the MOA; the MOA must not preclude any available remedies for public review and enforcement; disputes regarding the specific terms of the TMDL or DIP should be addressed in a manner consistent with Ecology’s TMDL Dispute Resolution Policy.
- The MOA should contain a long-term commitment of the parties to funding the strategies.
- The MOA should provide for public reporting.

*The specific approaches and strategies detailed below do not represent all the possible options for addressing this problem, nor is it intended that the parties implement every action detailed below. Rather, it is intended that through the finalization of the TMDL, MOA, and DIP, the proper suite of actions is selected to ensure that the TMDL goals and compliance with state and tribal water quality standards are met.*

# Influent Control and Reduction

1. Municipal dischargers will conduct water audits and adopt water conservation measures to reduce water use by their customers.
2. Municipal dischargers will implement programs to reduce industrial sources of phosphorus and implement additional pre-treatment requirements.
3. Municipal dischargers will adopt ordinances to ban the sale and/or use of dishwashing detergent that contains phosphorus (both commercial and domestic use) and restrict the use of household fertilizers containing phosphorus.
4. Municipal dischargers will adopt measures to investigate and control I/I losses in municipal sewer systems.
5. Municipal dischargers will develop education/incentive programs focusing on phosphorus reduction.

# Treatment Technology

- There are three main technology-based strategies for reducing phosphorus loading from wastewater treatment plants:
  1. Reducing phosphorus in the effluent through end-of-pipe advanced wastewater treatment technologies;
  2. Maximizing facility operations for pollutant removal, and
  3. Developing NPDES permits that provide the maximum incentives and opportunities for pollutant reduction.

# Treatment Technology

- The § 303(d) listing by definition signifies that existing wastewater technologies are not adequate to protect water quality. Hence, the Spokane River wastewater dischargers must upgrade their systems to achieve greater phosphorus reductions.
- The draft TMDL determined that the target instream concentration of phosphorus is around 10 µg/L during the critical period. If, through upgrades, a discharger meets this seasonal limit, no further actions would be required.
- However, dischargers who cannot meet this seasonal limit will need to implement other strategies that, in combination with end-of-pipe reductions, bring the plant into compliance with the TMDL. Clearly, then there is great incentive to optimize end-of-pipe reductions.

# AKART

- Washington law requires municipal and commercial dischargers to use all known, available, and reasonable methods of treatment (also known as AKART), to control pollutants in the discharger's wastewater.
- AKART primarily involves an engineering, environmental and economic analysis as to what treatment methods are “available” and “reasonable” with respect to a particular facility. In some circumstances, AKART may be zero discharge.
- What is AKART for purposes of end-of-pipe phosphorus reduction for the Spokane River municipal and industrial wastewater treatment plants?
  - While the answer is not yet clear, there is information indicating reductions from 10 µg/l to 50 µg/l are possible.

# Technology Assessment

- Each discharger must conduct its own investigation, including on-site visits and pilot testing, to assess the ability of various treatment technologies to reduce effluent phosphorus, BOD, and ammonia concentrations to target levels.
- Dischargers should also investigate alternatives to conventional wastewater treatment systems such as natural restorative systems.
- Ecology will, based on the investigations and input received through public comment, determine AKART for each discharger.

# Operational Maximization

- Maximizing operational efficiency in the existing biological phosphorus removal process and adding additional treatment processes may result in significant reduction in phosphorus under current and future operations.

## **Action:**

- Each discharger will analyze and adopt methods to optimize current and future operations to maximize reductions of CBOD, ammonia, and phosphorus.

# Permitting

- By law, NPDES permits for discharges into critically impaired waters must include the requirements necessary to implement the TMDL and prevent water quality violations.
  - The law allows for compliance schedules in the permits for existing dischargers. These are developed on a case-by-case basis. The interim limits may be numeric or nonnumeric and require such steps as treatment plant upgrades, operational changes or pollution prevention strategies.
- Another issue affecting technology choice is risk allocation. Generally, the consultant bears the process risk should the technology fail to meet permit limits.
  - Given the inherent uncertainty surrounding phosphorus reducing technologies, such an outcome would clearly be counterproductive here, where the level of phosphorus reduction attainable through technology is uncertain.

# Permitting

## **Actions:**

- Ecology will investigate permit conditions, such as rolling averages or other appropriate effluent limitations, which are flexible enough to provide incentives to encourage the adoption of advanced technologies.
- Ecology will incorporate the applicable conditions of the TMDL MOA into the NPDES permits. Notwithstanding these conditions and the phased approach of this scenario, the discharge limits shall not exceed 50 µg/L utilizing appropriate averages as set forth in the individual NPDES permits.

# New Spokane County/Regional Facility

- Spokane currently supplies wastewater treatment for up to 10 mgd of sewage generated outside the city, in the County. To retire septic systems within the County and to serve future growth, the County proposes to build a new regional wastewater treatment plant.
  - As a new discharger, the County cannot receive an NPDES permit unless it is in compliance with the final TMDL effluent concentration requirements upon commencement of discharge.
- Seasonal discharge into the river by a new regional facility is not foreclosed, however. Two conventional options are available:
  - Ecology may allocate in the final TMDL a specific load to the County, presumably by reducing the load of the City. Then, if the facility is capable of achieving the TMDL's final effluent concentration, it may discharge during the critical season.
  - If not, it could adopt seasonal reuse.
- Before building a new facility, the County should explore integrated wastewater design, such as decentralized systems, to assess the needs outside the sewer service area and how these can best be served.

# Non-point Measures

## Coordination with Tributary TMDLs

1. Ecology and the dischargers will, as contemplated in the draft TMDL, utilize the tributary TMDLs to resolve key technical non-point source questions and participate in the development of the implementation strategies to reduce phosphorus and other pollutants contributing to the Spokane River dissolved oxygen problem.
  - Ecology will dedicate resources to expeditiously complete these TMDLs.
2. Ecology and the dischargers will develop and implement a Non-point Source Reduction Strategy to prioritize those stream segments where remedial efforts would be most effective, and then identify the specifically applicable best management practices and other actions that are likely to be the most effective in reducing the identified non-point pollution loading.

# Non-point Measures

## **City & County Storm Water Drainage Systems**

1. Ecology will finalize the stormwater NPDES permit and municipal dischargers will implement the requirements of the permit.
2. Spokane will implement, in coordination with Ecology, additional inspection and maintenance measures to eliminate dry weather CSO events.
3. Municipal dischargers will include measures such as enhanced street sweeping and leaf pickup from areas where storm runoff originates.
4. Municipal dischargers will assess and implement a program to reduce or eliminate phosphorus in road deicers.
5. Municipal dischargers will develop a program to require the installation and maintenance bio-infiltration swales and/or catch basins in key areas.
6. Each municipal discharger will assess and implement other restorative stormwater management strategies.

# Non-point Measures

## **Reducing Unregulated Septic Contributions to Phosphorus Loading**

1. Spokane County will aggressively proceed with the mandatory sewer hookups necessary to eliminate the remaining 14,000-plus septic systems that are a potential threat to the aquifer.
2. Until alternative treatment options are in place, Spokane County will assess and implement programs requiring state of the art phosphorus removal technologies for on site systems for multi-unit commercial/residential developments.

# Non-point Measures

## Coordination with Non-point Reduction Funding Programs

1. Ecology, the dischargers, and conservation districts, will work to identify and obtain available federal funding to address non-point sources in the Hangman Creek and the Little Spokane River watersheds.
  - Ecology and the dischargers will work with conservation districts and farm organizations to ensure that growers in the tributary watersheds have completed the necessary steps for eligibility for future federal funding..
2. Ecology, the dischargers and other local governments and conservation districts will work together to pursue State section 319 to fund non-point source mitigation measures..
3. The dischargers will work with conservation districts and farm organizations to identify and obtain other non-point source funding, such as the Spokane County Buffer Initiative Program and the State Department of Natural Resource's Forestry Riparian Easement Program.

# Non-point Measures

## Direct Funding & Monitoring

1. Each discharger will commit the funds and resources necessary to implement the Non-point Source Reduction Strategy.
  - These funds shall be utilized solely for on-the-ground projects directed toward reduction of sediment and phosphorus loading to the Hangman Creek and Little Spokane River consistent with the Strategy.
2. Ecology and the dischargers must develop a long-term non-point source monitoring program. The monitoring regime must be capable of detecting changes in water quality that would be attributable to non-point source remediation activities in the tributary watersheds.

# Reuse Measures

1. Each discharger will, within two years of completion of the TMDL, conduct a specific and detailed feasibility study of the potential for reclamation and reuse of its wastewater effluent.
2. The City of Spokane will specifically review opportunities for reuse available within a short radius of the Riverside wastewater treatment facility including parks, playfields, federal facilities, cemeteries, golf courses, institutional properties and the potential for delivering reclaimed water to the West Plains area via existing infrastructure.
3. As an element of developing a wastewater facilities plan conforming to TMDL requirements, Spokane County will re-evaluate siting of the proposed regional wastewater facility plan in tandem with reuse feasibility considerations.
4. Once reuse feasibility studies are complete, each discharger will move forward with programs to maximize construction of reclaimed water facilities and put reused water to use.

# Increases in Instream Flow

1. Ecology will establish the Spokane River Stream flow Restoration Program to accept funds for purchase, lease and administration of trust water rights transactions to benefit the Spokane River.
2. Each discharger will register official support for the Washington state-recommended minimum flow discharge from Post Falls Dam, as established through the WRIA 57 watershed planning process.
3. Each discharger that also provides potable water to its customers will establish water conservation goals sufficient to ensure that growth in water demand projected for the next 20 years will require no additional pumping from the Spokane Aquifer and will instead be supplied under existing pumping quantities.
4. Each discharger that is not a public water supplier will assess its water use and establish reasonable and effective water conservation goals for its operations.
5. Each discharger that accepts sewage from municipalities that are served by other public water suppliers will establish guidelines for water conservation goal setting and implementation, and require compliance with such guidelines as a condition for provision of sewage treatment services.

# Enforcement of Existing Laws

1. Ecology and each municipal discharger will review existing pollution control authorities, including Shorelines Management Plans, Critical Area Ordinances, comprehensive plans, and other land use regulations, and dedicate needed resources to aggressively enforce such measures to address new and current sources of water quality degradation.
2. The County will include additional measures in their current Shorelines Management Plan amendments to address activities that lead to phosphorus inputs into the river, including conservation tillage, streamside fencing, and riparian buffer/revegetation requirements.

# Hydropower Measures

1. Avista and Ecology will ensure coordination of the § 401 certification and FERC process with the TMDL process.
2. Avista, Ecology, and the dischargers, with participation of the Spokane Tribe, will assess short-term measures to ensure that discharges from Long Lake meet the Spokane Tribe's water quality standards.
3. Avista will study and assess impacts of the continued "filling-in" of Long Lake Reservoir.
4. Avista, Ecology, and the dischargers will study options to address in-reservoir dissolved oxygen levels. Such measures should be utilized if monitoring data indicates that other approaches are not effective in meeting water quality standards.
5. Avista will support the adoption of the recommended minimum instream flow.