

*Comment: I worry that the document is too large for people to really focus in on. What do you think about a more succinct way of presenting the information? Maybe breaking each BMP into its own Fact Sheet and adding a table of contents to easily find the information? Or perhaps a spreadsheet format could work, one for each appendix, with columns for partner organizations and funding sources that could have check boxes.*

*Response: This would be a good topic for work group discussion.*

*Comment: I am thinking that Appendix B thru E can be combined, as Implementation and BMPs are essentially the same. I think a chart format for this would provide better clarity and be easier to read (see attached example).*

*Response: This would be a good topic for work group discussion.*

# SRRTTF

## Funding Strategies

---

### **SRRTTF Vision Statement for the first five years:**

*The Regional Toxics Task Force works collaboratively to (1) characterize the sources of toxics in the Spokane River and identify; and (2) implement appropriate actions needed to make measurable progress towards meeting applicable water quality standards for the State of Washington, State of Idaho, the Spokane Tribe of Indians the public, and environmental health.*

### **SRRTTF Funding Strategies Purpose Statement**

**To:** Coordinate and support the Spokane River Regional Toxics Task Force (SRRTTF) in providing consistent and predictable funding needed to accomplish the actions that will result in toxics reductions for the Spokane River.

**In a way that:**

- Is strategic, holistic, and forward thinking and compliments the vision and purpose of the SRRTTF.
- Serves as a clearing house that identifies, tracks, evaluates, prioritizes, and communicates funding opportunities in a timely manner.
- Responds to the technical and administrative needs of the SRRTTF.
- Leverages the value of monetary and in-kind contributions provided by SRRTTF members.
- Partners with outside organizations on opportunities that are of mutual benefit.

## Strategic Direction

### 1) Identify Needs

The SRRTTF Vision Statement will serve as a fundamental guideline for identifying Task Force needs.

### 2) Identify Potential Funding Sources

The SRRTTF will identify, evaluate, and pursue funding sources based on the ability of those sources to meet the Task Force needs.

- Task Force members direct funding of activities
- Task Force members in-kind funding<sup>1</sup>
- Agency direct funding of Task Force activities
- Agency in-kind funding
- Agency projects in support of effort
- Grants to nonprofit organizations in support of effort
  - Government (State, Federal)
  - Foundations
- Grants to Universities/Academia in support of effort
  - EPA Science to Achieve Results
  - P3 Award Program
- Professional organizations
  - ACS Green Chemistry Institute Grants
  - Water Environment Research Foundation Grants
  - [Water Environment Federation \(WEF\)](#)
  - National Association of Clean Water Agencies
- Partnerships with research centers
  - Center for Sustainable Materials (University of Oregon)
  - Center for Environmental Research and Outreach (CEREO)
  - Water Environment Research Foundation
- Partnerships with current and/or former toxics producers/suppliers
- Donations/Gifts

### 3) Reach Out to Potential Funding Organizations and Partners

Use the diverse strengths and professional networks of the individual partners of the organization to identify, communicate with, and engage potential funding organizations and partners.

### 4) Align SRRTTF Needs with the Funding Source Purpose and Mission

When communicating with the potential funding source, the SRRTTF will identify how the needs of the Task Force align with the purpose and mission of the funding organization.

---

<sup>1</sup> **Federal Definition for grant applications:** Third party in-kind contributions may be in the form of real property, equipment, supplies and other expendable property, and the value of goods and services directly benefiting and specifically identifiable to the project or program.

### **5) Prioritize Funding Requests and Maximize Return on Effort**

The SRRTTF will evaluate funding opportunities, identify strategy, and prioritize response based on

- Funding opportunity fulfills short term vs. long term need
- Ability of Task Force to access funding (level of effort needed)
- Match of the funder's mission with the Task Force mission
- Amount of funding available
- Competitiveness of funding opportunity

### **SRRTTF Funding Strategy Work Group Structure**

A Funding Work Group will be organized to execute the duties required by the SRRTTF Funding Strategy. The Funding Work Group will include a variety of key SRRTTF members or supporting staff with knowledge of funding strategies, grant opportunities, grant writing and other facets essential to execute the SRRTTF funding strategy. Examples of responsibilities, tasks and roles include:

- Actively engage in tracking and evaluating funding opportunities on behalf of the SRRTTF
- Assign specific tasks to help position the SRRTTF for funding and collaboration opportunities (e.g., networking with University researchers, communication with legislators)
- Write and submit grant applications
- Develop public education approaches that can be incorporated into funding applications or implemented through in-kind efforts and/or collaboration with others

*Comment: Provide introduction to all appendices outlining the intent.*

*Response: Introduction added below. One sentence explanatory text added to all appendices:*

**Appendix A: Toxics Source Characterization**

*Where are the toxics (PCBs and dioxins) coming from, how do they move through the environment, and how do they enter the river?*

**Appendix B: Identification of Best Management Practices**

*What actions are needed to reduce the inputs of PCB and dioxins to the Spokane River?*

**Appendix C: Implementation: Strategic Actions**

*What programmatic actions are needed to achieve reductions of PCB and dioxins to the river?*

**Appendix D: Implementation: Watershed Actions**

*What actions can be taken that will reduce PCB and dioxin inputs to the Spokane River and also be effective in other watersheds?*

**Appendix E: Assessment of Progress**

*What activities will be performed to assess the progress of toxics reductions?*

# Appendices

---

## Introduction

The purpose of these Appendices is to facilitate Steps 1 and 2 of the Funding strategy. Step 1, “Identify Needs,” is represented by a range of projects that are of interest to the SRRTTF. To develop the list, the Task Force created a set of projects based on perceived needs. The Task Force did not prioritize the basic list and order of the projects in these appendices is not an indication of funding priority or Task Force preference.

Step 2, “Identify Funding Sources,” is represented by the list of possible funding and partnership organizations. By identifying potential funding sources and partnerships in advance, the Task Force can be prepared to respond quickly should opportunities arise. The list of potential funding sources and partners are suggestions since all partnerships are encouraged.

The organization of the Appendices follows the a logical progression of source characterization (Appendix A), identification of targeted Best Management Practices for the Spokane River (Appendix B), the Strategic Actions needed to achieve Task Force goals (Appendix C), broader actions needed to achieve success on a watershed basis that can also be useful in other watersheds (Appendix D), and activities that are needed to assess progress (Appendix E).

The projects are broken into discrete but related activities. This optimizes flexibility with respect to finding funding and/or sponsor organizations. By identifying the discrete needs, the Task Force can more closely with the funding organizations during the planning and budgeting process.

If a project has a connection or dependency on another project, is it noted under “Related Activities.”

## Appendix A Toxics Source Characterization

Where are the toxics (PCBs and dioxins) coming from, how do they move through the environment, and how do they enter the river?

*Comment: Seems as if the TSCA reform items (A1 through A4) should/could be combined.*

*Comment: Suggest you merge A1 – A4 (plus the others: B4, D3) and put them all under one heading, with subheadings.*

*Response: These are related but are different activities and may be done by different entities for different purposes. They could be combined later, if needed.*

*Comment: Also, these were characterized as a “campaign” in our brainstorming session, and although I think it is very important, I think that Spokane River specific work such as source ID, fate and transport, aerial deposition sources in the Spokane should be the emphasis here. They are buried below. Can you bring them to the top?*

*Given the discussion at the WG meeting, I would suggest that the Technical Consultant activities below be put at the top.*

*Response: Technical Consultant tasks moved to top of list. (The project numbers will be changed prior to finalization.)*

*Comment: This begs the question: do you try to prioritize – maybe High medium and low??*

*Comment: I think we need to analyze this list and attempt to do a preliminary prioritization based on what is most impactful to our watershed. This list gives a misleading interpretation to the priorities, whether intended or not. I suggest a “High Priority”, “Medium Priority”, and “Low Priority” classification to help focus our funding efforts and resources. This will be a living document that will be revised as we become more knowledgeable - we should probably say as much as an introduction to Appendix A*

*Response: That would be a good work group activity.*

### **A6. Identify Existing PCB Sources, Loads, and Sinks in the Spokane River Watershed.**

**\*Currently Funded by members of the SRSP and the Department of Ecology\***

*Comment: From my perspective, this would be a “High Priority” item.*

*Response: Prioritization would be a good work group activity.*

*Comment: Thus far, but there may be more work (eg., keying in on aerial deposition as a source, etc., that may be funded by other sources. Either specify this is for the current scope of work, or take out the "funded by"*

*Response: This is a project that is currently funded and the tasks are specified in the last sentence. Does this need to be rewritten? Do we want to keep the projects that have been funded in these Appendices, put in separate Appendices, or delete altogether?*

*Problem Statement:* The Spokane River has been the subject of toxics investigations for more than 20 years. The most recent assessment of the river noted that approximately half of the PCB inputs to the Spokane River are unaccounted for and the movement of PCBs through the Spokane River Watershed is not well-understood. The SRRTTF desires to define the data needs for the watershed, and the ways in which the data needs can be satisfied. An initial step in the process is the collection of all available data in the watershed as well as other known and potential sources of data that can be used for measurement, modeling and literature review. LimnoTech, Inc. has been hired by the SRRTTF as an independent consultant to assist in this process. Tasks 2, 4, 5, and 6 of Phase 1a of [LimnoTech's scope of work](#) is the listing all of the information required to define existing PCB and dioxin sources, loads and sinks; the collection of existing data; the evaluation of the quality and credibility of the data; and a data gaps analysis.

*Comment: LimnoTech Scope of work should be included as an attachment or as a reference, since others reading this may have no knowledge of the document (perhaps Appendix F?)*

*Response: added link in document to website. Also added link to A7, A8, A10, A11 and A12.*

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Responsible Source Contributors  
Academia  
Scientific and Trade Organizations

*Funded by:*

Spokane River Stewardship Partners  
Department of Ecology Interagency Agreement  
Academia  
Scientific and Trade Organizations  
Partner Organization in-kind contributions

*Related Activities: A7, A8, A10, A11 and A12.*

**A7. Ensure Quality of Source Characterization Activities \*Currently Funded by members of the SRSP and the Department of Ecology\***

*Problem Statement:* The SRRTTF desires to have accurate, precise, and comparable data for evaluation of the sources of toxics (PCB and dioxin) in the Spokane River. LimnoTech, Inc. has been hired by the SRRTTF as an independent consultant to assist with the source characterization. Task 3 of Phase 1a of [LimnoTech's Scope of Work](#) is the review of standard operating procedures for data collection and analysis that is currently used by all agencies during the project. The deliverable of this task is a memo summarizing the standard operating procedures, identifying any procedures that will not produce suitable data quality.

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Academia  
Scientific and Trade Organizations

*Funded by:*

Spokane River Stewardship Partners  
Department of Ecology  
Partner Organization in-kind contributions  
Academia  
Scientific and Trade Organizations

*Related Activities: A6, A8, A10, A11 and A12*

**A8. Identify the Appropriate Source Characterization Modeling Tool for the Spokane River Watershed**

*Problem Statement:* Water quality modeling can be a cost effective tool that leads to an understanding of how toxic substances behave in the watershed. Water quality models have been used to simulate the major physical, chemical, and biological processes that occur in a system. LimnoTech, Inc. has been hired by the SRRTTF as an independent consultant to assist with identifying and summarizing the modeling tools that are suitable for use in evaluation of the watershed (Task 7, Phase 1b of the [Technical Consultant Work Plan](#)).

*Partner Organizations:*

Spokane River Stewardship Partners

Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

*Funded by:*

Spokane River Stewardship Partners  
Department of Ecology  
Partner Organization in-kind contributions

*Related Activities: A6, A7, A9, A10, A11 and A12*

**A10. Understand the Fate and Transport of PCB in the Watershed**

**Comment:** Again. A "High Priority" item

**Response:** Moved up to front of Appendix. Prioritization would be a good work group activity.

*Problem Statement:* There is an incomplete understanding about how PCB enters and moves through the Spokane River watershed. The application of a water quality model to the watershed can be used to describe the sources and sinks of PCB in the watershed. (Phase 3 of the [Technical Consultant Work Plan](#)).

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

*Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities: A6, A7, A8, A9, A11 and A12*

**A11. Collect Watershed Data Phase 1**



*Comment: This and A7 are actually subsets of the work being performed by the Technical Advisor. I suggest either qualifying these, along with other Technical Advisor Scope of Work” collectively or at the very least keeping them itemized sequentially in the same area of the document.*

*Response: These projects are itemized sequentially, in the order of task, and presented in the same Appendix. Technical Consultant Work Plan tasks are identified in the problem statement and a link provided. The Technical Consultant Tasks have been moved to the front of the document. A9 was moved down on the list because it was not specifically included in the work plan and will be renumbered before finalization.*

*Problem Statement: Problem Statement:* The Spokane River has been the subject of toxics investigations for more than 20 years. The most recent assessment of the river noted that approximately half of the PCB inputs to the Spokane River are unaccounted for and the movement of PCB through the Spokane River Watershed is not well-understood. The SRRTTF desires to collect the necessary data needed to characterize the inputs of PCBs and dioxins to the Spokane River. LimnoTech, Inc. has been hired by the SRRTTF as an independent consultant to assist with developing a data collection strategy, Quality Assurance Project Plan(s) in preparation for data collection (Tasks 8 and 9, Phase 1b and of the [Technical Consultant Work Plan](#)).

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

*Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities: A6, A7, A8, A10, A12*

**A12. Collect Watershed Data Phase 2**

*Problem Statement:* The Spokane River has been the subject of toxics investigations for more than 20 years. The most recent assessment of the river noted that approximately half of the PCB inputs to the Spokane River are unaccounted for and the movement of PCB through the Spokane River Watershed is not well-understood. The SRRTTF desires to collect the necessary data needed to characterize the inputs of PCBs and dioxins to the Spokane River. This involves the collection of data in the Spokane

Watershed in accordance with SRRTTF's data collection strategy, and approved Quality Assurance Project Plan(s). (Phase 2 of the [Technical Consultant Work Plan](#))

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

*Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities: A6, A7, A8, A10, A11*

**A9. Understand the Role of Atmospheric Deposition as a Source to the Spokane River from global, regional, and local sources.**

*Problem Statement:* The Department of Ecology conducted a literature search identifying the potential for atmospheric deposition of PCB to the watershed. Environmental studies in the watershed have also shown correlations with snow, rainfall, stormwater, and seasonal relationships. These sources (global, regional, and local) are not well understood. A better understanding of the quantity and composition of atmospheric PCB deposition is needed.

*Partner Organizations:*

Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Spokane Regional Clean Air Agency  
Academia

*Potential Funding Sources:*

Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions  
Academia

*Related Activities: A8, A10*

**A1. Identify List of "Inadvertently Produced" PCBs**

*Comment: The over-arching issue with Items A.1. through A.4 is TSCA reform to eliminate these new sources of allowable PCBs from entering our environment. My suggestion is for a primary item relative to simply TSCA reform and efforts to eliminate these allowable sources. These other items (List ID, caulks, Consumer Products List) are a subset of this greater issue - solving the source should be the primary focus, not dealing with the consequences of continued status quo.*

*Response: Agreed that the over-arching issue is TSCA regulatory reform. Specific projects are broken out because they are related but are different activities and may be done by different entities. They could be combined later, if needed. Added project for TSCA regulatory reform to Appendix D.*

*Question: is TSCA regulatory reform a project that needs a funding strategy?*

*Problem Statement:* In 40 Code of Federal Regulations (CFR) , Part 761.3, the regulation states that “inadvertently produced” PCBs may be present in a manufacture process at an average concentration of 25 ppm up to 50 ppm maximum. This amount is 781,250,000 times greater than EPA’s Human Health Water Quality Criteria (HHWQC) of 64 pg/L (parts per quadrillion). A 1983 publication by USEPA cites a report from Versar, Inc. stating that there are more than 200 chemical processes that can result in the production of “inadvertently produced” PCBs. Appendix A in the publication provides a general list of the chemical intermediates which could contain PCB. It does not, however, contain a list of the 200 chemical processes. Consumer products and other sources containing these allowable inadvertently produced PCBs are entering the environment through many different mechanisms (municipal wastewater, stormwater, paper recycling, ambient distribution and deposition). Further information is needed to identify the relevancy of this list and prioritize processes, chemicals, and products that could be contributing PCB to the environment.

*Partner Organizations:*

Environmental Protection Agency  
Department of Ecology  
Universities and Research Organizations  
Chemical Manufacturers and Trade Organizations

*Potential funding sources:*

Environmental Protection Agency  
Department of Ecology  
Non-profit organizations and Foundations

*Related Activities: A2, A3, A4*

**A2. Product List of Consumer Products that May Contain PCB**

*Problem Statement:* Literature review and preliminary work done by SRRTTF participants have identified that PCB may be present in consumer products that are routinely purchased through retail outlets and used in the Spokane watershed. Disposal of these products through the sanitary sewer or storm drain system is a conduit for introduction of PCB to the river. More information is needed to identify and quantify the levels of PCB in commonly used products. This information can be used for source assessment, development of Best Management Practices, consumer choice campaigns, health education, and support of the Toxics Substances Control Act regulatory reform.

*Partner Organizations:*

Municipal and industrial dischargers  
Department of Ecology  
Environmental Protection Agency  
Chemical Manufacturers and Trade Organizations

*Potential funding sources:*

Partner Organizations  
Department of Ecology Environmental Protection Agency  
Chemical Manufacturers and Trade Organizations

*Related Activities: A1, A3, A4, D3*

**A3. PCB in Caulks**

*Comment: This is likely not a significant contributor of PCBs to the watershed and therefore should be classified as a "Low Priority" item if at all.*

*Response: Prioritization of projects would be a good work group activity. This is an identified known source that has recommended assessment and management standards. This is a data gap with respect to the status of older buildings in Spokane.*

*Problem Statement:* In recent years, EPA has learned that caulk containing potentially harmful levels of PCBs was used in many buildings, including schools, in the 1950s through the 1970s. Most schools and buildings built after 1979 do not show significant levels of PCBs in caulk. On September 25, 2009, EPA announced new guidance for school administrators and building managers with important information about managing PCBs in caulk and tools to help minimize possible exposure. More information is needed regarding the presence of PCBs in caulk in schools, public buildings, and buildings undergoing demolition. Through [EPA PCB Regional Coordinators](#), the Agency plans to assist communities in identifying potential problems and, if necessary, developing plans for PCB testing and removal.

*Partner Organizations:*

Environmental Protection Agency

Department of Ecology  
Spokane Regional Health District  
Local School Districts

*Potential funding sources:*

Partner Organizations  
Department of Ecology  
Environmental Protection Agency

*Related Activities: A3, A4*

**A4. Chemical Action Plan for PCB \*Funded by Department of Ecology\***

*Problem Statement:* Persistent, bioaccumulative toxics (PBTs) are a distinct group of chemicals that threaten the health of people and the environment. PCB is an example of a PBT. PBTs are considered the "worst of the worst" and raise special challenges for our society and the environment because:

- They remain in the environment for a long time without breaking down (persistent).
- Animals and people accumulate PBTs in their bodies. As these chemicals move up the food chain, they increase in concentration, and linger for generations in people and the environment (bioaccumulate).
- Exposure to PBTs has been linked to a wide range of toxic effects in fish, wildlife, and humans, including effects on the nervous system, reproductive and developmental problems, immune-response suppression, cancer, and endocrine disruption (toxic).
- PBTs can travel long distances and generally move easily between air, water and land, spanning boundaries of programs, geography, and generations.

The PBT Initiative focuses on one toxic substance at a time through the development of a Chemical Action Plan. A Chemical Action Plan (CAP) is a comprehensive plan to identify, characterize and evaluate all uses and releases of a specific PBT, a group of PBTs or metals of concern. A CAP is a plan, not legislation or a rule. It recommends actions to protect human health and the environment. Some of the recommendations may lead to new legislation or rules. These would go through the normal legislative or rulemaking process.

Ecology develops each CAP in collaboration with other agencies and experts representing various businesses, agricultural and advocacy sectors. PCBs are a current priority for Ecology in several geographic areas such as the Duwamish River and Spokane River. Concerns are growing about PCBs as a contaminant in products including inks and dyes. Ecology is also working to develop human health criteria for water quality standards, and PCBs are a key chemical of concern in this process. A PCB CAP will take an inclusive look at the sources of PCBs in Washington and make recommendations to reduce exposures.

*Partner Organizations:*

DRAFT for TTWG REVIEW June 5, 2013

Municipal and industrial dischargers  
Department of Ecology  
Environmental Protection Agency

*Funded by:*  
Department of Ecology

*Related Activities: A1, A2, A3*

DRAFT

# Appendix B

---

## Identification of Best Management Practices

What actions are needed to reduce the inputs of PCB and dioxins to the Spokane River?

### B1: Identification of Best Management Practices for Reducing PCB Sources

*Comment: BMPs are not necessarily all identified from scientific literature. We may be on the leading edge of many inputs that have not been fully investigated by the scientific community (Source control, TSCA reform, Green Chemistry alternatives, and ambient deposition.*

*Response: Added comment into the problem statement.*

*Problem Statement:* The identification and implementation of Best Management Practices (BMPs) can be effective in reducing the input of PCBs to the river. BMPs, which are source-specific, can be identified from scientific literature. We may also identify inputs of PCB to the river that have not been fully investigated by the scientific community. A range of BMPs are needed and the SRRTTF may be on the leading edge with respect to BMP development. The needed BMPs can vary in the cost of implementation and expected pollutant removal efficiency. Modeling can be used to simulate a range of combinations of BMPs, and determine which specific mix of BMPs is required to meet pollutant targets. Based on modeling results, the specific mix of BMPs can be identified and included in a comprehensive source reduction plan. The plan would summarize the sources of PCBs in the Spokane River, identifies potential BMPs, and recommends an implementation plan for measures (BMPs) to reduce PCBs in the Spokane River watershed. (Phase 4 of the Technical Consultant Work Plan)

#### *Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Scientific Organizations/Academia  
Other Watersheds (Delaware basin, Duwamish, Puget Sound, Portland Harbor, etc.)

#### *Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities:* A6, A7, A8, A10, A11, A12

## **B2. Research: Biochar Treatment Technology**

*Comment: Why limit this to Biochar? There are many other substrates that have similar adsorptive properties (Activated carbon, walnut shells, etc.). I suggest calling this "Stormwater Abatement/Treatment Technologies"*

*Response: There is already an ongoing and mature research program on this topic in partnership with WSU. The Lands Council is also doing biochar research. This is a project that could be implemented in the watershed.*

*Added another project to Appendix D as future research: "Identify Potential Research for Stormwater Abatement/Treatment Technologies."*

*Problem Statement:* PCBs have been identified in urban stormwater runoff has been identified as a source of PCB. Unless PCBs are removed from the stormwater, the PCBs continue to remain in the environment. Biochar has been identified as a waste product that can be put to use in stormwater treatment. Further research is needed to find ways to use biochar in the treatment of stormwater, for removal and potential destruction of PCBs.

*Partner Organizations:*

Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Washington State University  
Academia  
Treatment Technology Suppliers/Experts  
Other Watersheds

*Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions  
Academia  
Treatment Technology Suppliers/Experts (Pilot testing of technologies and/or in-kind services).

*Related Activities: D???"Identify Potential Research for Stormwater Abatement/Treatment Technologies."*



### **B3: Research: Algae Treatment Technology**

*Comment: Is this really a true BMP or does it belong in one of the Appendices below?*

*Response: There is already an ongoing research program on this topic. This is a project that could be implemented in the watershed.*

*Comment: Again, why limit this to algae when there are likely other technologies available for abatement (Activated carbon, walnut shell, etc.). I suggest generalizing this as indicated with subsets if necessary.*

*Response: Added another project to Appendix D as future research: "D?????. Identify Potential Research for Wastewater Treatment/Abatement Technologies"*

*Problem Statement: Industrial and municipal wastewater require treatment to remove PCB. Algae can potentially be used to remove both PCB and phosphorus from wastewater. Further research is needed to identify how this technology can be used to reduce the loading of PCB to the Spokane River.*

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Academia  
Treatment Technology Suppliers/Experts  
Other Watersheds

*Potential funding sources:*

Inland Empire Paper - Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions  
Academia  
Treatment Technology Suppliers/Experts (For pilot testing of technologies and/or in-kind services)

*Related Activities: D?????. Identify Potential Research for Wastewater Treatment/Abatement Technologies"*

**[B4 moved to Appendix D]**

**B5: Best Management Practice: Demolition standards**

*Problem Statement:* PCB has been identified as a contaminant in concrete and caulk. The introduction of PCB to the environment can be mitigated by implementing best management practices for demolition. Once Best Management Practices have been identified for this PCB source, a combination of technical, regulatory, and local ordinances can be used to implement them within the Spokane watershed.

*Partner Organizations:*

Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Spokane Regional Clean Air Agency  
Various Contracting/Construction/Environmental Mitigation Organizations

*Potential funding sources:*

Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities:* A3

**B6: Best Management Practice: Stormwater Treatment and Infiltration**

*Problem Statement:* PCBs have been identified as a contaminant in stormwater. Municipal separate storm sewer systems (MS4s) convey stormwater to the Spokane River. One potential BMP to prevent PCBs from entering the river through stormwater is through treatment and infiltration. Many treatment technologies exist, including media filtration and other proprietary devices, low impact development, and conventional treatment.

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

*Potential Funding Sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities:*

D??? “Identify Potential Research for Stormwater Abatement/Treatment Technologies.”

City of Spokane Integrated Plan

**B7: Enhanced Treatment at Wastewater Treatment Facilities**

*Problem Statement:* PCBs have been identified as a contaminant in municipal wastewater. Several municipalities discharge treated effluent to the Spokane River. Dischargers have continually upgraded treatment plants over the past several decades to reduce pollutants entering the Spokane River through effluent. The Dissolved Oxygen TMDL on the Spokane River set strict wasteload allocations for phosphorus, CBOD, and ammonia, prompting wastewater treatment facilities to install sophisticated treatment technologies to meet these criteria. These technologies will also greatly reduce the concentration of PCBs in effluent. Spokane County’s new facility was designed to meet the DO TMDL wasteload allocations and consequently also has very low PCB concentrations. Enhanced treatment facilities are currently in the design phase in other municipalities and are anticipated to have a similar PCB reduction.

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

*Funding Sources:*

Spokane River Stewardship Partners

*Related Activities:*

*Next Level of Treatment*

D???? “Identify Potential Research for Wastewater Treatment/Abatement Technologies”

## **B?: Urban Waters Initiative**

*Problem Statement:* The ecology of urban waters poses special challenges due to concentrated human activity. The typical urban environment exposes these waters – including their shores and sediments (mud at the bottom of the waterway) – to many sources of pollution. These sources include industry, businesses, municipal wastewater, stormwater, spills, marinas, septic systems and many other sources. In addition, the big urban populations next to these waters add pollution from households, ranging from cleaners to paints, to motor oil.

These pollutants cause many problems for urban waters: dirty shorelines and beaches; contamination of fish habitat; and toxic substances entering the food chain. Cleanups are expensive to business and taxpayers and polluted areas often cannot be used for development, industry or recreation.

The Washington Department of Ecology developed the Urban Waters Initiative to focus on the special environmental challenges faced by urban water bodies. The initiative gives a boost to ongoing efforts to find and control pollution sources before they enter these waters. The aim is to prevent contamination or re-contamination of waterways. Re-contamination occurs when a polluted waterway that has already been cleaned up starts becoming polluted again.

The Spokane River Urban Waters Team is a partnership between Ecology and The Spokane Regional Health District. The team works closely with The Spokane River Forum and Spokane Aquifer Joint Board to develop informational materials for local businesses and the public.

Together, we developed a master inspection checklist to guide our visits to business. We work with businesses to identify and prevent pollution from reaching the river through sediment, stormdrains, and combined sewers. In particular, the team is looking for pollutants that contain lead and other heavy metals, polychlorinated biphenyls(PCB's), PBDE's(flame retardants), dioxins and furans.

During visits to businesses specialists from the Urban Waters Team pay particular attention to the following practices:

- Industrial processes that generate wastewater
- Pretreatment of wastewater
- Waste disposal
- Activities that are at high risk for generating pollution
- Spill prevention
- Use of stormwater structures
- Maintenance practices that take place outside
- Management of washwater
- Outdoor storage of products and waste

A clean river is good for the community and good for business. Working together as a community, we will ensure that future generations have enough clean water to sustain a healthy lifestyle and economy.

*Partner Organizations:*

Department of Ecology  
Spokane Regional Health District.  
Spokane River Forum  
Spokane Aquifer Joint Board

*Funded by:*

Department of Ecology  
Environmental Protection Agency

- *Comment: Other BMPs for consideration Consumer Education/Awareness/Prevention*  
*Response: See D1 and C3*
- *Pollution Prevention/Source Control*  
*Response: See D2 and E2*
- *Soil/Sediment Control*  
*Response: See B6*
- *Cleanup of on-land PCBs "hot spots"*  
*Reponse: Added new projects: "Urban Waters Initiative" to Appendix B*

DRAFT

# Appendix C

---

## Implementation: Strategic Actions

What programmatic actions are needed to achieve reductions of PCB and dioxins to the river?

### C1. Facilitation of the Spokane River Regional Toxics Task Force

*Problem Statement:* The Spokane River Regional Toxics Task Force is an organization that is administered under a Memorandum of Agreement. A diverse set of organizations participate on the Task Force. Organizations that have a water discharge permit to the river are required to participate in the Task Force. Resources are needed to facilitate the meetings and activities of the organization, maintain communications, document Task Force activities, and maintain the public website.

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Other Regulatory Agencies (SDOH, DOT, etc.)  
Conservation Groups

*Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

### C2. Evaluation of Regulatory Barriers to PCB Source Reduction

*Problem Statement:* PCB is regulated by a variety of agencies with differing and conflicting regulatory standards. Some regulatory standards at the state and federal level are not as stringent as the water quality standards. As a result, they can be barriers to achieving source reduction. Efforts are needed to identify and remove these barriers.

*Partner Organizations:*

Department of Ecology  
Idaho Department of Environmental Quality

Environmental Protection Agency

*Potential funding sources:*

Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions  
Conservations Groups  
Business and Industry

**D1. Agency Messaging**

*Problem Statement:* State and federal agencies play an important role in the public message surrounding PCB. The manner in which PCB is presented on many websites does not include the topic of inadvertently produced PCB. As a result, the misleading message is that PCB is a “legacy” pollutant that results from the mismanagement of PCB wastes. A concerted effort is needed to modify the public information.

*Partner Organizations:*

Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

*Potential funding sources:*

Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

*Related Activities:* A2, C3, D2

**C3. Education and Outreach**

*Problem Statement:* PCBs are ubiquitous in the environment. Education and outreach is needed to inform consumers about the presence of PCB in products that are used and disposed of in the watershed. A variety of education and outreach tools can be created depending on the desired message and target audience: health education, consumer education, etc.

*Partner Organizations:*

Spokane River Stewardship Partners

Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Health Departments

*Potential funding sources:*

City of Spokane and Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities: A2, D1, D2*

**C4: Integrated Clean Water Planning**

*Problem Statement:* The reduction of sources of PCB should be in concert with local watershed planning efforts. Best Management Practices and engineering solutions need to be incorporated into integrated watershed plans.

*Partner Organizations:*

City of Spokane  
Washington and Idaho Municipal Dischargers and Stormwater Agencies  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

*Potential funding sources:*

City of Spokane  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities: B6*



**D6. Align PCB Standards between Environmental Programs**

*Problem Statement:* PCB in the environment is regulated by a variety of regulatory programs, all with a specific set of PCB standards. Different methodologies are used to detect PCB in the forms of Aroclors, homologs, and congeners. These methodologies are then used to interpret compliance with PCB requirements. A better understanding is needed of PCB standards and program-specific methodologies and how they relate to the water quality goal for the Spokane River.

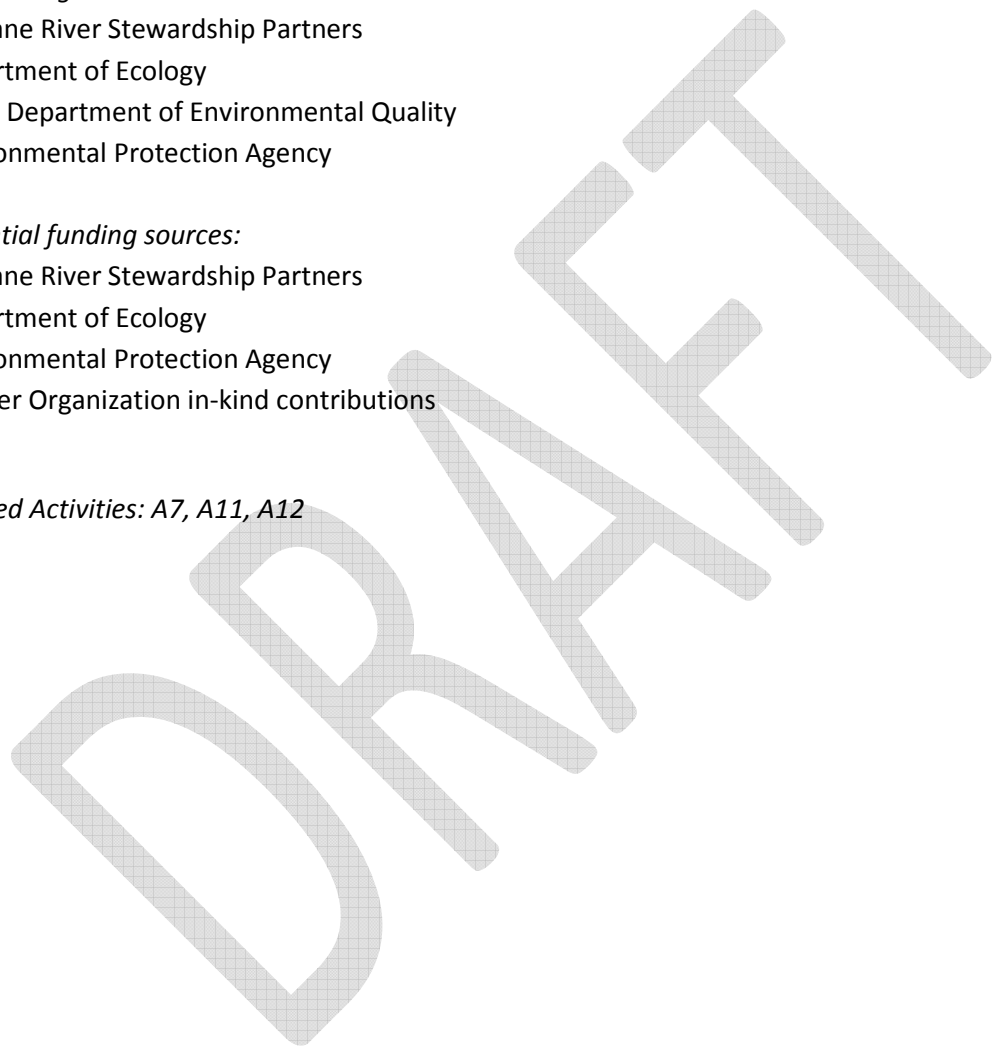
*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

*Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities:* A7, A11, A12



# Appendix D

---

Implementation: Watershed Actions What actions can be taken that will reduce PCB and dioxin inputs to the Spokane River that will also be effective in other watersheds?

## [D1. Agency Messaging Moved to Appendix C]

## **D2. Consumer Choice Education and Labeling**

*Problem Statement:* Most consumers are not aware that PCB-containing products are still sold and routinely used. In addition, most consumers are unaware of the impact their purchasing decisions have on the environment, in particular the Spokane River. The current regulations for managing PCB under the Toxic Substances Control Act and the solid waste regulations are inadequate at protecting the river and those relying on the fish in the river. The most effective way to control PCB pollution is to reduce the inputs of PCB at the source. Unless steps are taken to reduce PCB at the source, the economy of the local region could be impacted by expensive end-of-pipe treatments for municipal facilities and loss of economic competitiveness for local recycling businesses. Consumer awareness and market incentives can be created through the development of a “PCB Free” label program that can be adopted for use within the watershed.

### *Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

### *Potential funding sources:*

Spokane River Stewardship Partners (education)  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities:* A2, C3, D1

## **D?. Green Purchasing: Agency Programs**

*Problem Statement* Since government purchasing represents 20% of Gross Domestic Product and multi-year contracts, government bidding processes are a great opportunity to push manufacturers and vendors to provide safer products and disclose product ingredients. This demand for green products can lead to better pricing and supply. For example, government purchasing has driven down the price of 100% recycled content office paper significantly.

Green purchasing (EPP), also known as environmentally preferable or sustainable purchasing, is the procurement of goods and services that cause less harm to humans and the environment than competing goods and services that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance or disposal of the product or service.

Work is needed to

- 1) Identify PCB-free purchase options
- 2) Educate agency and program buyers

Incorporate PCB-free products into green purchasing programs.

*Partner Organizations:*

Department of Ecology

*Potential funding sources:*

Spokane River Stewardship Partners

Department of Ecology

Environmental Protection Agency

Partner Organization in-kind contributions

*Related Activities:* A1, A2, C3, D2

## **D???. Toxic Substances Control Act Regulatory Reform**

In 40 Code of Federal Regulations (CFR) , Part 761.3, the regulation states that “inadvertently produced” PCBs may be present in a manufacture process at an average concentration of 25 ppm up to 50 ppm maximum. This amount is 781,250,000 times greater than EPA’s Human Health Water Quality Criteria (HHWQC) of 64 pg/L (parts per quadrillion). Consumer products and other sources containing these allowable inadvertently produced PCBs are entering the environment through many different mechanisms (municipal wastewater, stormwater, paper recycling, ambient distribution and deposition). TSCA regulatory reform is needed to eliminate the production of products that could be contributing PCB to the environment.

### *Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

### *Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities:* A1, A2, A3, A4, B4, D3, D4

### **B4: Green Chemistry: PCB Free Pigments**

*Comment: So much of the focus has been on pigments. What other products are out there in the world that are creating inadvertent PCBs that are getting into our environment? I suggest either generalizing this section as simply Green Chemistry for PCB-free Products or creating a separate category beyond just pigments.*

*Response: Agreed, there is more to look at than PCB. This is listed separately as a specifically source. Others could be added once we have more information from our technical studies. See also A4 and D4.*

*Problem Statement:* Diaryl (yellow, red, orange) and phthalocyanine (green, blue) pigments can contain PCB as a manufacturing by-product. The production of yellow pigment alone results in 1.5 million tons a year of PCB being introduced to the global environment. Alternative methods of synthesis are needed to produce PCB-free pigments. The use of green chemistry principles are needed to avoid creating replacement chemicals that are also toxic.

### *Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality

Environmental Protection Agency

*Potential funding sources:*

Inland Empire Paper - Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities: D3*

**D3. Elimination of PCB from Pigments**

*Problem Statement:* The Environmental Protection Agency rules allow for PCB to be present as a inadvertently produced by-product of manufacture. Diaryl (yellow, red, orange) and phthalocyanine (green, blue) pigments can contain PCB. The production of pigments alone results PCB being introduced to the global environment. A regulatory incentive is needed to produce PCB-free pigments.

*Partner Organizations:*

Inland Empire Paper Co. - Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Other stakeholder organizations  
Chemical/Pigment Manufacturers

*Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions  
Chemical/Pigment Manufacturers (In kind to find PCB-free alternatives)

*Related Activities: D??, D3, D4*

#### **D4. Elimination of PCB from other sources**

*Problem Statement:* The Environmental Protection Agency rules allow for PCB to be present as a inadvertently produced by-product of manufacture. In 1982, the EPA identified that there are more than 200 industrial processes that produce PCB. EPA's information from that era is in summary format with little detail as to how and where these products are produced, what the residual PCBs are, and whether they are introduced to the environment through normal use. More research is needed to identify former, current, and potential future sources of inadvertently produced PCBs, their use and fate in the environment.

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Other stakeholder organizations  
Chemical/Pigment Manufacturers

*Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions  
Chemical/Pigment Manufacturers

*Related Activities:* A1, A2, A3, A4, B4, D3, D4, D??

#### **D5. Align Analytical Methodologies**

*Comment:* Add "and the development of a Quality Assurance Project Plan (QAPP) for monitoring of all materials in the watershed" to the project scope.

*Response:* See projects A7 and A11 for work performed by the Technical Consultant. This project addresses the discrepancies in EPA and agency approved methods.

*Problem Statement:* There are a variety of analytical methodologies that can be used to measure PCBs in the environment. Different methodologies have different uses for the purposes of detecting PCBs in the

forms of Aroclors, homologs, and congeners. A better understanding is needed of these methods, and how they relate to the water quality goal for the Spokane River.

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

*Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities: C2, D6, A7, A11, A12*

**D6. Align PCB Standards between Environmental Programs**

*Problem Statement:* PCB in the environment is regulated by a variety of regulatory programs, all with a specific set of PCB standards. Different methodologies are used to detect PCB in the forms of Aroclors, homologs, and congeners. These methodologies are then used to interpret compliance with PCB requirements. A better understanding is needed of PCB standards and program-specific methodologies and how they relate to the water quality goal for the Spokane River.

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency

*Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities: C2, D6, A7, A11, A12*

**D???. Identify Potential Research for Stormwater Abatement/Treatment Technologies**

*Problem Statement:* Industrial and municipal stormwater require treatment to remove PCB. Research is needed to identify cost effective stormwater abatement and treatment technologies.

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Responsible Source Contributors  
Academia  
Scientific and Trade Organizations  
Water Environment Federation

*Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions  
Water Environment Research Foundation Grants

*Related Activities: C4, B6*

**D???? Identify Potential Research for Wastewater Treatment/Abatement Technologies**

*Problem Statement:* Industrial and municipal wastewater require treatment to remove PCB. Research is needed to identify cost effective stormwater abatement and treatment technologies.

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Responsible Source Contributors  
Academia  
Scientific and Trade Organizations  
Water Environment Federation

*Potential funding sources:*

Spokane River Stewardship Partners  
Department of Ecology  
Environmental Protection Agency  
Water Environment Research Foundation Grants



Partner Organization in-kind contributions

*Related Activities: C4, B7*

DRAFT

# Appendix E

---

## Assessment of Progress

What activities will be performed to assess the progress of toxics reductions?

### E1. Environmental Assessment and Toxics Monitoring

*Problem Statement:* Ongoing Environmental Assessment and toxics monitoring is needed to assess the quality of the water in the Spokane River and the progress made in toxics reduction.

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality  
Environmental Protection Agency  
Other stakeholders

*Potential funding sources:*

Department of Ecology  
Environmental Protection Agency  
Partner Organization in-kind contributions

*Related Activities:* A7, A8, A9, A10, A11, A12

### E2. Toxics Management Plans: Implementation

*Problem Statement:* Organizations that hold wastewater permits for the Spokane River are required to prepare and implement Toxics Management Plans. The plans are one tool in the overall strategy to achieve the water quality goals. The Toxics Management Plans identify specific actions that can be taken by the permit holders to identify the sources of PCBs in the wastewater systems, and potentially to reduce toxics to the Spokane River. These actions may be done by individual organizations or collaboratively as part of the Task Force efforts.

*Partner Organizations:*

Spokane River Stewardship Partners  
Department of Ecology  
Idaho Department of Environmental Quality

Environmental Protection Agency

*Potential funding sources:*

Spokane River Stewardship Partners

Partner Organization in-kind contributions

*Related Activities: A2, A3, A4, B1, B5, B6, C2, D1, C3, C4, D2, D?, D4, D???, D????, E1*

### **E3. Municipal and Industrial NPDES Wastewater Discharge Solutions**

*Comment: Dischargers are not necessarily required to install enhanced treatment technology. The dischargers are required to perform a PCB source ID study, followed by a BMP plan to address these sources. This may or may not require the addition of treatment technologies.*

*Reponse: See suggested edit, below.*

*Problem Statement:* Recognizing that end of pipe solutions are not technically possible today, such solutions are a piece of the equation which are needed to achieve the PCB water quality goal in the Spokane River. Organizations that have wastewater permits are required to install enhanced treatment technology to meet dissolved oxygen TMDL waste load allocations. These treatment technologies also have the benefit of reducing PCB concentrations in wastewater effluent.

*Partner Organizations:*

Spokane River Stewardship Partners

Department of Ecology

Idaho Department of Environmental Quality

Environmental Protection Agency

*Potential funding sources:*

Spokane River Stewardship Partners

Other stakeholders

*Related Activities: D????*