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**Canada-Ontario Draft Action Plan (DAP) on Lake Erie Phosphorus Reduction:
Partnering in Phosphorus Control (EBR Registration Number: 012-9971)**

Grow Ontario Together (GOT) is a collaboration of agriculture organizations that recognize the need to work together – with each other, with the public, with environmentalists, with municipalities, concerned citizens and with governments – to provide leadership that supports the triple bottom line for Ontario:

- A healthy environment.
- A vigorous economy.
- And strong, healthy communities.

As leaders in the Agriculture sector in Ontario we acknowledge the phosphorus problem and are committed to providing the leadership required to resolve it.

Healthy soils and clean water are vital to the communities in which we live and work, and to the business of farming. The farming community understands that the ecological health of Lake Erie and all the Great Lakes is vital to the health of Ontario and its citizens. Ontario agriculture is proud of its role as a global leader in environmentally sustainable farming practices, while continuing to supply increasing amounts of safe, nutritious and affordable food for our growing population.

The Grow Ontario Together collaboration is confident that the ecological health of the Great Lakes and its watershed can be protected and restored through continued stewardship efforts, targeted research, new and innovative technology for wastewater and storm water management, and a commitment to managing the watershed and its resources in a sustainable manner.

Grow Ontario Together has taken a leadership role in the OMAFRA Agricultural Working Group along with all other agriculture associations. The Working Group includes three subcommittees: Cover Crops, Nutrients, and Research Groups. We believe that these committees provide OMAFRA/MOECC with an invaluable resource and should continue to play an active role in the discussion with governments to identify priority actions and map out an adaptive management and implementation planning.

The following comments reflect our collaboration's views and are organized into the following categories:

1. Defining and understanding the problem.
2. Highlighting actions to date and further commitments.
3. Governance of the Adaptive Management Framework.
4. Considerations on the multi-barrier approach to mitigations including rules, best practices, compliance structure, governance and incentives.
5. Response to other DAP consultation questions
6. High-level summary of general Grow Ontario Together comments

1. Defining the problem – characterization of the science within the DAP

Grow Ontario Together believes the problem definition of phosphorus in Lake Erie is done in a fair manner supported by science. The issues with Lake Erie are complicated by nature as they involve complex interactions between nutrients and the biological environment along with interrelated chemical pathways on land, in soil and in the lake itself, in addition to some new invasive species.

Contributions of phosphorus come from the natural landscape, historical sediment loads, and contributions from both urban and agricultural sectors. The drainage area of the entire Lake Erie basin is large at 55,000 square Kilometers 33% draining from Ontario and 66% from US land areas, but three of the four major inflows are into the shallow Western Basin which makes it most susceptible to algal blooms of all the Great Lake areas.

Shallow, warm and nutrient enriched inflows into the small area of the Western Basin of Lake Erie make its situation unique from any other in the Great Lakes system. Governance over the drainage basin is as complicated as the biology, managed by two federal governments, five US states and the province of Ontario, so we can all see, that even if solutions were self-evident (which they are not) the road to implementation will be complicated.

Phosphorus is a natural element that is required at certain levels to make plants and animals flourish and grow. It is an important component of both fertilizers and animal feeds, but as managers of these agricultural production systems there is a growing understanding of how phosphorus moves through the environment particular in soil and water and the potential role in Lake Erie eutrophication (algal blooms) that phosphorus loss from our agricultural systems through erosion, runoff from storm events or during the spring thaw present could present to the Lake system.

Armed with this better understanding of the issues surrounding nutrients, and supported by good science and an adaptive framework with meaningful participation by all partners, reductions in phosphorus runoff and loading should be achieved.

Phosphorus is found within a number of specific agricultural processes; it is a component of animal feeds and consequently manures; it is required to make plants grow, and is a vital component of plant fertilizers, used in both field and greenhouse production of grains, beans, forages, vegetables and fruit production.

The Grow Ontario Together coalition agrees with the proposed guiding principles of the Draft Ontario Domestic Action Plan. Policies and programs

aimed at reducing the agricultural-source phosphorus load should be based on the following four principles:

- a) Science based,**
- b) Continuous improvement**
- c) Shared responsibility and**
- d) Economically sustainable.**

In addition, policies and programs should be proportional to the magnitude and significance of the issue in contributing to the overall agricultural source Ontario phosphorus load.

Moreover, as the GOT collaboration has stated before, long term monitoring is a critical part of the overall effort to restore the health of the Great Lakes. An integrated monitoring network across all jurisdictions in the Lake Erie basin will be necessary to assess progress. An integrated network is necessary to not only support ongoing measurement of progress towards compliance with the adopted targets, but also to provide sufficient information to support an adaptive management approach. Limitations of current monitoring networks highlight the need for all jurisdictions to undertake an assessment of current monitoring capabilities and identify gaps in order to align water quality monitoring with the adopted targets to meet the ecosystem objectives called for in the Agreement. Establishing an accurate baseline will be key to achieving measurable progress.

2. Highlighting Actions and commitments to date

Q: Many agencies, stakeholders, and other partners have a role in reducing phosphorus loadings to Lake Erie. What actions does your organization/community plan to undertake as part of the Action Plan?

GOT recognizes the importance of sustainable growth and production practices and the importance of protecting our natural resources for future generations while continuing to produce safe, high quality food for Ontario and our trade partners.

The commodity groups that form the GOT collaboration will be submitting more detailed descriptions of their activities which we hope can be highlighted as success stories in the next version of the DAP.

GOT is committed to continued leadership on this important issue. This includes:

- Participation in “Timing Matters” initiative with OMAFRA and Ontario agriculture commodity groups to achieve behaviour change towards proper timing of manure application and avoid application on frozen and snow-covered ground.
- Participation in the initiative led by the Ontario Federation of Agriculture and the Great Lakes and St. Lawrence Cities Initiative to reduce phosphorus loss from farmland by improving water management on private land and in the municipal drainage system.
- Active promotion of existing nutrient management standards and 4R practices, including the environmental, social and economic benefits of maximizing nutrient use efficiency and following existing nutrient management standards.
- Promotion of cover crops.
- Promotion of established and/or innovative best practices.
- Promotion of existing and upcoming stewardship and cost-share programming.
- Ongoing research efforts to develop decision making tools to help producers determine the most cost-effective way to store nutrients up to the time when the crops need them (and keep nutrients off the ground during the non-growing season).

Agriculture has made great advances in supporting healthy soils and clean water and is taking its responsibility seriously by providing leadership in addressing further commitments. It is gratifying to note that the DAP acknowledges that we are not starting from scratch – we are building on some successful initiatives to enhance phosphorus reductions.

Voluntary participation in agricultural and rural stewardship programs has a long history of success. The OSCIA’s Great Lakes Agricultural Stewardship Initiative

(GLASI) and the long running Canada-Ontario Environmental Farm Plan's suite of programs (EFP) are successful because they combine education with incentives to adopt Best Management Practices (BMPs), resulting in changes in land management that provide sustained environmental benefits over time.

Other examples of practices that help to reduce phosphorus loads include:

- Nutrient management practices (including for manure, fertilizers, and bio solids) through appropriate storage and land application methods;
- Shelterbelt/native vegetation establishment on fragile and highly erodible land;
- Improved cropping practices;
- Runoff control;
- Fertilizer capture and reuse systems;
- Erosion control structures and cover crops; and,
- Efficient use of phosphorus in livestock feeds, e.g. use of phytase to enhance the bio-availability of phosphorous in feeds.

3. Governance over adaptive management change modalities:

As data collection and monitoring systems improve over time it will become necessary to “trigger” changes to rules, standards and best management practices. It will be imperative for the agriculture sector to have a meaningful role in the governance over adaptive management, information and adaptation triggers

Grow Ontario Together believes it will be critical to develop the governance for a robust and credible adaptive-management process which uses data and research upon which to update science-based BMP's or standards over time, and provides a meaningful voice to agriculture within the governance framework.

4. Considerations on the multi-barrier approach to mitigations including rules, best practices, compliance structure, governance and incentives.

Specific to the government’s proposed consideration of further restrictions on the application of nutrients during the non-growing season, GOT recommends a balanced approach that builds on strength of existing policies already in place, while allowing Ontario to gain information that would be able to inform future evidence-based actions.

Additionally, GOT suggests that the use of the concept “non-growing season” should be modified to “frozen and snow-covered ground. This modification reflects a more accurate scoping and problem definition of the nutrient application issue that is being solved for. The international Lake Erie Nutrient Targets Working Group defines the issue as *land application on frozen and snow-covered ground (without incorporation)*. Defining the problem as land application in the “non-growing season” is a concern as most manure is applied either pre-planting or post-harvest.

Importantly, Ontario’s approach should take into close consideration the existing layers of legislation, regulation and other policy tools already in place on Ontario farms, including those from the Nutrient Management Act, the Clean Water Act and its associated Source Water Protection Plans.

Many producers are already regulated under these policies, including through restrictions on when and under what conditions they may apply nutrients on their farms. Adding further restrictions and requirements to those already abiding by the existing rules could be unduly burdensome, especially in light of the fact that other jurisdictions such as in the U.S. have only in recent years started to implement standards similar to Ontario’s.

Rather, efforts in Ontario could focus on ensuring *greater consistency in the way these existing regulatory standards for nutrient application on frozen and snow-covered ground are applied across farms*. GOT offers the following guiding principles and potential approach with which the application of nutrients on *frozen and snow-covered ground* could be reduced.

Guiding principles

- *Risk* should be at the core of any approach to address nutrient application on *frozen and snow-covered ground*; the risks to Lake Erie are independent of nutrient source (e.g. manure, biosolids and commercial fertilizer) and should be consistently approached.
- Where possible, the site-specific risk characteristics of the soil should be taken into account. Grow Ontario Together looks forward to participating in the development of improvements to phosphorous-loss models such as the P-index.

- Where possible, use and harness the power of constructive peer-to-peer dialogue and education to achieve behaviour change, before escalating to confrontational compliance activities.
- Any regulatory approach to broadening restrictions on *frozen and snow-covered ground* must be accompanied by targeted 90% cost-shared funding programs to help farm families build and refurbish the storage capacity needed to adhere to the restrictions without unduly impacting the competitiveness of their farms.
- Achieving better results from nutrient management standards does not always have to mean tightening the parameters; in some cases, added flexibility may need to be considered to address unintended consequences. For example, there may be years in which a wet fall means it is environmentally beneficial to allow producers to shift application until later in the fall following harvest, e.g. mid-December. This may be appropriate to reduce phosphorous runoff, avoid compaction, and also would likely reduce nitrogen losses from the field.
- In situations where the evidence and a Regulatory Impact Analysis indicate further regulatory restrictions to be the best way of achieving Lake Erie Domestic Action Plan objectives, there should also be consideration of the regulatory requirements in other Lake Erie watershed jurisdictions.
- While in general the Grow Ontario Together coalition supports the concept of equal regulatory programs and access to financial support for all agricultural producers in the Province of Ontario, it is recognized that there may be budget and logistic realities to consider. Geographic targeting of regulatory requirements and financial assistance programs to priority Lake Erie tributaries is an approach that is accepted by the Grow Ontario Together coalition partners.

Grow Ontario Together proposes a layered approach to achieving a more consistent application of proper nutrient management practices on *frozen and snow-covered ground*.

We believe a performance based set of rules, standards and best management practices should be in place to ensure clarity, coupled with streamlining of existing reporting requirements and approvals processes. This would include:

1. Continued phase-in of farms under the Nutrient Management Act based on building permits.
2. If further restrictions are deemed appropriate, the focus should be on improved consistency of rules: Existing technical standards for nutrient application on *frozen and snow-covered ground* as currently found in the Nutrient Management Act are applied consistently, independent of farm type, farm size or nutrient source. [see Note 1]
3. For phased in farms, streamline existing regulatory reporting requirements: shift away from red tape that provides minimal value to regulators, producers and the public (e.g. requirement for full Nutrient Management Strategy/Plan renewal even when farms are unchanged), and towards

practical tools that allow producers to measure their nutrient balance in a way that supports their cropping activities. In addition to streamlined application processes, MOECC should develop a streamlined reporting system for greenhouse storm water ponds that would allow growers to easily flag concerns without the need for a formal submission. Furthermore, the requirement for monthly sampling should be reviewed after the first year of data collection with a view to reducing grower burden in instances of low environmental risk.

4. Commitment to timely regulatory approvals process: establish ambitious service standards for the turnaround time on review and approvals of Nutrient Management Strategies/Plans, in particular those associated with new construction and building permits. **[see Note 2]**

Compliance and incentives regime:

We believe that the compliance regime should also be performance based with a goal to continued behaviour changes in line with BMP's. This would include a progressive enforcement approach that includes active education and incentives (e.g. cost-sharing measures), outreach and industry peer-to-peer accountability.

5. Improve communication of compliance expectations: rules and standards are communicated clearly and consistently, including the consequences for when standards are not followed.
6. Industry-led resolution process: Industry to work in partnership with OMAFRA to resolve incidences where technical standards are not met but no adverse environmental effects are observed. **[see Note 3]**
7. Financial support to meet standards: Cost share incentives to allow producers to make investments need to adhere to technical standards and adopt associated BMPs.

Note 1: The technical standards referenced are outlined in the Section of the NMA regulations titled "Application During Restricted Period and Other Times When Soil is Snow-Covered or Frozen", specifically in paragraphs 52.2 through 52.5.

Note 2: Timely review and approval is particularly important for Nutrient Management Strategies/Plans required for new construction. A farm decision to build a barn is highly time sensitive, with construction projects requiring extensive planning of money (cash flow), construction crew timing, weather contingencies, animal flow, and many other things. While farmers recognize the importance of proper regulatory measures such as nutrient management strategies, it is detrimental that the review and approval of their Nutrient Management Strategy/Plan becomes the limiting factor for their business project to proceed, especially when all the required information has been provided by the producer. [GOT would be pleased to provide information on specific instances and examples if requested.] Specifically, GOT recommends the following measures be taken to address this important issue:

- OMAFRA commit to addressing the delays in approvals of Nutrient Management Plans/ Strategies, with a focus on those associated with new construction and building permits;
- This commitment should include a plan to consult with industry to establish service standards that will increase certainty and confidence in this critical step of farm building planning;
- Furthermore, the commitment requires a plan for OMAFRA to make the necessary investments and adjustments to meet such service standards, by taking concrete actions that will increase regulatory approval capacity, including additional staffing as needed and/or putting in place a clear process for prioritizing Nutrient Management Strategies/Plans associated with farm construction and building permits.

Note 3: The recommended model for an industry-led resolution process is a peer-to-peer advisory committee that will allow industry leaders and OMAFRA to conduct targeted communications and follow-up with individual producers about nutrient management technical standards, best practices and the industry's commitment to be part of the solution to Lake Erie. A similar industry-led resolution process engaging MOECC and OMAFRA should be formalized through the OGES process to ensure individual greenhouse producers fully understand compliance requirements. Peer-to-peer engagement would provide the following benefits:

- Allows for a respectful and productive dialogue and education about the environmental risk factors associated with nutrient application during the non-growing period;
- Provides a channel for targeted dissemination of resources and tools that would allow producers to address the area of concern in their individual nutrient management practice, including information about technical standards, BMPs and available resources such as cost-share funding and technical support;
- Enables the gathering of information about the gaps and obstacles in the way of full adoption of best practices, e.g. storage capacity, soil health impacts from compaction; and
- Provides a forum to discuss solutions to emergency scenarios (e.g. storage overflow due to excessive precipitation) and potential contingency plans.
- The peer-to-peer advisory panel could be designed for all sources of nutrients, including manure, bio-solids and fertilizer.

The Grow Ontario Together coalition supports the concept of consistent standards practiced by farms across Ontario, and at minimum within the Lake Erie watersheds. Geographic targeting of efforts to broaden the adoption of current regulatory standards on *frozen and snow-covered ground* and associated financial

assistance programs to priority Lake Erie watersheds is an approach that is accepted by the Grow Ontario Together coalition partners.

5. High-level summary of general Grow Ontario Together comments

The Grow Ontario Together coalition agrees with the proposed guiding principles of the Draft Ontario Domestic Action Plan. Policies and programs aimed at reducing the agricultural-source phosphorus load should be based on the following four principles:

- a) Science based,
- b) Continuous improvement
- c) Shared responsibility and
- d) Economically sustainable.

In addition, policies and programs should be proportional to the magnitude and significance of the issue in contributing to the overall agricultural source Ontario phosphorus load.

Grow Ontario Together is supportive of all farm types as they seek to better understand how their particular use of Phosphorus can be better managed through the principles of 4R Nutrient Stewardship: RIGHT SOURCE of plant nutrition, at the RIGHT RATE, at the RIGHT TIME, and in the RIGHT PLACE to improve nutrient use efficiency to reduce any potential nutrient loss into the environment.

Grow Ontario Together is supportive of funding in the next policy framework to support research and infrastructure that supports better placement of fertilizers that allows fertilizers (both manure and dry) to be applied more precisely (Rate), and at the Right Time.

Grow Ontario Together supports infrastructure and funding programs under the next policy framework that supports water and nutrient water reduction and recycling to improve nutrient use or eliminate nutrient loss to the environment. In addition we support ongoing research into phosphorus recirculation and reuse and capture technologies for greenhouse and other sectors.

Grow Ontario Together supports a collaborative approach with government that provides farmers with useful tools to improve nutrient management practices on their farms which includes incentive support for infrastructure, and adapting to any regulatory or Best Management Practice changes.

Grow Ontario Together supports monitoring and research activities to better understand BMP practices and to identify those that might have the most meaningful reduction impacts.

Grow Ontario Together supports an adaptive management process that is underpinned by good science and thoughtful governance that will maximize the

environmental performance of activities, while minimizing costs/burdens including those associated with, rules, standards, regulations and industry BMPs.

Grow Ontario Together supports a progressive compliance regime to maximize the reduction impacts of good practices, relies on industry leadership for peer-to-peer culture and behavior changes, while minimizing unnecessary burdens on producers.

6. Response to other DAP consultation questions:

3. How do you see regional or local planning initiatives linking with or fitting into the implementation of this plan?

It is critical that the implementation of this plan does not lead to redundancy of reporting and compliance requirements for producers, including applicable requirements under existing policies like the Nutrient Management Act or local source water protection plans; and including any new watershed or tributary level plans. All possible efforts should be made to streamline the compliance and reporting requirements where possible.

The same is true for support and extension programs, where a considerable variety of sources (e.g. government, agencies, municipalities, NGOs) can make it challenging for producers to identify the most effective source for information, funding and other resources. Where possible, access to support should be streamlined into a one-window approach.

4. What do you see as the most significant barriers to reducing phosphorus loadings to Lake Erie? Do you have any suggestions for overcoming these barriers?

For farm level action, a considerable obstacle to on-farm investments and adoption of best management practices that could lead to reductions in non-point source runoff is the volatility of the global markets many of Ontario's farm commodities are priced on. In periods of high volatility, it is often not possible for producers to cash-flow such up-front expenses without of sufficient level of stability and financial confidence.

Ensuring an effective *combination* of incentive and business risk management programs is therefore critical to overcoming these obstacles.

6. Tracking progress and adaptive management will be essential for ensuring that actions are making a difference to the health of the Lake Erie basin. Do you have any specific ideas for measuring progress towards achieving Lake Erie phosphorus load reduction targets?

GOT urges the Ontario government to immediately begin work on developing a meaningful measure of how not only Ontario but also its partner jurisdictions in the US are progressing on the shared commitment towards lake health, for example using a measure of phosphorous loading rate per land area within a watershed.

Close attention must be paid in any type of measure that the impact of precipitation levels is factored into observed runoff performance, since a high-precipitation year could easily obscure on-farm progress and improvements. [Refer to chart illustrating the influence of discharge levels on loadings.]

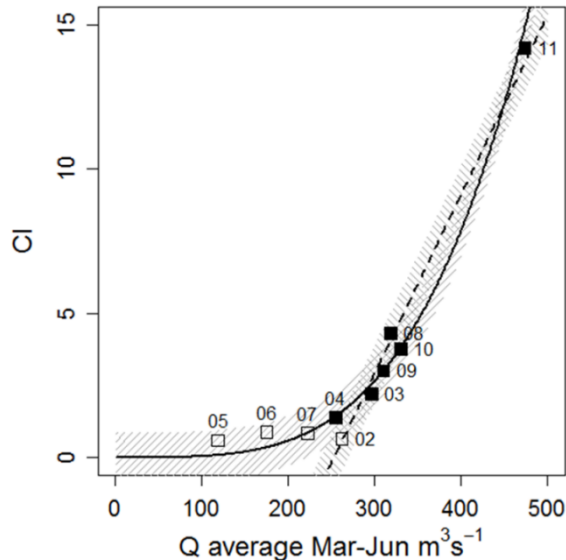


Chart: The relationship of spring discharge rate into western Lake Erie to severity of the bloom later in the same year. Higher water flow (Q) leads to larger phosphorus loads, which drive the blooms, as measured in terms of the Cyanobacteria Index (CI).¹

7. Do you have any other suggestions for reducing, managing or treating phosphorus run-off and discharges, including innovative approaches or technologies for phosphorus removal or recovery?

- Support for industry exchange trips that allow farm commodities to learn about comparable challenges in other jurisdictions e.g. US and Europe and learn about practical on-the-ground solutions being explored and implemented elsewhere.
- GOT would be supportive of Ontario hosting the North American Manure Expo in 2019. This forum, which in the past has only rarely been hosted by Canada, brings together livestock sectors (e.g. Dairy, Beef, Pork and Poultry), custom manure applicators, researchers, and government agencies and is a unique venue for gathering expertise and identifying innovative technologies and practices for manure and nutrient management that could serve Ontario’s Lake Erie objectives.

¹ Interannual Variability of Cyanobacterial Blooms in Lake Erie, Richard P. Stumpf et al., 2012

Conclusion

The Grow Ontario Together collaboration is confident that the ecological health of the Great Lakes and its watershed can be protected and restored through continued stewardship efforts, targeted research, new and innovative technology for wastewater and storm water management, and a commitment to managing the watershed and its resources in a sustainable manner.

Agriculture has made great advances in supporting healthy soils and clean water and is taking its responsibility seriously by providing leadership in addressing further commitments and working collaboratively with governments, with NGO's and other interested stakeholders. We hope that agriculture will continue to be an integral partner with government as we develop an adaptive approach to management and governance models.

We remain hopeful that, with the sufficient level of commitment and support, it is possible to achieve an outcome that not only improves the health of our lakes, but also supports on-farm innovation and the capacity of Ontario's farms and greenhouses to produce food in this great province.

Sincerely,

Grow Ontario Together.

Grain Farmers of Ontario
Beef Farmers of Ontario
Ontario Greenhouse Vegetable Growers
Ontario Pork
Ontario Fruit and Vegetable Growers
Ontario Processing Vegetable Growers
Ontario Federation of Agriculture