FLOW
FOR LOVE OF WATER

Protecting the Common Waters of the Great Lakes Basin
Through Public Trust Solutions

A Submission to the International Joint Commission

Traverse City, July 24, 2019

Statement of FLOW (For Love of Water) on Climate Changes and the Great Lakes: The Boundary Water Treaty, Great Lakes Water Quality Agreement, and the Common Law Public Trust Doctrine:

A Proposal for Immediate Action by the International Joint Commission (IJC) to Identify Resilient and Adaptive Solutions to Prevent, Minimize, and Mitigate the Hydrologic Effects and Impacts of Climate Change on Flows, Levels, and Quality of the waters of the Great Lakes Basin

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I. The Urgent Problem Crying for Solutions

Historical water level records for the Great Lakes show a general span of around 30 years from a significant low-level to high-level period. This year's swing to a record high-water level in June from a record low-water level in 2013 took only 6 years. This year's precipitation is 10 percent above the average rainfall of 30 to 33 inches—36 to 37 inches. Farm fields, homes, businesses, and coastal communities are flooded. Shorelines are gone or shrinking, erosion, more sediments, and high-water levels have destroyed homes and public beaches or infrastructure. Highways, roads, and docks, wetlands and floodplains, beaches and harbors, break-walls are underwater. Municipal water and waste treatments are failing or threatened with failure. Increased rainfall means more runoff, and more sediments and nutrients, and worsened algal blooms. Recent reports on the climate change impacts in the Great Lakes Basin project a 30 percent increase in precipitation, or an increase of 9 or 10 inches—a total of 43 to 44 inches a year. How will people, communities, businesses, and natural systems adapt to these water flows, levels, and loss of coastline, property, infrastructures, and public and private uses?

The hydrologic effects of climate change are already causing serious impacts to the Great Lakes, and those effects and impacts will only worsen as the water balance and quality begin to change as a result

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of the changes in the hydrologic cycle and watersheds. These effects are the result of extreme or more intense changes in weather from climate change and dynamic forces, which in turn, dramatically affect water levels, water quality, Great Lakes Basin ecosystems, infrastructure, human health, activities, and land and water uses.[2] These effects will continue to cause dramatic impacts to coastal and tributary waters shorelines and public and private property infrastructure, uses, and public health. Climate, weather patterns, and changes in hydrology have and will continue to increase nutrient loading of existing and new algal blooms, shut down drinking water systems, endanger public health, tax stormwater and drainage infrastructure, natural drainage and wetlands and related natural systems, impede shipping and harbors, halt, disrupt, or impair navigation, fishing, boating, swimming, recreation, tourism, farming, industries, transportation, and commercial, residential, and public land uses and facilities, and exacerbate existing point and nonpoint discharges of sediments and toxic pollutants to the waters of the Basin.

These problems and coming threats to the Great Lakes Basin, its ecosystems, quality of life, and economy are unprecedented, massive, dynamic, and unpredictable in scope and magnitude of impacts. According to the most recent October 2018 Report from the UN International Panel on Climate Change, nations, states, and people have only a decade to take every possible action to stem and reduce the inevitable effects and impacts of climate change.

In addition to this wide-ranging intensity of effects and impacts, there is a legal and policy threat to the Great Lakes Compact. The objective of the prohibition on diversions out of the Basin and the narrow exceptions for diversions for humanitarian purposes or communities is to protect the water resources and uses, quality of life, and economy dependent on these water resources. The ban and narrow restrictions on diversions are premised on the fact that the Great Lakes and tributary waters are a single hydrologic system that is essentially non-renewable. There is no water to spare for diversions elsewhere. While this holds true based on the science and historical and normal range of flows and levels in the Basin and its watersheds, recent effects of climate change have pushed flows and levels to record highs in June of this year (2019). Suddenly, there is too much water, and it is directly attributable to increased precipitation within the Basin due to climate change. This raises this question: If the Compact is designed to keep water in the Basin from demands from regions experiencing drought or water scarcity outside the Basin, what happens when the effects and impacts of climate change push water levels above normal flows and levels and causes or threatens devastating ecological, economic, infrastructure, and public health impacts and losses? Should water be diverted or in-flows be reduced or reversed on an emergency basis? If so, on what basis? Under the Compact exceptions? The Boundary Waters Treaty of 1909? A new legal framework? And what standards should be applied to assure the

[2] Special Report: Impacts of Global Warming of 1.5 Degrees on Natural and Human Systems (UN Intergovernmental Panel on Climate Change, Oct. 2018); https://www.ipcc.ch/sr15/chapter/chapter-3/; The Impacts of Climate Change on the Great Lakes (Env't'l Law and Policy Center, 2019); pp. 1-3 http://elpc.org/wp-content/uploads/2019/03/Executive-Summary-GLClimateChange.pdf.

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decision is based on the best science and sound legal principles that prevent unforeseen attacks on the Compact or the Agreement between the States and Ontario and Quebec?

In short, there is not only an ecological crisis, but a law and policy crisis. Accordingly, there is an urgent, unprecedented need for action in the Great Lakes Basin, and the IJC is uniquely authorized, positioned, and equipped to act to protect the waters, ecosystem, infrastructure, communities, economy, and quality of life, and health of the people of the Great Lakes Basin.

II. The Legal and Policy Framework and Principles for Solutions

The Boundary Water Treaty of 1909

The Boundary Water Treaty vests authority in the IJC to regulate and take other actions, such as reviewing actions that affect water levels and preparing and publishing references, reports, and guidelines to protect and manage Great Lakes water flows and levels (quantity) and pollution (quality); the Treaty prohibits any diversion "affecting the natural level or flow" of water unless authorized by both countries and through the IJC.[3] The Treaty also specifically recognizes that our international boundary waters are a shared commons to be kept and managed for navigation, travel, fishing, hydropower, and other public and private uses and enjoyment for public and private purposes consistent with the principles of the Treaty and laws of both countries.[4]

The Great Lakes Water Quality Agreement of 1972, 1978, 1987, and 2012

The Great Lakes Water Quality Agreement (GLWQA) charges both countries—Canada and the United States—with a responsibility to: protect the water quality of the Great Lakes from substances caused by human activity that adversely affect aquatic life; prevent debris, oil, scum and other substances that impair water quality and uses; and protect these waters and ecosystems against nuisance, toxic substances, and nutrients from entering the lakes that are harmful to human, animal, aquatic life, and beneficial public and private uses.[5] The GLWQA also charges both countries with protecting aquatic ecosystems and improving water quality through common objectives and measures, and assigns this task to the International Joint Commission.[6] The GLWQA has also established a protocol to address the existing and emerging effects from water flows and levels, including the significant increases in flows and levels from climate change.[7] According to a former Senior Policy Advisor to the IJC, "this is critical

[3] Int'l Boundary Waters Treaty of 1909, art. 3, Jan. 11, 1909, 36 Stat. 2448. The Treaty prohibits changes in flows or levels caused by diversions that would interfere with navigation, boating, fishing, and domestic uses in the absence of the consent of both countries. arts. II, III, IV, VIII, IX.
[4] Id.
[5] Art. III, GLWQA of 1978; Annex 13, GLWQA of 1978; reaffirmed in GLWQA of 1987 and 2012.
[6] Reaffirmation, GLWQA of 1978.
[7] The GLWQA of 2012 recognizes the threats from climate change, adopts as a purpose the protective prevention of effects from environmental threats, including scientific, generational adaptation to climate change. Art. 2,

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because the IJC's mandate is the only place where both water quantity and water quality come together in the Great Lakes Basin."[8]

The Common Law Public Trust Doctrine (United States) or the Right of Navigation and Fishing Doctrine (Canada)

The legal regimes of both countries recognize a government obligation based on trust principles to protect navigation, boating, fishing, drinking water and sustenance, and related uses of the navigable waters within their countries and states or provinces.[9] Under the common law of both countries, this trust protects these protected trust uses from interference or impairment, now and for future generations. Citizens are viewed as beneficiaries of this trust, which means they have a distinct, albeit shared interest, to participate and assure that this governmental duty is respected and where necessary enforced.[10] All eight Great Lakes States and the two provinces recognize variations of this trust and the respective governments' perpetual authority or generational duty to prevent such interference, impairment, or harm to protected public rights and uses and the waters and ecosystem they depend on for use, sustenance, and public health.

These public trust principles are uniquely suited to address the effects and impacts from climate change on the Great Lakes, because the Great Lakes are scientifically a single hydrologic system affected by flows and levels due to evaporation, precipitation, natural topography and geology, and human land use patterns and conduct. The public trust framework embodies a set of principles that can protect the integrity of water quantity *and* quality from one generation to the next. This trust also provides a recognized process for considering effects and impacts and making sound decisions to protect public trust waters, uses, and ecosystems from activities and conduct, both outside watersheds, such as climate change effects, and inside watersheds such as water and land use practices and development. The public trust doctrine provides a practical tool to evaluate and guide decision-making based on the existing and emerging effects from hydrogeological and land use watershed systems. In other words, the public trust provides an existing framework and body of law to achieve protection and mitigation of harm from existing conditions and the emerging effects and impacts from climate change. These principles provide the framework and process to embrace complex scientific evidence and to craft transboundary policy solutions that contemplate dynamic climate effects and various climate scenarios.

Purposes, pp. 5-6, Art. 3, Principles, pp. 6-7, Art. 7, IJC, identifying research and response to threats like climate change, pp. 15-18.

[8] Personal Communication by author with Dave Dempsey, July 23, 2019.

[9] Maude Barlow and James Olson, *Presentation to the International Joint Comm'n on the Declaration of Commons and Pubic Trust for the Great Lakes Boundary Waters* (Report of the Council of Canadians [Le Counseil des Canadiens] and Flow for Love of Water, Dec. 13, 2013, pp. 6-32); James M. Olson, *All Aboard: Navigating the Course for Universal Adoption of the Public Trust Doctrine*, 15 Vt. J. Envt'l Law 135, 145-169 (2014).

[10] E.g. *Queen v Meyers,* (1853) 3 U.C.C.P. 305, 357 (Can.); *Illinois Central R Rd v Illinois,* 146 US 387 (1892); Olson, *supra*, at pp. 146-147, 164-166.

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The Recognition and Recommendation of the Public Trust or Right to Navigation and Fishing Trust in the Great Lakes by the International Joint Commission or the United States and Canada

Over the past five years. the IJC has recognized and recommended implementation and application of the public trust doctrine as a framework or "backstop" set of principles to address the growing harms and threatened impact and impairment to the waters, ecosystem, and human use and enjoyment of the Great Lakes for numerous public and private uses related to communities, economy, and quality of life.

1. The IJC's 2014 Lake Erie report on Lake Erie algal blooms, *A Balanced Diet for Lake Erie,* recommended that "the governments of Michigan, New York, Ohio, Pennsylvania and Ontario should apply a public trust framework consisting of a set of important common law legal principles shared by both countries, as an added measure of protection for Lake Erie water quality; governments should apply this framework as an added decision-making tool in policies, permitting and other proceedings"[11]

2. The 2015 IJC 15-Year Review recommended that the "Great Lakes states and provinces should consider the advisability of developing, harmonizing and implementing a bi-national public trust framework as a backstop to the Agreement and Compact, in order to fill gaps and to deal with as yet undefined stresses likely to impact negatively on the Great Lakes in the future."[12]

3. The 2017 IJC Triennial Assessment of its Progress under the GLWQA stated that the "governments of both nations have recognized their responsibilities as trustees of the lakes on behalf of their citizens."[13] The Report also emphasized that climate change constituted a critical "looming" threat on water quality, water resources, health, and quality of life in the Basin.[14] Further, it recommended governmental cooperation in establishing a holistic approach to identify and respond to climate change effects and impacts.[15]

4. The Great Lakes Compact supported through efforts of the IJC declares that the "waters of the Basin are precious public natural resources held in trust," and are part of an "interconnected single hydrologic system."[16] The Compact also contemplated amendment and supplemental interpretative guidelines for upholding the diversion prohibition and the Standard of Decision

[11] *Id*., at p. 78.
[12] Protection of the Waters of the Great Lakes:2015 Review of the Recommendations from the 2000 Report (IJC Dec. 2015), https://legacyfiles.ijc.org/tinymce/uploaded/Publications/IJC_2015_Review_of_the_Recommendations_of_the_PWGL_January_2016.pdf, p. 6.
[13] 2017 IJC Triennial Assessment on Great Lakes Water Quality (IJC, Final Report, Nov. 28, 2017).
[14] Id., p. 143.
[15] Id., p. 150.
[16] Great Lakes-St. Lawrence River Basin Water Resources Compact, Sec. 1.3(1)(a) and (b).

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for the narrow exceptions for humanitarian and consumptive uses in response to the effects and impacts from climate change.[17]

III. A Proposal for Action to Identify Solutions Based on Existing and Dynamic Emerging Scientific Evidence and Effects from Climate Change and ON Public Trust Framework and Principles

Based on the effects and impacts of climate change on the ecological integrity of the quantity, quality, and ecosystem of the water of the Basin, and the many critical and valuable public and private uses that depend on these waters and the ecosystem, it is recommended that the IJC immediately implement an "emergency pilot study" to determine and establish the following:

1. A solution based on scientific data, evidence, and landscape and watershed or basin models and hydrologic models of the Great Lakes Basin to rely on real-time data and predictive models for water balance, fows and levels, coupled with weather forecasting data and models, that identifies: (a) the effects from precipitation, evaporation, and flows and levels within the historical range of water levels in the Basin; and (b) the effects from precipitation, evaporation, and flows and levels above or outside the normal range of water levels in the Basin.[18]
2. A decision-making approach based on public trust principles that provide an accountable and proactive governmental process to implement short-term and long-term adaptive and resilient actions that protect the integrity of water quantity, quality, wetlands, water resources, ecosystem, and recognized valuable public and private uses dependent on the water resources of the Basin.

This two-pronged "emergency pilot study" would lead to responsive, adaptive, and resilient decisions based on the dynamic and changing pressures and demands on the waters of the Basin, both inside and outside the Basin. Because science-based approaches or models can isolate or identify the intensified effects from climate change, governmental bodies, like the IJC and the Council of Great Lakes Governors or the parallel Agreement's Regional Body (consisting of representatives from Ontario, Quebec, and the eight Great Lakes states) can discern cause, effect, and solutions tied to identified flows and levels tied to climate change, and at the same time continue to address effects from human activity within the historical normal range of flows and levels within the Basin.[19] This approach will provide a responsive, proactive institutional process to prevent or minimize catastrophic consequences caused by or scientifically attributable to climate change.

For example, the IJC is responsible for making decisions regarding proposed diversions and their effect on flows and levels of four of the five Great Lakes. This proposal and "emergency pilot study" would

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[17] Id., Sec. 15.
[18] See e.g., David Hyndman, Ph.D., and Anthony Kendall, Ph.D., Hydrology Lab, Landscape Hydrology Model, Department of Geology, Michigan State University; A. D. Gronewald, Ph. D, et al., Large Lake Statistical Water Model, University of Michigan, School for Environment and Sustainability (in conjunction with NOAA)..
[19] *Id*.

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develop the protocol for the IJC to separate effects and impacts on levels within the normal range of water levels and those dynamic and variable effects beyond the normal range of flows and levels caused by climate change. For another example, the IJC and Council of Great Lakes Governors and Regional Body, who are responsible for critical decisions on major exceptions to the diversion ban or consumptive uses, can separate the effects from climate change to assure that decisions are based on the changing and dynamic nature measured by scientific evidence, and on public-trust-based analysis and decisions. In addition to human-made transfers of water in and out of the Basin, it is now scientifically established that climate change constitutes one of the largest, if not the largest, effect on flows and levels of water in the Great Lakes and Basin. In physical terms, climate change can either intensify the diversion of water outside the Basin or into the Basin.

This can mean too little water or too much water. For the foreseeable future, the effects of climate change coupled with models tied to weather forecasting can help determine appropriate governmental permitting, actions, and other processes, as well as communities, businesses, and citizens faced with dramatic changes and serious, grave harm to their person and property.

There is and will be tremendous pressure on governments and decision-makers to rid the Basin of "too much water." When water levels have or will likely rise above normal levels, the effects and impacts can be predicted and proactive actions taken. The IJC and governments (provinces, states, and communities) must act swiftly before decisions are made that are wrong, with serious consequences, or decisions that establish precedents that destroy or undermine the Great Lakes Compact, GLWQA, and other laws and protocols regarding the withdrawal, use, or diversion of water. By establishing a solution-based approach using real-time scientific evidence and climate forecasting coupled with a public trust framework, governments and decision-makers will be better equipped to make the right emergency or long-term decisions.

For yet another example, assume water levels due to climate change in the Basin are predicted to rise 6 inches above record normal high-water levels. What are the effects? The impacts? What is the expected impact on human health, navigation and public infrastructure like harbors and drinking water and sewer systems? What are the expected impacts on wetlands, coastal properties, floodplains, farmlands? What are the related costs? Using this approach, governmental bodies can make temporal decisions, that is immediate decisions that are responsive to the models and actual and predicted rises and their impacts. And, the decisions would be inherently tied to those effects and impacts attributable to climate change, and not those occurring within historically normal low and high levels of precipitation and surface waters and groundwater. In turn, these findings can be evaluated within current institutional regimes, like the Compact or Boundary Waters Treaty, or through a new agreement, process, or guideline, using the public trust principles of accountability and the duty to prevent and minimize and protect waters and uses from impairment or interference. Such an approach would provide a complimentary or supplementary means to isolate, identify, and implement solutions to climate change effects and impacts. For example, faced with extraordinary water levels and catastrophic damage, could water be "diverted" out of the Basin on a temporary basis as a "humanitarian" exception in the Compact? Could existing diversions of water into the Basin be

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temporarily reversed or reduced? Can this be tied to climate change effects to avoid precedents that would undermine the integrity of the Compact, the Boundary Waters Treaty, and/or Great Lakes Water Quality Agreement?

The IJC has a unique opportunity to engage in a pilot study right now, to bring into being solutions and a framework to implement adaptive, and resilient measures to prevent or reduce the effects and impacts to all of us--our lives, health, quality of life, and economy--attributable to climate change. Now is the time. This is the place. Thank you.

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