Northeast-Midwest Institute Comments on the Great Lakes *DRAFT Binational Strategy for PCB Risk Management*
July 31, 2017

The Northeast-Midwest Institute (NEMWI) commends the governments of the United States and Canada for designating eight chemicals of mutual concern (CMCs) under Annex 3 of the *Great Lakes Water Quality Agreement* ("Agreement," or "GLWQA"). The Institute especially commends the governments for creating binational strategies for risk reduction for two of these chemicals, polychlorinated biphenyl compounds (PCBs) and hexabromocyclododecane (HBCD). This document comments on the risk reduction strategy for PCBs, a group of chemicals that are ubiquitous throughout environmental media and can have substantial effect on human health.

PCBs are a group of 209 individual congeners with a variety of chemical properties and behaviors. This makes describing them a difficult task that should be handled carefully. The Chemical Profile needs updating as discussed below:

In Section 2.2, it is not correct to imply that all commercially available PCB mixtures were identified by a four-digit number code. The four-digit number code only describes Aroclor mixtures – other mixtures did exist, even though they only accounted for about 2% of the PCB market in the United States.

The information presented in Table 1 is dated and would be more meaningful if properties of selected PCB congeners were presented, rather than properties of Aroclor mixtures. Aroclor mixtures can undergo weathering in the environment, making them more difficult to identify and trace through environmental media than PCB congeners. Since 2000, PCBs in fish have been measured as concentrations of individual congeners rather than as Aroclor mixtures, at least in Michigan.

The beginning of Section 2.3 is in need of substantial revision and editing. What are described as "domestic" and "international" sources of PCB contamination are more commonly described as "local" and "global" sources. To say that PCBs undergo physical and biological transformation is inaccurate.

Later in Section 2.3, it is stated that "While such efforts have not been conducted for each of the Great Lakes, it is assumed that PCB mass balances for other Great Lakes are similar." To clarify, this statement is assuming that the PCB mass balance conducted on Lake Michigan is representative of PCB mass balances that could be conducted on the other four Laurentian Great Lakes. Environmental conditions significantly vary amongst the five Great Lakes, which would cause significant variation in their PCB mass balances; thus the statement quoted above is not a safe assumption.

In the discussion about fish consumption advisories in Section 2.4, it is advised that there exists a discussion paper in 2004 by the International Joint Commission's Health Professionals Task Force (which is now the Health Professionals Advisory Board) which may provide some useful, more updated information about fish consumption advisories in the Great Lakes states and provinces.

In Section 2.5.1, in the third paragraph, it is mentioned that, "To date, only the State of Minnesota has tracked disposal records over time." This point about the lack of tracking of PCB disposal is important and should be discussed in its own paragraph. The point should be clearly made that it is not just a matter of how the PCB-containing equipment is disposed, but exactly what happens to the PCB-containing substances during and after disposal.

Table 2-4 is confusing; it is unclear how regional total weight of PCBs would be less than regional average PCB weight per transformer. Please clarify units.

The remaining comments are given with regards to the sections on existing PCB management/control policies, regulations and programs, and the gap analysis:

In Section 3.1.5, it may be helpful to mention the number of delisted Great Lakes Areas of Concern and removed Beneficial Use Impairments as a result of the Great Lakes Legacy Act.

In Figure 3-2, a spike in the mass of solid PCBs destroyed is observed. Please explain this observation.

In Section 3.2.3, it appears that the Cooperative Science and Monitoring Initiative (CSMI) is described in last paragraph of the section, but it is not mentioned by name. If this is the case, CSMI should be mentioned by name and the description should be moved to Section 3.3 (Binational Actions).

NEMWI commends the Parties on addressing the issue of unreported PCB sources in Section 4.

NEMWI supports the statement that additional, binationally-coordinated monitoring of PCBs throughout environmental media in the Great Lakes is needed.

With regards to risk mitigation and management options to address gaps:

In Section 5.1 it is stated that PCB equipment inventories should be maintained in both the United States and Canada. In addition to the equipment inventories, an evaluation of the final destination of the PCB substances they contained should be conducted.

Also in Section 5.1, it is stated that, "…equipment containing PCBs less than 50 mg/kg can be used indefinitely (Government of Canada, 2014; IIT, 2015)." If this equipment is allowed to be used indefinitely, it should be for closed systems only, and equipment and the PCBs they contain should be disposed of / destroyed so as to not risk further environmental contamination.

NEMWI supports the statement that "The suite of risk management measures in place for PCBs should also be revisited to ensure they reflect the most current scientific knowledge available."

Within the Summary of Regulations and Other Risk Mitigation and Management Recommended Actions, we suggest that rather than only promoting decommissioning with notification and safe disposal of PCB-containing equipment, this type of decommissioning should be required.

With regards to Section 5.4 (Monitoring, Surveillance, and Other Research Efforts), given the complex and ubiquitous nature of PCB contamination, it is suggested that PCBs have their own, dedicated binational data clearinghouse that includes data from all environmental media. It is suggested further that a binational data clearinghouse is created for all Chemicals of Mutual Concern under Annex 3 of the Great Lakes Water Quality Agreement and made publicly available.

Within the Summary of Domestic Water Quality Recommended Actions, rather than stating "Prevent PCBs in effluent from impacting downstream drinking water supplies (US)," it is suggested that the recommended action be changed to "minimize or eliminate (where possible) PCBs in effluent."

General Comments:

In general, PCB risk management in the Great Lakes should account for populations that rely on subsistence fishing. Specifically, target PCB concentrations in all environmental media should be low enough to strive towards the goal of subsistence fishing communities being able to reliably eat the fish.

Related to the above comment, it should be recognized that target PCB concentrations in environmental media will vary based on the location of the contamination. For example, it cannot be assumed that target PCB concentrations in sediment for a large river system that could lead to low concentrations in fish in that system, will be applicable or have the same effect in a small lake system. It is suggested that coordination of PCB risk management is done by creating goals for the transport and transformation methods of PCBs (such as minimizing the concentration of PCBs in local fish), as opposed to trying to apply blanket target PCB concentrations in sediment throughout the Great Lakes system that may be effective for some areas but not for others.

In closing, NEMWI commends the governments of the United States and Canada on creating this binational strategy for PCB risk management in the Great Lakes. This strategy is a major step towards managing PCB contamination in the Great Lakes system, and if successful, could serve as an example to reduce PCB contamination in other areas of both the United States and Canada.