

August 31, 2015

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Dear Ms Hyde and Ms Humphrey,

The Great Lakes are a continental and global treasure – their waters sustain millions of people, thousands of communities, a vibrant economy and a truly remarkable ecosystem. Harmful and nuisance algal blooms caused by excess nutrient runoff are among the top threats to the Great Lakes, posing risks to drinking water supplies, quality of life and economic vitality. Nowhere is this more obvious than in the Lake Erie basin, which generates \$12.9 billion in annual economic impact from tourism and recreation in Ohio alone. Ontario’s commercial fishery on Lake Erie, which accounts for about 80 percent of the total value of the province’s \$234 million Great Lakes commercial fishery, could be hit especially hard since it relies heavily on species that are vulnerable to the effects of algal blooms.

The re-emergence of harmful and nuisance algal blooms in Lake Erie is a stark reminder of the need for ongoing vigilance and steadfast commitment to the protection and conservation of the Great Lakes. Despite decades of effort and progress by local, state, provincial and federal governments – and a network of non-government organizations (NGOs) – we have failed to keep pace with major sources of pollution such as stormwater runoff, in particular from agricultural lands. As a result, decades of work to revitalize the economy, environment and quality of life in the Great Lakes region are at risk.

These comments on the *Recommended Binational Phosphorus Targets to Combat Lake Erie Algal Blooms* represent the shared perspective of 13 groups from Canada and the United States that are part of a growing binational network of local, regional and national NGOs working together to protect and restore the health of the Great Lakes. We appreciate the hard work of the GLWQA Nutrients Annex Subcommittee in drafting these targets; they are a critically important step in the broader effort to effectively address harmful and nuisance algal blooms in Lake Erie.

Our comments are organized around the questions posed by Environment Canada and the U.S. Environmental Protection Agency on their consultation websites. Reflecting the binational nature of the organizations signatory to this submission, we have chosen to respond to the questions included on both the Environment Canada and the U.S. EPA consultation websites,

which as you are aware, are presented slightly differently. Recognizing that watersheds, rivers and lakes often cut across jurisdictional boundaries, we respectfully submit our comments out of shared concern for the future of Lake Erie, and in a spirit of cooperation, collaboration and common cause for protecting and restoring the health of this remarkable and precious water body.

## Comments on consultation questions

### Question (common to both Canada and US consultations)

What do you think about the recommended phosphorus reduction targets to reduce cyanobacteria blooms in the western basin to non-severe levels most of the time, minimize hypoxia in the central basin of Lake Erie, and reduce nearshore cyanobacterial blooms?

- We applaud the GLWQA Nutrients Annex Subcommittee for recommending strong phosphorus reduction targets for Lake Erie. The 40% reductions in total phosphorus recommended for the western and central basins reflect scientific consensus around the scale of reductions that will be needed to significantly reduce the prevalence and impact of harmful and nuisance algal blooms and hypoxia problems, and are consistent with the commitment by the governors of Ohio and Michigan and the Premier of Ontario to reduce phosphorus loading by 40% to the western basin of Lake Erie by 2025. As discussed in greater detail below, we believe that the 40% targets should also be established for the Eastern Basin, as least on an interim basis.
- We believe that it is important that targets established for all basins be time-bound, as per the commitments made by the governors of Ohio and Michigan and the Premier of Ontario noted above. We urge the Subcommittee to incorporate this same 2025 timeframe into their final targets for Lake Erie (i.e., 40% reduction in phosphorus loading to each of the three basins by 2025). Incorporating timelines into targets maintains a sense of urgency to drive action, and strengthen accountability for achieving progress and results.
- We support a flow weighted mean concentration (FWMC) mechanism for tracking the 40% reduction goals in the western and central basins. We believe this mechanism should be mandatory and not simply recommended. A FWMC provides an accurate picture of the phosphorus contribution from a given tributary, controlling for natural factors such as shifts in annual precipitation, and will provide important benchmarks for tracking progress in phosphorus reduction.
- We support the adaptive management approach that underpins the Subcommittee's work, particularly given uncertainties related to climate change and gaps in research and monitoring, and we are pleased to know that a specific adaptive management plan is under development. The plan should set out clear processes (and timelines, where feasible) for addressing knowledge gaps and for incorporating new information into targets and actions (i.e., how decisions to adjust nutrient reduction targets and / or alter action plans will be made, and by whom).
- Specific issues that warrant attention as targets are finalized and the adaptive management plan is developed, include:

- An understanding of all the sources of phosphorus and nitrogen in each of the tributaries leading into Lake Erie and, at the very least, differentiating between point sources, chemical fertilizers, biosolids, livestock waste, combined sewer overflows, and septic tanks. This information will help the states and Ontario ensure their domestic action plans lead to meaningful results by allowing them to identify with confidence the priority watersheds and address the biggest sources of phosphorus within those watersheds.
- The impact of increasingly common and intense high flow events on phosphorus loading to the lake. It is our understanding that phosphorus concentration is measured in most tributaries only once per month or so (with notable exceptions like Maumee and occasionally, the Grand River). More intensive, targeted monitoring is needed to track phosphorus inputs during high flow events, to assess the impacts of actions taken to reduce inputs during these important periods, and to adapt targets and actions if and as needed.
- Improved understanding and sharing of information on lake-wide phosphorus dynamics, including the influence of lake currents on phosphorus transport, and the role of sediments in contributing phosphorus to lake water. Regarding the latter, there is concern that reductions in phosphorus loadings from tributaries and shoreline sources may not result in concomitant improvement of oxygen concentrations in the hypolimnion of the central basin (i.e., hypoxia problems), because of the sediment phosphorus contribution.
- Climate change projections of lake temperature increases to anticipate how changes in water temperature will impact algal growth.

**Question (Canadian consultation only, posed as question #2)**

What do you think about our not recommending phosphorus reduction targets for the eastern basin of Lake Erie at this time?

- The consensus among the Canadian and US groups signatory to this submission is that an interim 40% phosphorus loading reduction target should be established for the eastern Lake Erie basin. The Annex 4 Objectives and Targets Task Team Final Report to the Nutrients Annex Subcommittee clearly states that the eastern basin faces a serious Cladophora problem.<sup>1</sup> Consistent with our comments above regarding western and central basin targets, we believe that the eastern basin target should be time-bound to 2025.

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<sup>1</sup> "It is clear that phosphorus load reductions will be necessary to reduce nuisance levels of Cladophora in the nearshore waters of the Eastern Basin of Lake Erie." p. 36.

- We appreciate that gaps in scientific understanding and inadequacy of available monitoring pose challenges in recommending a firm reduction target for the eastern basin at this time, and we understand that new information is expected in March 2016 to address some of the knowledge gaps needed to do so. However, we believe that it is more effective to establish a 40% interim target for the eastern basin now, and to adjust that target as needed when new information becomes available. This approach is consistent with the precautionary principle and the adaptive management approach.
- Setting this interim target for the Eastern basin is important for two reasons: doing so sends an important message that attention is being directed to addressing algal bloom and hypoxia problems on a lake-wide basis; and, the establishment of targets is a driving force for the development and implementation of actions to reduce phosphorus pollution. Should the Subcommittee choose not to include a target for the eastern basin at this time, we ask that they set out a clear timeframe for completing the necessary research, monitoring and modeling, and that they establish a firm phosphorus loading reduction target for the eastern basin as soon as possible.

**Question (slight variations in wording in Canada and US consultations)**

What do you think about the watersheds we identified for phosphorus reduction? (Canada, Question #3)

What do you think about the watersheds that are recommended for phosphorus reduction? (US, Question #2)

- We understand and appreciate the focus on prioritizing watersheds for phosphorus reduction to address algal blooms in nearshore waters. As areas closest in proximity to beaches, marinas and shoreline communities, addressing algal blooms in the nearshore will be important for dealing with risks to human health and local economic development. That said, we urge a tiered approach to reducing phosphorus flowing into Lake Erie. Any plans developed should ensure that the highest priority watersheds are dealt with first before moving to watersheds that are providing less phosphorus to receiving water bodies and eventually Lake Erie. Focusing on the highest priority watersheds first will ensure that all stakeholders are working efficiently and effectively together to undertake all that can physically be done in particular watersheds before moving to other high priority watersheds or watersheds of lesser priority. It is clear that additional priority watersheds will need to be identified for action to achieve phosphorus reduction targets and ecosystem objectives in a timely manner.
- Given its known and substantial contribution of phosphorus to the Lake, we believe that the Grand River (Ontario) should be clearly identified as a priority watershed, regardless of when a reduction target is established for the eastern Basin.

- We urge the Subcommittee to include a timeline and process for selecting additional priority watersheds when issuing its final nutrient reduction targets. The process for selecting additional priority watersheds should consider factors and impacts beyond nearshore waters, and should focus on watersheds that contribute most significantly to phosphorus loadings that result in toxic algal blooms in the western basin, hypoxia in the central basin, and *Cladophora* in the eastern basin.
- Finally, we believe the Task Team should include finer scale, sub-watershed prioritization based on the best available science to focus action on high phosphorus contribution areas; this information will be important when establishing watershed-based loading reduction allocations and developing Domestic Action Plans.

**Question (US consultation only, posed as question #3)**

What ideas do you have to help us achieve the phosphorus loading and reduction targets?

- Enhanced monitoring and modeling will be critical to identifying priority watersheds and sub-watersheds for targeting nutrient reduction actions, for assessing their effectiveness, and for tracking and reporting on overall progress toward achieving nutrient reduction targets and ecosystem objectives.
  - As noted above, monitoring in the tributaries to identify sources of nutrients, and targeted monitoring of phosphorus during and immediately following high discharge events to the lake will be critical to tracking phosphorus inputs, assessing the impacts of actions taken to reduce inputs during these important periods, and adapting targets and actions if and as needed.
  - The task team report explains how FWMCs at tributary mouths should be used as a benchmark to track progress in load reductions, yet at the same time, the report notes, “We have some data on the PP and DRP fractions of TP in other Lake Erie tributaries, but for those not monitored by the Heidelberg University program the data are meager. We also have minimal data on the ultimately BAP fraction of the PP in those tributaries,” (p. 42). Therefore, the parties should develop a robust monitoring strategy for areas where data is lacking, in order to track the concentrations for each tributary.
  - The parties should not focus solely on tributary mouths when tracking progress in meeting load reductions. The parties should specify, for each priority tributary, the necessary upstream monitoring needed to identify where phosphorus inputs need to be reduced, prioritize resources for reduction efforts, and understand the

effectiveness of actions to reduce phosphorus loading. This is consistent with our suggestion above regarding finer scale, sub-watershed prioritization efforts.

- Additionally, the parties should provide a cost estimate necessary to establish the requisite expanded monitoring needed to effectively track load reductions.
- Identifying and scaling up solutions that work, rather than reinventing the wheel or developing new programs from scratch, can speed up action and progress while saving time and money. Rather than relying on individual states and provinces to sort out successful programs from unsuccessful ones, the Subcommittee should inventory solutions known to work and provide guidance to Lake Erie states and the Province of Ontario for their effective implementation. This is not to suggest that new and innovative solutions should not be considered and developed; but rather, that there is an opportunity to move quickly on action by scaling up practices that work (e.g., Wisconsin’s Numeric phosphorus criteria; experiences in Ontario and Wisconsin with water quality trading; Ontario’s and Ohio’s prohibition of spreading manure and fertilizer on frozen, snow-covered, and saturated ground). We believe that the governments of the United States, Canada, and the Great Lakes states and provinces should establish funding to support coordination of stakeholders at jurisdiction & watershed scales (to complement implementation funding) in order to enhance sharing of experience and practices.
- Groups signatory to this submission look forward to continued engagement and opportunities to propose specific actions for phosphorus loading reductions as Domestic Action Plans are developed. We also recognize that some attention is already being directed to specifying actions for nutrient reductions; notably, the Interim Joint Action Plan for Lake Erie produced by the Great Lakes Commission’s Lake Erie Nutrient Targets (LENT) Working Group. While we support the joint actions proposed by the LENT, we believe that Domestic Action Plans need to reach beyond these actions to ensure nutrient reduction targets are achieved in a timely manner. Additionally, Michigan, Ohio and Ontario each committed to developing their own implementation plans to reduce phosphorus by 40 percent. These will undoubtedly inform the domestic action plans and some signatories to this document submitted recommendations to the parties that may be useful to review and incorporate.

**Question (slight variations in wording in Canada and US consultations)**

Is there anything else you'd like to tell us? (Canada, Question 4)

Is there anything else you'd like to share about the draft nutrient targets for Lake Erie? (US, Question 4)

- The Task Teams should select specific load allocations for each tributary prior to the release of the Domestic Action Plans. While Annex 4 wisely calls for the establishment of load

allocations for all of Lake Erie by 2016, specific watershed allocations will ease the development of Domestic Action Plans by providing clear, localized goals. Specific targets will also prevent confusion over each region's responsibility towards meeting the broader 40% reduction target for Lake Erie.

- Load reductions targets are an important step towards managing the harmful effects of algal blooms, but clear timetables and milestones are needed to provide assurance of real progress towards the 40% reduction targets. The Subcommittee can then incorporate these timetables and milestones into specific programs, providing consistent timing within all of the components of a given Domestic Action Plans.
- The groups signatory to this document are willing and able to collaborate with the Nutrient Annex Subcommittee to complete the Domestic Action Plans, and to help ensure that the Plans lead to the achievement of Annex 4's ultimate objectives (e.g. the reduction of algal blooms to 2012 conditions in nine out of ten years). The Subcommittee should consult with the groups signatory to this document at every step in the development and implementation Domestic Action Plans.

### **Concluding remarks**

We appreciate the opportunity to provide input on the recommended binational phosphorus targets for Lake Erie. We look forward to the seeing our concerns and suggestions reflected in the final targets in February 2016, and to ongoing engagement as attention shifts to the development of the Domestic Action Plans.

We encourage the Subcommittee to begin development of Domestic Action Plans as soon as possible to ensure that they are completed by, or ideally before, the 2018 deadline. We are eager to provide input into their development, to support their implementation through partnerships and collaboration, and, ultimately, to celebrate the achievement of these targets and the restoration of the health of Lake Erie.

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