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Dear Ms. Klevs and Ms. Mitchell,

We are providing these comments, including on behalf of National Wildlife Federation, Canadian Environmental Law Association, and Toxics Free Great Lakes Network, on the draft binational strategy under Annex 3 of the Great Lakes Water Quality Agreement (GLWQA) – *Binational Strategy for Polybrominated Diphenyl Ethers (PBDEs) Risk Management* (March 2018, hereafter “PBDE Strategy”). We are offering several general observations and recommendations to the Parties on the PBDE Strategy, as summarized below.

1) A binational commitment to eliminate PBDEs requires Great Lakes Basin-specific actions and targets.

The proposed binational strategy on PBDEs outlines limited actions to address PBDEs levels in the Great Lakes beyond the measures that have already been committed on PBDEs by each country. It is also important that U.S. and Canada outline expected reduction targets for PBDEs in contrast to the current approach to outline intended measures. Without targets the ability to indicate successful and effective actions on PBDEs would be difficult to achieve.

2) Timelines are needed to ensure progress and accountability regarding proposed actions.

The PBDE Strategy does not include timelines associated with activities proposed, noting "While the GLWQA does not provide timelines for strategy implementation, the strategy should be reviewed periodically. Please note that during the time frame of re-evaluation, no new chemical nominations will be accepted." (Introduction of the strategy, p. 1). It is not clear what is meant by “no new chemical nominations” will be considered and for what period of time (“during the time frame of evaluation.”) Does this mean that everything is on hold including all

nominations for new chemicals of mutual concern (CMCs)? This is a disconcerting prospect. In addition, we argue that even though the GLWQA does not outline timelines in the measures to be considered, regular reporting is required, and having timelines would obviously help in assessing progress through Strategy implementation.

3) A binational commitment to pollution prevention actions is needed.

Table A in the PBDE Strategy references tracking pollution prevention efforts, but the focus is on the U.S. side (including via the Toxics Release Inventory), and no parallel efforts are proposed through the analogous National Pollutant Release Inventory (NPRI) in Canada. There is a role for pollution prevention activities to address gaps in management strategies. In Canada, PBDEs are prohibited for import, manufacture, use, sale and offer for sale of PBDEs, and products containing them. However, the regulation does not cover products that contain PBDEs when they are incidentally present or apply to manufactured items. Pollution prevention activities that could be undertaken should include consideration of the full life cycle of PBDEs in manufactured items to assess alternatives and apply informed substitution.

In general, pollution prevention efforts (and tracking thereof) should be binational, including as part of the broader commitment to achieve virtual elimination of PBDEs (as well as interim reduction goals).

4) The Parties need to highlight resource needs to carry out Annex 3 activities.

The PBDE Strategy notes that through the GLWQA, "...the Parties' respective obligations are subject to the appropriation of funds in accordance with their respective procedures." (Introduction section, page 1). Given the binational commitment the Parties have made through the GLWQA to address Great Lakes threats, including chemicals of mutual concern, it is important that the Parties highlight the importance of funding programs to meet objectives of the GLWQA. As with other CMC strategy documents, the PBDE Strategy lists regulatory and non-regulatory programs the Parties can pursue to meet objectives, and it is reasonable to ensure that those making decisions related to authorizing and appropriating funds recognize the importance of funding programs addressing PBDEs (and other CMCs in the Great Lakes Basin).

5) Potential regulatory actions should consider recent relevant actions.

The PBDE Strategy appropriately calls for review and issuance (or update) of federal regulations addressing PBDEs in both countries (Table A). However, the Strategy should include reference to additional recent actions in both countries that can support such activities. For example, the U.S. Consumer Products Safety Commission announced in September 2017 it would initiate a rulemaking under the Federal Hazardous Substances Act to consider banning non-reactive, non-polymeric halogenated flame retardants in four classes of consumer products, as well as convene a Chronic Hazard Advisory Panel under the Consumer Product Safety Act. Even if the

proposed actions may mainly effect other flame retardant chemicals, it is important to include such actions in the broader scope of regulatory activities that can be pursued in addressing PBDEs and other flame retardant chemicals in the Great Lakes.

In addition, the Strategy references recent activities under the U.S. Toxic Substances Control Act (TSCA). We recommend the Strategy include more information on two issues currently underway under TSCA – the potential for development of a rule prohibiting the manufacture of any of the three commercial PBDE mixtures (given the phase-out commitment was only made by individual companies previously involved in such production), as well as more specific information on the status of the use and exposure assessment of decaBDE (described on p. 8).

For Canada, further regulatory work is needed under the Canadian Environmental Protection Act (CEPA), including addressing the end of life management of products containing PBDEs.

6) Ensure surveillance and monitoring is sufficient to capture ongoing PBDE trends.

The Strategy reviews recent surveillance and monitoring work, including data showing general declining PBDE trends in Great Lakes biota, and generally at levels below health thresholds. In addition, the Strategy recommends that regular monitoring be replaced with “targeted surveillance” (p. 7). While we appreciate the importance of efficient expenditure of resources, we believe ongoing monitoring of PBDEs should be continued in many locations (to verify continuing progress), while also expanding the scope of monitoring to current use flame retardant chemicals of concern. Parties should keep in mind the potential uncertainties or changes involving PBDEs in the environment, including around poorly characterized sources, unexpected stabilization or even increase in levels in some areas (and understanding why levels are elevated in certain fish species or regions), and new information (e.g. regarding more susceptible populations) that may indicate potentially greater hazard than previously understood.

7) Ensure broader approaches are considered as part of programs to reduce PBDEs.

Even though the Strategy is focused on PBDEs, for which manufacturing in the U.S. has been phased out following voluntary agreements with manufacturers, it is still important to consider the broader context of chemical flame retardant use, including flammability standards and the extent to which they have contributed to ongoing use of specific flame retardants. The issue of considering the potential for alternative standards, as well as the importance of alternative approaches to meeting flammability requirements, have been noted in other recent publications, including the recent report by the IJC Water Quality Board, *Addressing Polybrominated Diphenyl Ethers in the Great Lakes Basin: Searching for Solutions to Key Challenges* (2017), which should be cited in the Strategy. A number of flammability standards developed (which may essentially lead to use of problematic chemicals, even if actual flammability benefits are not always clear) have created substantial barriers in efforts to avoid the use of toxic flame retardant chemicals despite alternative approaches to achieve fire safety.

8) Assess potential to revisit standards and approach to products, including in light of international agreements and programs.

The Parties should consider standards and frameworks used in international programs, and the extent to which domestic standards could be adjusted (i.e., more protective) as appropriate. In addition, the Strategy should address the issue of PBDE-containing products already in use in the GL basin, as well as the issue of preventing PBDE-containing products from import into the basin. In addition, the Strategy should emphasize the value in redesigning products so that the need for flame retardant chemicals is reduced or even eliminated, and products sold in the basin that contain PBDEs should be labeled as an educational tool and warning for government, industrial, commercial, and residential consumers.

9) Miscellaneous comments.

We have several miscellaneous comments on other aspects of the PBDE Strategy, as noted below.

Nomenclature: The PBDE Strategy generally uses consistent nomenclature for PBDEs, but authors should double-check. For example, the report generally uses “decaBDE” in reference to the fully chlorinated congener, though there is at least one exception. Also note on page 2 the use of “decabromodiphenyl ethers” for decaBDE, where the term should be singular (“ether”), given reference here is to the single congener rather than the commercial mixture.

Table 4: The table should include specific terms for permissible levels where appropriate (i.e., whether regulatory thresholds or voluntary guidelines (such as Threshold Limit Values). In addition, the authors should clarify language – i.e., for the AIHA air guidelines, it is not clear if the guidelines specifically reference PBDEs on airborne dust, or simply total PBDEs in the air (even if a substantial fraction of the PBDEs may be associated with particles).

Furthermore, the Agency for Toxic Substances and Disease Registry (ATSDR) minimal risk levels (MRLs) should be separately identified in the third column – i.e., whether considering inhalation exposure or ingestion exposure. In addition, the MRLs should be verified – i.e., the ATSDR *Toxicological Profile for Polybrominated Diphenyl Ethers (PBDEs)* identifies MRLs in some cases for “lower brominated” BDEs, rather than specific congeners or commercial mixtures. And in at least one case, the MRL for such BDEs (for intermediate duration oral exposure) is not reflected in Table 4 – and the value is well below any value listed.

In summary, we appreciate the opportunity to provide these comments on the PBDE Strategy. As we noted last year in comments on two earlier strategy documents (addressing PCBs and HBCD), it is important that these early strategy documents set the right tone for activities to be undertaken to meet objectives for chemicals of mutual concern under the Great Lakes Water Quality Agreement. We believe addressing the comments above can result in actions more

likely to address ongoing concerns with polybrominated diphenyl ethers in the Great Lakes Basin.

Sincerely,



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