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Re: Comments on Ontario's Proposal on Reducing Phosphorus to Minimize Algal Blooms in Lake Erie (EBR #012-8760)

The Great Lakes Protection Act Alliance ("Alliance") works to help achieve the purposes of the *Great Lakes Protection Act, 2015* ("Act"), which are:

a) To protect and restore the ecological health of the Great Lakes-St. Lawrence River Basin; and
b) To create opportunities for individuals and communities to become involved in the protection and restoration of the ecological health of the Great Lakes-St. Lawrence River Basin. (s1(1), *Great Lakes Protection Act, 2015*)

To achieve this goal, the Alliance will:

- Act as a catalyst in implementing the Act;
- Encourage utilization, by governments, individuals, communities, and public bodies, of the tools enabled in the Act; and
- Monitor and encourage government progress toward achieving the purposes of the Act.

The undersigned members of the Alliance are writing today regarding Ontario's Proposal on Reducing Phosphorus to Minimize Algal Blooms in Lake Erie (EBR Registry Number: 012-8760).

We applaud Ontario's leadership in being the first of the Lake Erie western basin jurisdictions to propose enshrining phosphorus reduction targets under legislation, and strongly encourage them to move forward with the plan as quickly as possible. It is especially encouraging that the proposed target includes timelines:

> Ontario is adopting a target of 40 percent phosphorus load reduction by 2025 (from 2008 levels), using an adaptive management approach, for the Ontario portion of the western and central basins of Lake Erie, as well as an aspirational interim goal of a 20 percent reduction by 2020.

We see this proposal as necessary step toward fulfilling the commitment the Ontario Legislature made through the *Great Lakes Protection Act, 2015* to set target(s) for reducing algal blooms within two years of the legislation's passage. Further comments about the framing of the proposed target are included below.

It is important, however, to recognize that the proposed target is only a first step, and that effective and ongoing action will reduce phosphorus loads from point sources, nonpoint source sources, and

agricultural sources. Actions relating to natural heritage and science, monitoring and public reporting are also listed. Further, we expect that Ontario will also move ahead with target(s) addressing algal blooms in other parts of the Great Lakes - St Lawrence River Basin (as noted below) and addressing other threats throughout the Basin.

Ontario's proposal states that "With approximately 75 percent of the Lake Erie watershed in Ontario in agricultural production, farmland is considered a substantial contributor to the total phosphorus load." As such we are most concerned that Ontario's approach to agricultural sources is overly reliant on voluntary adoption of agricultural best management practices. Without more ambitious action, we expect Ontario will continue to be largely unsuccessful in reducing pollution from croplands, greenhouses and livestock operations in sufficient quantities to curb hypoxia in Lake Erie's central basin, and algal blooms in Lake St Clair and other localized locations such as the Erie shoreline near Leamington.

We are encouraged that Ontario recognizes the level of activity that is required to meet the proposed target:

> Ambitious and aggressive actions to reduce phosphorus loads are needed to restore and protect the lake's water quality and ecological health.

We recommend that education and outreach to the agriculture sector include rationale that supports basin-wide change and clarifies the need for action across the Ontario portion of the Lake Erie basin (or watershed). The province should emphasize that action is required not only to address harmful algal blooms in the western basin (which is predominantly caused by phosphorus loading from the Maumee watershed), but also to improve local water quality in streams and rivers, improve groundwater quality, improve soil health, enhance long term food security, and address localized blooms in Lake St Clair, Leamington and other locations along the shoreline. More education is needed to ensure the community understands that priority tributaries require a 40% reduction in phosphorus loads to address algal blooms along the shorelines and in Lake St. Clair and that action will be required to address eastern basin cladophora.

We are in agreement with Ontario that nutrient reduction efforts initially focused on Lake Erie must be directed to other lakes within the Great Lakes - St Lawrence River Basin:

> Although Ontario's current nutrient reduction efforts are focused on Lake Erie, future efforts will be directed to Lake Ontario as the next priority Great Lake.

While Lake Erie is the canary-in-the-coal mine, over the past decade, algal blooms have re-appeared in Lakes Huron and Ontario, as well smaller lakes and tributaries in the Great Lakes - St Lawrence River Basin. While each water body has its own unique conditions and constraints to consider, the lessons learned in Erie must be applied to other lakes and tributaries to ensure the long-term health of the broader watershed.

Comments on Proposed Actions

The final Action Plan should include specifics about the tactics Canada and Ontario will take to address the major sources of pollution. **We need specific programs and policies that include common-sense regulations on farming practices, green infrastructure investments to reduce stormwater pollution, upgrading and fixing failing home septic systems, and curbing phosphorus discharge from wastewater treatment plants.** Proposed tactics should be detailed, include clear implementation timelines, and

identify which authorities will be responsible for implementation. The Action Plan should describe how local, provincial/state and federal programs will work together to achieve nutrient reductions. Below, we provide comments on the various actions listed in the Ontario proposal.

Point Sources

We support the proposed actions to establish a legal effluent discharge limit for all municipal sewage treatment plants (STPs), to upgrade secondary STPs, and promote optimization of treatment plant performance.

In addition, we make the following recommendations:

- Require municipalities in the Lake Erie watershed to develop and implement Pollution Prevention Control Plans with new actions aimed at reducing Combined Sewer Overflows (CSOs) and sewage bypasses. These plans should include mandatory reporting requirements that are publically accessible and include reduction targets.
- Ontario should work with municipalities to encourage them to submit infrastructure funding applications that include green infrastructure elements to reduce pressure on stormwater systems.
- Phase out residential phosphorus fertilizer application within five years (including on golf courses). See regulations in Michigan and New York for examples of laws that prohibit phosphorus fertilizer application unless the lawn is new or has a proven phosphorus deficiency.

Nonpoint Sources

We are encouraged that Ontario recognizes that green infrastructure is part of the solution to reducing nutrient pollution:

> Ontario is working with developers and others to promote and support the use of green infrastructure and low impact development (LID), including clarifying and enhancing policies, and developing green standards. Ontario is in the process of drafting a LID guidance manual that will assist proponents in implementing their efforts. The draft manual is expected to be available for public comment in early 2017.

We support such actions and encourage the province to work with the federal government to go further in its support of green infrastructure to:

- Integrate *living* green infrastructure into the provincial and federal green infrastructure framework, including the federal government's new infrastructure plan. This will help to ensure sustainable and cost-effective infrastructure spending
    - Living green infrastructure can be defined as: "Natural and human made elements that provide ecological and hydrological functions and processes. Green infrastructure can include components such as natural heritage features and systems, parklands, stormwater management systems, street trees, urban forests, natural channels, permeable surfaces, and green roofs."
    - Work with municipalities to encourage more proposals with green infrastructure, as defined above, through traditional infrastructure funding processes.
    - Green infrastructure should be a priority for stormwater and CSO management programs and policies, and green infrastructure technologies and approaches should be brought into mainstream stormwater management

Agricultural Sources

We are encouraged by Ontario's recognition of the need to focus on agricultural sources, as it is the primary contributor to the province's total phosphorus load.

We agree that education and outreach are important tools in working with farmers to reduce phosphorus runoff and support those tools as outlined in the proposal.

As well, as much as the province has led the way enacting laws to address agricultural pollution, such as the *Nutrient Management Act*, more protections will be necessary to achieve the phosphorus reduction goal.

Ontario should work with the agricultural community to ensure they are following basic common sense agricultural practices. From our perspective, such practices would be consistent with the following principles:

1. Adherence to appropriate agronomic rates
    - Science-based application of nutrients based on uniform standardized soil test sampling, methods and protocols
2. Regulatory compliance
    - Ensure compliance with existing regulations including the ban on spreading of manure on frozen and snow covered ground
3. Accountability and proportionality
    - Ensure that contributors are responsible for their share of phosphorus loading

Significant reductions could be achieved with agricultural practices that abide by these principles. Such an approach would help reduce costly and unnecessary fertilizer use, protect soil health, improve water quality and recognize efforts to reduce phosphorus loading - things that all interests should be agreeable to.

<u>Greenhouses</u>

Effluent from greenhouses, especially vegetable growers, is particularly a problem in the Leamington tributaries watersheds. Without efforts to reduce phosphorus loading from greenhouses in this area, it is unlikely that proposed target will be met in the Leamington priority watershed. Effluent from greenhouses in this area has high concentrations of Dissolved Reactive Phosphorus that often significantly exceed provincial water quality standards. In 2012, the MOECC reported that wastewater from 65 per cent of greenhouse operations around the Leamington, Ontario were polluting Lake Erie with levels of nitrogen and phosphorus that exceeded water quality objectives set out in provincial and federal guidelines. These results indicated that the majority of greenhouse operations were not adequately managing their wastewater.

- We recommend an "adaptive management" approach (including triggers and consequences) for greenhouse regulations. This is to allow for adjustments to regulations that may become necessary based on monitoring results and new scientific information.
- Support programs and innovations that investigate opportunities for nutrient recovery from greenhouses
- Create incentive programs for greenhouses that meet or exceed standards on or before set timeline
- Look for opportunities for the greenhouses to access municipal wastewater systems

We recommend that Ontario evaluate its policy framework to ensure it supports implementation of the above principles. Ontario should then consider what changes are required to its policies, plans and practices, as well as its budgets, and resourcing plans to ensure farmers are adequately supported and encouraged to follow such practices. The final step is to measure and track progress, which is described in further detail below.

Natural Heritage

We agree with Ontario when it says that "actions to improve and restore natural areas provide enhanced opportunity for improving the overall health of Lake Erie." But beyond this, we believe fully protecting and restoring wetlands in the Lake Erie basin is incredibly important in being able to meet the proposed phosphorus load target. Weak protections for natural heritage features, including wetlands, will make achieving the proposed target more costly because we will need to increase efforts in other areas to compensate for wetland loss. For example, the few existing wetlands in the Thames watershed are providing significant economic benefits by improving water quality in areas where little other natural filtration occurs. Any activities that jeopardize the integrity of those wetlands could have significant downstream and watershed-wide impacts that include significant contributions to the toxic algal blooms and hypoxia events in Lake Erie. Natural heritage features also have numerous other benefits for communities including biodiversity, habitat, flood control, etc. Further rationale for protecting wetlands with respect to phosphorus reduction is included in the International Joint Commission's Lake Erie Ecosystem Priorities (LEEP) report.

Overall, the provincial and federal governments cannot rely on Ontario's proposal "A Wetland Conservation Strategy for Ontario 2016-2030" to protect wetlands in the western basin of Lake Erie. Given the weak overall targets, the absence of commitment to net gain, the lack of commitment to maintain or enhance protections for Provincially Significant Wetlands, and the failure to earmark areas for government investment, it is highly unlikely that the proposed strategy will be adequate to meet the Premier's commitment to reverse wetland loss by 2025 and thereby assist with addressing nutrient loadings in Lake Erie.

Ontario should adopt a comprehensive wetlands policy that improves protection of all of Ontario's wetlands. We recommend a number of changes to Ontario's wetland strategy that are required to reduce or eliminate further wetland loss in the Lake Erie watershed:

- As stated in the LEEP report, Ontario should "commit to the goal of a 10% increase by 2030 beyond current levels of coastal wetland areas in the western basin of Lake Erie to reduce nutrient pollution and promote biodiversity (an increase of about 1,053 ha or 2,600 acres)."
- Ontario's policy should ensure protection for all wetlands in the Lake Erie watershed to the fullest extent possible. The western basin has already experienced significant loss of wetlands and the few existing wetlands should be off limits to mitigation and offsetting framework that would allow for land use change and drainage.
- All provincially significant wetlands in the Lake Erie watershed should be evaluated and strategically mapped (with edges delineated) within one year of the DAP coming into force. In the meantime, all wetlands in the western Lake Erie basin should be considered provincially significant until evaluation indicates otherwise.
- No permits should be given to alter or remove wetlands unless the area has been delineated and evaluated

- Increase funding for restoration and conservation of wetlands

Science, Monitoring and Public Reporting

We are encouraged to see that Ontario recognizes the importance of reporting regularly:

> Ontario will work with its partners to provide an annual update on Lake Erie through its website, and produce a progress report every three years.

Monitoring and other efforts to improve cross-jurisdictional understanding of the problem must inform local actions, as well as a framework for tracking progress. The binational targets identify phosphorus loading amounts for the mouths of the major tributaries flowing into Lake Erie. We recommend a sub-allocation approach to implement the proposed target. These target amounts should be sub-allocated to the smaller watersheds within each of those tributary systems. A sub-allocation of the targets would provide a nested approach so that loading from upstream watersheds aggregate to meet the downstream target. This framework would make it simpler to identify, quantify and prioritize nutrient sources in smaller areas. In addition, a sub-allocation would provide a framework for tracking progress at a smaller scale, allowing for swifter, more focused intervention when needed.

The sub-allocation approach would best be complemented by watershed plans to help achieve the proposed target. Solutions should be developed with a holistic, watershed approach in mind. This approach can build on the existing watershed plans developed by conservation authorities, but would likely be more detailed by evaluating each subwatershed to understand it would take to meet the local sub-allocated targets based on the area's unique geological characteristics and function.

Ontario should also track actions being taken to reduce phosphorus loading in the lake and subwatersheds. Reductions from all phosphorus sources should be tracked including (but not limited to) implementation of agricultural best management practices so that adoption rates can inform the adaptive management process.

Adaptive Management

We appreciate Ontario's recognition of the need to continuously assess the proposed target using an adaptive management approach:

> Ontario recognizes that these targets will need continual assessment based on best available information. To that end, Ontario will work with its partners and apply an adaptive management framework so that targets and actions could be refined as needed based on monitoring, performance measures, and evolving science and information.

We encourage the province to put emphasis on the need to measure and track the success of the actions being undertaken to reduce phosphorus.

Implementation

Effective and ongoing action will be needed to achieve the proposed target. In the final Canada-Ontario Action Plan for Lake Erie, Ontario and Canada need to provide enough detail to ensure accountability for implementation of the plan. This includes details regarding roles and responsibilities, funding plans and transparency around reporting.

Funding and Resources Allocated

Little is said in the EBR posting about how much the proposed initiatives will cost or how Ontario will fund the initiatives other than to leverage the Ontario Great Lakes Agricultural Stewardship Initiative and Phase 1 & 2 of the Clean Water and Wastewater Fund.

While we agree leveraging funds and resources may help prioritize and redirect limited resources, Ontario's proposal lacks clear direction on what the criteria will be used to determine priority projects. We recommend Ontario explain how it will adequately leverage these funds for the purpose of protecting Lake Erie, publish criteria for making decisions and prioritize programs and practices. **It is also clear that funds and staff resources in addition to those supplied through existing programs will be required. Ontario needs to create a long term comprehensive funding plan as an addendum to the final Action Plan.** Funding plans should extend until 2025, subject to changes according to an adaptive management approach.

Ontario should additionally undergo an evaluation of total investments in western Lake Erie watershed since 2008 to determine if past and ongoing investments have actually decreased phosphorus loads, and if they are cost-effective. For example, some of the Ontario Great Lakes Agricultural Stewardship funding provided cost-share assistance for adopting best management practices, including soil erosion control structures, cover crops, residue management, buffer and shelter strips. It remains unclear how well these practices have worked to reduce phosphorus loading at the watershed scale.

Comments on *Great Lakes Protection Act, 2015* Targets

As stated earlier, our organizations are very supportive of setting quantifiable, time-bound commitments for phosphorus reductions under the *Great Lakes Protection Act, 2015*. We agree that they should be the same target(s) as set under other initiatives including the Great Lakes Water Quality Protocol of 2012, the Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health of 2014, the Western Basin of Lake Erie Collaborative Agreement, and the Joint Action Plan with the bordering U.S. Lake Erie States through the Great Lakes Commission.

We appreciate that work on an eastern basin target is ongoing: "At this time, a target for the eastern basin has yet to be established and requires further scientific assessment. Ontario is participating in the development of this eastern basin target." We recommend that any eastern basin target(s) also be quantifiable and time bound and that, once consulted on and finalized, they should be adopted under Part IV subsection 9 (2) of the *Great Lakes Protection Act, 2015.*

Conclusion

Our organizations appreciate the opportunity to provide these comments meant to improve Ontario's final Action Plan, and to support the setting of nutrient targets under the *Great Lakes Protection Act, 2015*. As we initially stated, Ontario's actions need to provide a clear path forward to achieving the proposed target, so it can ensure Lake Erie provides clean drinking water and a safe, healthy environment that supports fishing, boating, swimming and other various uses of millions of Canadians.

Sincerely,

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