NGO Comments on Draft Binational Screening Criteria for Nominated Chemicals of Mutual Concern (November 12, 2019 government draft)

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Submitted to:

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Summary

Forty one non-government organizations (NGO) submit the following comments on Environment and Climate Change Canada's and the U.S. Environmental Protection Agency's Draft Screening Criteria for Nominated Chemicals of Mutual Concern. The substantial number of groups submitting this brief from throughout the Great Lakes basin, within a short time frame, is an indicator of the high degree of importance that activists around the basin put on the Great Lakes Water Quality Agreement and on Annex 3's Chemicals of Mutual Concern.

We are pleased to see these draft criteria, but substantial refinements are needed to make them clearer and to ensure that the criteria have the proper focus.

Our main concern is that the criteria do not put sufficient attention on the special nature and needs of the Great Lakes basin to protect the ecosystem and all life that depends on the Great Lakes for their well-being. Also, the criteria do not put heavy reliance on the governments' commitments in the Great Lakes Water Quality Agreement in terms of the approaches to be taken in making their judgments on whether a substance should become a Chemical of Mutual Concern. Primary among these are: the precautionary approach, pollution prevention, zero discharge, and virtual elimination. Part 1 of our brief explains these factors and their implications for what should be in the criteria and how these criteria should be used.

Central to this is the understanding that the different nature of the Great Lakes ecosystem in comparison with other ecosystems in Canada and the U.S. may mean that actions in country-wide federal legislation, guidelines and programs may not be adequate to take care of the needs in the Great Lakes basin. The same situation also applies to the special needs in other parts of the two countries.

In part 2 of this brief, we discuss each of the draft screening criteria and make specific recommendations for how those criteria could be improved. Under each criterion, we begin with the governments' proposed criterion (in italics) and then discuss the NGO suggestions followed by specific recommendations for improvements. In many cases, we suggest some wording changes in the existing

government criterion. To simplify the understanding of those proposed changes, we have repeated the original government wording and put our changes and additions **in bold** in the original government sentence.

In Part 3, we list all twenty-one of our recommendations.

If you have any questions about these recommendations, please don't hesitate to contact us at:

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Part 1: Introduction

The groups listed at the bottom of this brief submit the following comments and recommendations on the Draft Screening Binational Criteria for Nominated Chemicals of Mutual Concern (CMC). We begin by explaining the basis for our comments.

The Special Nature of the Great Lakes Basin: The Great Lakes have characteristics that make them particularly susceptible to certain kinds of contaminants. For example, unlike river and estuarine systems, the Great Lakes have long hydraulic residence/replacement times. Lake Superior has a residence/replacement time of 173 years; Lake Michigan, 62 years; Lake Huron, 21 years; Lake Erie, 2.7 years; and Lake Ontario, 6 years. Even the shorter time frames listed here are longer than river or estuarine systems, where water moves very quickly through and out of the system. This means that toxic substances stay within the Great Lakes for longer periods of time and accumulate in the system – especially if they are substances that are persistent, i.e., have long lives before they break down. This also means that, if the substances are bioaccumulative, they build up in the food chain with major negative health implications for the forty million people from Canada and the U.S. who rely on the Great Lakes for their water supply and count on the Great Lakes as a significant source of their food supply. The extensive wildlife populations that rely on the Great Lakes for their food supply can also be devastated by the serious health impacts of these chemicals.

The GLWQA Principles and Approaches: The understanding of this special nature of the Great Lakes system has led the governments to recognize the need for special provisions to protect the Great Lakes. This is why in the Great Lakes Water Quality Agreement (GLWQA) the Canadian and U.S. governments emphasize the following principles and approaches:

- The precautionary approach
- Pollution prevention
- Zero discharge for control of the release of CMCs
- Virtual elimination of the releases of CMCs.

We use this special nature of the Great Lakes and these GLWQA principles and approaches as the prime bases for our comments on the draft Binational Screening Criteria for Nominated CMCs in Part 2 of this submission.

The CMC Designation Process: Anyone can nominate a chemical to become a CMC under the GLWQA. When finalized, the Draft Screening Criteria under review here will become the basis for the Great Lakes Executive Committee (i.e., Environment and Climate Change Canada, and the U.S. Environmental Protection Agency) to determine whether or not the nominated substance will become a "candidate CMC". If they decide to declare it to be a "candidate CMC", they will put it through a more detailed assessment process to determine whether or not they will ultimately designate it as a CMC.

The proposed nomination process is designed to be reactive in its approach and would not be effective at targeting chemicals that have not already been evaluated or assessed under the federal legislative regimes in Canada or the U.S. This includes substances such as nanomaterials and substances considered new to commerce, where assessments and considerable data on substances may not available, and for which there may not be any explicit requirements to provide data for the Great Lakes. The absence of evidence detecting the substances in the Great Lakes basin could be a barrier to taking preventive measures to protect the health of the Great Lakes, but does not mean these substances are not in the Great Lakes. It may just mean that we haven't tested for them.

The Weight-of-Evidence Approach: In their third biennial report (1991), the International Joint Commission (IJC) recommended that "the Parties adopt a weight-of-evidence approach to the identification and virtual elimination of persistent toxic substances." The Governments' introduction to the draft Binational Screening Criteria for Nominated Chemicals of Mutual Concern is consistent with this recommendation:

> Any chemical nominated will undergo an initial screening using a weight of evidence approach, that involves consideration of multiple sources of information and lines of evidence that are assessed and integrated using various qualitative and quantitative methods.

The central question here, however, is how the weight-of-evidence approach will be used in this initial screening process. The "initial screening process" referred to here by the governments is the one of deciding whether or not a nominated substance should become a "candidate CMC" or should it immediately be dropped from further consideration.

The IJC recommended the weight-of-evidence approach to reduce the likelihood that proposals for designations and actions would be dropped because of lack of complete evidence. Instead, consistent with the GLWQA they adopted the

precautionary approach where something may be designated even though the evidence is not complete or even if all the science is not consistent. Better to be safe than sorry.

At the nomination stage, especially if it is a nomination by a non-government nominator, the nomination is likely to have incomplete information because of limitations in the information available due to a number of potential factors. These factors include: the information is not open to the public; some information is extremely difficult to find, especially for a group with limited resources and time, and some of the chemicals have never been studied, tested for or the data compiled. The issue of data gaps is particularly important in situations where toxic substances may be in the environment, but for which there are no or only limited monitoring or surveillance programs at the time of the nomination.

These limitations should be taken into account when using the weight-of-evidence approach as a reason why the substance should be placed on the candidate list in order to encourage a search for additional information, instead of the nomination being rejected at this initial stage.

Passing from the nomination stage to the candidate stage does not mean that the substance will become an officially designated CMC. It will still go through another evaluation, which will include agencies, etc. that have access to much more information than a nominator is likely to have.

It is also important to note that at the later evaluation stage, i.e., when determining whether a candidate substance should be designated as a CMC, the governments' introduction to the screening criteria document says: "if it is concluded [after the evaluation of candidate substances, i.e., the second stage] that there is insufficient information, Annex 3 will take steps to promote: additional research, monitoring, or assessment, as needed." This extremely important option is not given at the stage of deciding whether it will become a candidate. If rejected at the initial screening stage, i.e., at the pre-candidate stage, no further action is planned.

Another factor that should be taken into account in the weight-of-evidence approach is the relevance of the information that is missing. The relevance question is one where the special nature of the Great Lakes system and the principles of the GLWQA system should be given heavy weighting in determining whether to send the substance to the candidate stage. For example, the toxic characteristics of the substance may be of particularly high concern because of the nature of the Great Lakes and of the goals of the GLWQA. In that case, the inherent characteristics of the substance should be given high weighting in order to apply the precautionary and preventive approaches.

The screening criteria should make it clear that it is a preliminary screening, and that it is at the candidate-to-designation stage that the more complete assessment is

carried out. Therefore, in order to avoid making an error that puts the Great Lakes at threat, it should be relatively easy to pass from the nomination to candidate stage.

> **NGO Recommendation 1:** In the weight-of-evidence assessment, one cannot expect near-complete information at this initial preliminary stage. The basis for determining by weight-of-evidence whether to go to the candidate stage should be whether enough information has been presented to show that it might be a CMC and whether information not presented or available is relevant to the goals and objectives of the GLWQA (i.e., precaution and prevention) and the special nature of the Great Lakes system. If additional substance information is relevant, the substance should be sent on from the initial screening stage to the candidate stage for further evaluation.

Part 2: NGO Comments & Recommendations on Criteria

> **NGO Recommendation 2:** Make sure that the meaning of the word "chemical" is defined broadly enough to include items such as classes of substances, plastics, naturally occurring substances (e.g., mercury), nanoparticles, etc.

Criterion 1: TOXIC

Government Recommendation: *TOXIC: Is the chemical toxic, persistent, and/or bioaccumulative?*

a. *Has the chemical been found to be toxic?*
b. *Is the substance persistent and/or bioaccumulative*?*

A chemical which is a) considered toxic, and b) persistent and/or bioaccumulative is more likely to be identified as binational CMC.

In Canada

** The criteria for persistence and bioaccumulation are defined under the CEPA 1999 Persistence and Bioaccumulation Regulations.*

In the U.S.

** In the context of these binational screening criteria under Annex 3 of the GLWQA, U.S. EPA will refer to the guidance criteria for persistence and bioaccumulation from the U.S. EPA policy statement, Category for Persistent, Bioaccumulative, and Toxic New Chemical Substances (see https://www.epa.gov/reviewing-new-chemicals-under-toxic-substances-control-act-tsca/policy-statement-new-chemicals*

NGO Comments & Recommendations:

a. *Has the chemical been found to be toxic?*:
The lack of clarity in this government proposed criterion is: by whom does it have to be found to be toxic? This should not be restricted to substances that the Canadian and/or U.S. governments have determined to be toxic under their legislative and regulatory processes. To avoid ever more contamination in the future, which could cause serious health damage to life in the Great Lakes basin, including humans, we need to take a preventive and precautionary approach in determining whether a substance is a CMC. Therefore, in the screening process, we should consider a substance as toxic if any government jurisdiction in the world has put it on their list of toxic substances or if any other evidence (e.g., from chemical structure or modeling) indicates the substance may be toxic.

> **NGO Recommendation 3:** Revise a) to read: Has the chemical been found **by any government jurisdiction in the world to be toxic or is there any other evidence (e.g., from chemical structure or modeling) that indicates the substance may** be toxic?

b. *Is the substance persistent and/or bioaccumulative?*: In the Great Lakes basin, we have been focused on PBT (persistent, bioaccumulative, toxic) substances. This certainly remains as a very important criterion. However, as scientists bring us more understanding of chemicals, a new term is coming into use: PMT (persistent, mobile, toxic). These are substances that are highly mobile in water and as a result can spread more rapidly and over greater distances to contaminate surface and ground water. An example of this type of chemical is many types of PFAS. As PFOA and PFOS have been restricted for use or banned, many industries have replaced them with shorter-chain types of PFAS. These are more highly mobile than the longer-chain PFAS. As a result, the shorter-chain PFAS are now even more widespread and are commonly found in drinking water supplies. PMTs may not have the high level of bioaccumulation that some other substances in the Great Lakes have, but they are toxic and persistent, meaning that their high level of mobility in water may make them even more devastating and widespread in their impacts in the Great Lakes basin. See the footnote for more detail on PMTs.[1]

[1] The European Union's Scientific Committee on Health, Environment and Emerging Risks presented a report in January 2019 that stressed the need to address Persistent, Mobile and Toxic substances (PMTs) under the REACH program. The US Environmental Protection Agency has posted a list of 228 PMT chemicals on its website at https://comptox.epa.gov/dashboard/chemical_lists/ubapmt.

Further, if a substance is toxic and/or bioaccumulative but has a short half-life, it may not pass the persistence test. However, it may be a substance that is continually being loaded into the Great Lakes system and, therefore, the substance is persistently present because of constantly being discharged into the system. This means that the substance could have a serious negative impact on life within the Great Lakes basin.

An example of this kind of problem is triclosan. The 2016 Final Assessment Report on Tirclosan under the *Canadian Environmental Protection Act* stated: "Triclosan degrades relatively quickly in the environment through biotic and abiotic processes. However, it is ubiquitous in the environment due to the continual release to surface water through WWTP effluents. Therefore, chronic exposure of organisms to triclosan is expected in aquatic ecosystems, especially when close to effluent sources. Exposure to soil organisms is also likely through land application of biosolids. Nevertheless, the report concluded that "Even though it [triclosan] is continuously present in the environment, triclosan has been determined not to meet the persistence criteria as set out in the Persistence and Bioaccumulation Regulations of CEPA. Similarly, while triclosan accumulates in organisms to levels that can cause adverse effects, it does not meet the bioaccumulation criteria as set out in the Persistence and Bioaccumulation Regulations of CEPA." This clearly is a flawed situation that is adequately protective of the Great Lakes system.

NGO Recommendation 4: The governments' item b) should be revised to read: Is the substance persistent and/or bioaccumulative **and/or mobile and/or continually loaded into the system**?

NGO Recommendation 5: The governments' summary statement for criterion 1 should be revised to read: *A chemical which is a) considered toxic, and b) persistent and/or bioaccumulative* ***and/or mobile and/or continually loaded into the system*** *is more likely to be identified as binational CMC.*

NGO Recommendation 6: The substance should be considered persistent and/or bioaccumulative if it meets the definition in protocols for <u>either</u> Canada or the U.S.

NGO Recommendation 7: All the criteria are important in choosing CMCs. However, as has been discussed already under "weight-of-evidence" approaches, use of the precautionary and preventive approaches means that the toxicity criterion should have a high emphasis in the weighting approach

at the screening stage because it is talking about inherent risks to the Great Lakes.

Criterion 2: RELEASE

Government Recommendation: *RELEASE: To what extent is the chemical released in the Great Lakes Basin?*

a. *Are there releases to water or air of the chemical?*
b. *Are releases likely to increase in the future due to increasing manufacture, import, or use in Canada or the U.S.?*

A chemical which is a) being released in the Great Lakes and/or b) increasing in manufacture, import, or use is more likely to be identified as a binational CMC.

NGO Comments & Recommendations: Two factors should be added to this release criterion.

a. The term release should cover more than releases as a result of releases during regular operation. It should also include the releases that could potentially occur as a result of accidents (spills, derailments, explosions, etc.). This is needed to be consistent with the preventive approach.

NGO Recommendation 8: An item c) should be added to this criterion: **Could significant releases occur as a result of accidents or other unexpected events?**

The Great Lakes basin is an ecosystem where releases in one place can affect elsewhere in the basin or have effects throughout the entire basin. This means that releases from sources throughout the entire basin from regular operation as well as from accidents or unexpected events should be considered from a cumulative perspective. The cumulative perspective should be both geographically and over time since persistent toxic substances build up in the Great Lakes basin over time.

NGO Recommendation 9: An item d) should be added to this criterion: **What could be the cumulative releases of substances from the range of sources geographically and over time?**

Criterion 3: LEVELS

Government Recommendation: *LEVELS: Are levels of the chemical harmful, or likely to become harmful, in the Great Lakes environment?*

a. *Do measured concentrations of the chemical in the Great Lakes environment (air, water, sediment, and/or biota) exceed benchmarks or guidelines, including fish consumption advisory levels, water quality standards, etc.?*
b. *Are concentrations of the chemical in the Great Lakes environment (air, water, sediment, and/or biota) increasing with statistical significance, suggesting early action is warranted?*

A chemical which is a) currently at concentrations that cause impacts or is b) likely to cause impacts in the near future due to increasing concentrations in the Great Lakes environment is more likely to be identified as binational CMC.

NGO Comments & Recommendations:

a. *Do measured concentrations of the chemical in the Great Lakes environment (air, water, sediment, and/or biota) exceed benchmarks or guidelines, including fish consumption advisory levels, water quality standards, etc.?*

The first question here is: whose benchmarks or guidelines are being used as the standard? These vary substantially among jurisdictions – even within the Great Lakes. For example, note the wide variation in the standards or guidelines for PFOA in drinking water among Great Lakes jurisdictions in micrograms per litre: Health Canada, 0.200; US EPA, 0.070; Minnesota, 0.035; and Michigan, 0.009 [Michigan's number is a screening level number]. Again emphasizing the precautionary and preventive approach Canada and the U.S. have committed to in the GLWQA, the benchmarks or guidelines used should be the strictest benchmarks or guidelines used by any government jurisdiction in the world.

The government recommendation asks whether the current concentrations of the chemical "exceed" the benchmarks or guidelines. This implies that we are okay until the benchmarks or guidelines are exceeded. This is not true. Health impacts don't suddenly start to occur when you cross that narrow threshold of meeting the threshold and move into exceeding. We are already in trouble once we are near or have met the benchmarks or guidelines.

Other problems with this statement include: 1) What if there are no benchmarks or only limited benchmarks? 2) What if there is only limited measurement of the substance even though there are benchmarks? 3) Do the benchmarks take into account the populations of humans and wildlife that are susceptible to damage at lower levels than the average receptor?

> **NGO Recommendation 10:** Item a in levels should be modified to read: **Are or** do measured concentrations of the chemical in the Great Lakes environment (air, water, sediment, and/or biota) **near, meet or** exceed the **strictest** benchmarks or guidelines **for protection of wildlife and humans,** including fish consumption advisory levels, water quality standards, etc., **that are used by any government jurisdiction in the world?**

b. *Are concentrations of the chemical in the Great Lakes environment (air, water, sediment, and/or biota) increasing with statistical significance, suggesting early action is warranted?*

Item b) is an extremely important part of the criteria because it takes a precautionary and preventive approach consistent with the GLWQA. It is essential to declare substances as CMCs before they have become a serious problem in order to avoid the creation of problems in the Great Lakes.

We have a hesitation with the phrase "statistical significance" in b). What about the situation where not enough data has been collected to meet the "statistically significant" standard due to limited sample size, etc.? This could result in decisions contrary to the precautionary approach that the IJC and the federal governments have said we must use in addressing chemicals in the Great Lakes.

> **NGO Recommendation 11:** The "statistically significant" standard should not be strictly adhered to if the reason for it not being seen as "statistically significant" is that there are not enough data to make such a judgment.

Unfortunately, the governments' concluding description of the levels criterion substantially weakens item b). The conclusion reads: *A chemical which is a) currently at concentrations that cause impacts or is b) likely to cause impacts in the near future due to increasing concentrations in the Great Lakes environment is more likely to be identified as binational CMC.*

Here they add the phrase "in the near future" which was not in their original item b). "Near future" is not a preventive approach. We must not wait until contaminants are already seriously building up in the water, air, sediments and/or biota before taking action. That is too late.

> **NGO Recommendation 12:** In the summary, remove "in the near future".

As more scientific studies are carried out that improve our understanding of the impacts of chemicals, we sometimes realize that the current standards for acceptable levels are not strong enough to provide adequate protection. As a result, the governments sometimes strengthen their standards. If this occurs for a substance that was nominated but rejected for designation at the screening stage,

that substance should automatically be brought back for further consideration as a possible CMC.

> **NGO Recommendation 13:** If the standards for acceptable levels of a substance in air, water, sediment or biota are strengthened for a substance that was previously rejected for a CMC designation, that substance should automatically be brought back for reconsideration as a possible CMC.

Criterion 4: ROUTE OF EXPOSURE

Government Recommendation: *ROUTE OF EXPOSURE: Are the Great Lakes a predominant route of exposure to humans or wildlife for this chemical? Are the impacts, or likely impacts, caused by routes of exposure via:*

a. *Great Lakes water?*
b. *Great Lakes food web?*

> *A chemical whose route of exposure to humans or wildlife is predominantly via a) Great Lakes water or b) the Great Lakes food web is more likely to be identified as a binational CMC.*

NGO Comments & Recommendations: The word "predominantly" should be replaced with "important." The Great Lakes do not have to be. The implication of the word ""predominantly" is that Great Lakes water is the overwhelmingly largest source of exposure to the substance. This may not be the largest source but it can still be an important source, having serious negative impacts on life.

> **NGO Recommendation 14:** Throughout this criterion, the word "predominant" or "predominantly" should be replaced with "important" or "importantly."

Throughout the rest of the draft criteria the governments include air and sediments as sources of exposure, but here a) only includes Great Lakes water.

> **NGO Recommendation 15:** Modify a) to read: Great Lakes water**, air and sediments**?

Although the exposure for most life may not be significant, depending on where they live, or what their major sources of food are, or because of particular sensitivities of the species or certain members within the populace, the impacts can be very significant for some life.

> **NGO Recommendation 16:** It should be made clear that the route of exposure can be seen as important even if it is just for some life.

Criterion 5: SCALE

Government Recommendation: *SCALE: Does the geographic scale of contamination have binational significance?*

a. *Is the contamination currently, or likely to become, lakewide or multi-lake in scale as opposed to localized?*
b. *Does the contamination have the potential to cause binational transboundary impacts?*

A chemical that is a) lakewide or multi-lake in scale and/or b) likely to cause binational impacts is more likely to be identified as a binational CMC.

NGO Comments & Recommendations: Another scale factor that is important is whether there is an unusually large and/or widespread conglomeration of the types of facilities that could release the substance in the Great Lakes basin in comparison with most other parts of Canada and the U.S. If there is, and given the relatively closed system of the Great Lakes, releases that may be considered acceptable elsewhere may not be acceptable in the Great Lakes because the cumulative risk factor could be higher in the Great Lakes. As a result, the regulatory regimes of the two countries may not be adequate to address the special needs of the Great Lakes.

> **NGO Recommendation 17:** An item c. should be added to the scale criterion that reads: **Is there a relatively higher and/or more widespread presence of facilities using or generating the substance in the Great Lakes basin than in most other parts of Canada and the U.S.?**

> **NGO Recommendation 18:** The summary description in the scale criterion should be modified to read: *A chemical that is a) lakewide or multi-lake in scale and/or b) likely to cause binational impacts* ***and/or c) sources of the substance are relatively higher or widespread in the Great Lakes*** *is more likely to be identified as a binational CMC.*

Criterion 6: MANAGEMENT

Government Recommendation: *MANAGEMENT: To what is [sic] extent are the releases of the chemical controlled/managed?*

a. *Are programs and management actions for the chemical currently in place at the local, state/provincial, tribal, Indigenous, federal or international level?*
b. *Are current actions adequate, and/or do gaps exist?*

A chemical that is not effectively managed would be more likely to be considered a binational CMC.

NGO Comments & Recommendations: The introduction to this section only refers to controlling and managing "releases." The preventive approach and numerous recommendations from the IJC have emphasized that In order to achieve the prevention aspect of the GLWQA necessary to protect the Great Lakes, "use" of substances must also be controlled and managed.

> **NGO Recommendation 19:** The introduction should be modified to state: "To what extent are the **uses and** releases of the chemical controlled/managed?"

Item b needs to have a description of some ways in which the judgment will be made about adequacy of current management actions. For example, in addition to standard control actions, the following should be considered:

1. Is the management based on enough data to properly understand the risks and impacts? Are the most current scientific findings included in the management decision-making? Given the incompleteness of data, is a sufficiently precautionary approach taken by the regulator?
2. Are the management decisions made by the regulator on the basis of the existing and potential cumulative effects for all sources of the substance within the Great Lakes basin, and do these decisions also take into account the cumulative effects of the build-up of substances over the years and decades.
3. When deciding which management techniques to use, do the regulatory agencies put their top priorities on:
    a. Assessing the potential to use alternative methods to provide the function or service that the substance currently provides, including finding a different way to provide the service that does not require any use of the substance; and
    b. Using a pollution prevention approach as required by the GLWQA instead of a control approach; and
    c. Aiming at achieving the GLWQA's goals of virtual elimination and zero discharge.
4. Are all sources that may result in contamination in the basin being addressed by the regulator? For example, what about products brought into the Great Lakes basin that contain the chemical?
5. Does the regulator consider additional mandatory requirements specific to the Great Lakes, if the country-wide requirements are not sufficient to address the special nature of the Great Lakes and the strong need for a precautionary and preventive approach to addressing Great Lakes issues?

6. Does the regulator provide for meaningful, timely, responsive public engagement in policy-making and decision-making on the matter?

NGO Recommendation 20: Items 1 through 6 that we just listed should be added to the matters to be considered in assessing the management criterion.

Criterion 7:

NGO Recommendation 21: The following should be added as criterion 7: **Could improvements be made in the protection and restoration of the Great Lakes and to life within the basin if the governments designated this substance as a CMC?**

Part 3: LIST OF NGO RECOMMENDATIONS

NGO Recommendation 1: In the weight-of-evidence assessment, one cannot expect near-complete information at this initial preliminary stage. The basis for determining by weight-of-evidence whether to go to the candidate stage should be whether enough information has been presented to show that it might be a CMC and whether information not presented or available is relevant to the goals and objectives of the GLWQA (i.e., precaution and prevention) and the special nature of the Great Lakes system. If additional substance information is relevant, the substance should be sent on from the initial screening stage to the candidate stage for further evaluation.

NGO Recommendation 2: Make sure that the meaning of the word "chemical" is defined broadly enough to include items such as classes of substances, plastics, naturally occurring substances (e.g., mercury), nanoparticles, etc.

Criterion 1: Toxic

NGO Recommendation 3: Revise a) to read: Has the chemical been found **by any government jurisdiction in the world to be toxic or is there any other evidence (e.g., from chemical structure or modeling) that indicates the substance may** be toxic?

NGO Recommendation 4: The governments' item b) should be revised to read: Is the substance persistent and/or bioaccumulative **and/or mobile and/or continually loaded into the system**?

NGO Recommendation 5: The governments' summary statement for criterion 1 should be revised to read: *A chemical which is a) considered toxic, and b) persistent*

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NGO Recommendation 7: All the criteria are important in choosing CMCs. However, as has been discussed already under "weight-of-evidence" approaches, use of the precautionary and preventive approaches means that the toxicity criterion should have a high emphasis in the weighting approach at the screening stage because it is talking about inherent risks to the Great Lakes.

Criterion 2: Release

NGO Recommendation 8: An item c) should be added to this criterion: **Could significant releases occur as a result of accidents or other unexpected events?**

NGO Recommendation 9: An item d) should be added to this criterion: **What could be the cumulative releases of substances from the range of sources geographically and over time?**

Criterion 3: Levels

NGO Recommendation 10: Item a in levels should be modified to read: **Are or** do measured concentrations of the chemical in the Great Lakes environment (air, water, sediment, and/or biota) **near, meet or** exceed the **strictest** benchmarks or guidelines **for protection of wildlife and humans,** including fish consumption advisory levels, water quality standards, etc., **that are used by any government jurisdiction in the world?**

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NGO Recommendation 13: If the standards for acceptable levels of a substance in air, water, sediment or biota are strengthened for a substance that was previously rejected for a CMC designation, that substance should automatically be brought back for reconsideration as a possible CMC.

Criterion 4: Route of Exposure

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NGO Recommendation 19: The introduction should be modified to state: "To what extent are the **uses and** releases of the chemical controlled/managed?"

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The following organizations support this submission:

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