Date: 6/13/2016

Cost/Effectiveness of PCB Control Actions Memo – Spokane County Comments

The "*Inventory of Control Actions to Be Evaluated for the Spokane River"* Memorandum (dated May 18, 2016) includes the following language:

> *The intent of this memorandum is not to evaluate the feasibility of any control action for application in Spokane, it is solely intended to identify control actions to be evaluated. Subsequent deliverables will assess the cost reduction efficiency of these control actions in order to help identify those that may be most effective at reducing PCB loads to the Spokane River.*

It is our understanding that this current memo under consideration *("Cost/Effectiveness of PCB Control Actions for the Spokane River"* dated June 1, 2016) is the subsequent deliverable described above that "…*will assess the cost reduction efficiency of these control actions*." We understand the difficulty of this task, but we believe the *PCB Control Actions* memo as currently written does not yet accomplish this goal; hopefully it can be updated in order to provide the necessary foundation for further work by the Task Force. Below are comments on specific parts of this memo that we hope can assist our effort.

Table 2 – Potential Control Action Costs and Load Reduction Efficiencies

Much of the cost information contained in Table 2 does not seem to have enough information to be relevant and useful to the Task Force. A narrative approach would likely be better suited, rather than a table, to explain costs, effectiveness, and relevance to the Spokane River watershed. To illustrate the issues with the format and information currently included in the memo, we have provided comments on a small subset of entries in the table. Many, if not all, of the entries have similar issues.

- *2b – Public Education campaign*: It is our understanding that the $35,000 per year included in the table was given by Spokane County related to the work we have done for our Toxics Management Plan. A narrative description of how the $35,000 was used could allow Task Force members to understand the cost and scale it to different applications in the watershed.
- *4 – Identification of PCBs during industrial inspections*: Information is missing to determine how the $5,000 was used. Information such as number of inspections or the size of the city it was used in, etc. would be useful information for the Task Force to consider. There is a source control program currently in place in Spokane funded by Ecology and implemented by the Spokane Regional Health District which could be a reference, both for cost and effectiveness.
- *10 – Purchasing standards*: It may be true in noting the effort of updating the text of "purchasing standards" is "very little cost", but implementation, enforcement and legal defense will likely be substantially costly and questionably feasible or practical.
- *14 – Survey of electrical equipment (historical):* There is no information to determine how the $22,733/year was used. Information such as the number of buildings, size of the city, etc. would be useful information for the Task Force. Additional information such as how a survey reduces PCBs, even if only a qualitative description, would be useful.
- *24d – Permeable pavement w/o sand, veg:* It is unclear what $14,167/year over 20 years covers. Information such as cover area, installation costs vs. maintenance costs would be useful for consideration by the Task Force. It is also unclear what the effectiveness metric relates to, and how that relates to delivery of PCBs to the River.

It also appears that the Control Action Numbers from Table 2 do not match the Appendix in all instances. For example, item 14 in Table 2 is *Survey of electrical equipment* while in the Appendix, item 14 is *Support for green chemistry alternatives*. To help understand the source of information for Table 2 the numbers should match.

Transport Pathways, Delivery Mechanisms, Control Actions

Each of the figures and descriptions of the figures only identify where certain control actions fit within the pathway from PCB source to the identified delivery mechanism to the River. At present, there is no discussion of the relative magnitude of an intermediate pathway, and the ability and practicality of a control action to interrupt that movement. Information about the magnitude of intermediate pathways from the Magnitude of Sources and Pathways memo, while uncertain, would provide context about the pathway. Additionally we are aware of some available information that may be relevant to qualitatively describing intermediate pathways:

- San Francisco Bay Estuary Institute "PCBs in Caulk Project" – This project evaluated the magnitude of PCBs in fixed building materials and the movement to stormwater. This project resulted in a significant reduction in the estimate of loading from caulk in buildings.
- City of Spokane catch basin sediment sampling and removal – Results from these efforts could provide context for stormwater Control actions.
- Soil Contamination from PCB-Containing Buildings (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1817698/) – This study measured PCB levels in soil surrounding buildings where PCB-containing caulk was still in place.
- Spokane County track down sampling-We have conducted focused sampling in residential areas and have used PMF finger printing to identify that a significant percentage of PCBs from these areas are Aroclor 1254. The predominant Aroclor used in building materials was Aroclor 1254. We hypothesize that Aroclor 1254 is off gassing and weathering and becoming attached to household dust, and through household cleaning and washing enters the sewer collection system. Additional information about this analysis is located in our Toxics Management Plan. Also included in the County's plan is information about the effectiveness of the Spokane County Regional Water Reclamation Facility treatment process in removing this source. Our sampling indicates that almost all of this Aroclor 1254 source is removed in the treatment process.

Selecting Control Actions for the Comprehensive Plan

Idealized Case

The description of the idealized case does not seem to add any information to the memo, is far from the situation that exists in the Spokane River watershed, and has the potential to be misleading to readers that skim the document. We recommend removing this section.

Potential Guiding Principles for Prioritization

We agree that *"Even though many intermediate transport pathways are uncertain or not quantified, sufficient information exists to allow at least a qualitative understanding of the importance of most pathways."* We believe this referenced information should be included in this memo, along with qualitative descriptions of cost effectiveness. This type of information would assist the Task Force to make informed decisions about what to include in the comprehensive plan.