

**Great Lakes Water Quality Board  
212<sup>th</sup> Meeting**

**Summary of Discussion**

April 15, 2021 9:00 AM – 2:30 PM ET  
Virtual Meeting

**U.S. Member Participants**

Jon Allan (Co-Chair)  
Sandy Bihn  
George Elmaraghy  
Frank Ettawageshik  
Steve Galarneau  
George Heartwell  
Brandon Hofmeister  
Sara Hudson  
Elizabeth Kirkwood  
Christopher Korleski  
Kelsey Leonard  
Monica Lewis-Patrick  
Eileen Murphy  
Joe Tomandl III

**Canadian Member Participants**

Gayle Wood (Co-Chair)  
Niharika Bandaru  
Mark Fisher  
Michael Goffin  
François Houde  
John Jackson  
Carolyn Johns  
Irving Leblanc  
Mark Mattson  
Chris McLaughlin  
Chloe Stuart  
Mark Wales

**Canadian Member Regrets**

Chris Paci

**Observers**

Ash Kumar - Environment and Climate Change Canada  
James Schardt – U.S. Environmental Protection Agency  
Chris Winslow - Ohio State University (Member of IJC's Science Advisory Board – Research  
Coordination Committee)

**Invited Guests**

Blair Feltmate - Intact Centre on Climate Adaptation, Faculty of Environment,  
University of Waterloo  
Gregory Keoleian - School for Environment and Sustainability, Center for Sustainable Systems,  
University of Michigan  
Greg Bolino – DG Reimagined  
Sandra Eberts – U.S. Geological Survey (Member of IJC's Science Advisory Board – Research  
Coordination Committee)

**Public Attendees**

Patrick Doran - The Nature Conservancy, Michigan  
Cameron Fioret - University of Guelph  
Nancy Goucher - University of Waterloo  
Peter Johnson - Great Lakes St. Lawrence Governors & Premiers  
Matt Preisser – Michigan Department of Environment, Great Lakes and Energy  
Kalyn Swihart - Senator Rob Portman's Office

**IJC Commissioners**

Commissioner Henry Lickers  
Commissioner Robert Sisson  
Commissioner Lance Yohe

**Commission Staff**

Jennifer Boehme – Great Lakes Regional Office  
David Burden – Great Lakes Regional Office (Director)

Allison Voglesong Zejnati – Great Lakes Regional Office

Li Wang – Great Lakes Regional Office

**Commission Liaisons**

Victor Serveiss – U.S. Section

Paul Allen – Canadian Section

**Secretariat**

Antonette Arvai – Great Lakes Regional Office

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**Summary of Action Items**

- Members to provide comments on the nuclear decommissioning report by May 14th.
- WQB Co-Chairs will engage members further on the issue of climate adaptation in the Great Lakes via e-mail and at future WQB meetings.

**1. Welcome, Introductions and Indigenous Acknowledgement** (*J. Allan & G. Wood*)

The WQB Co-Chairs welcomed everyone to the 212<sup>th</sup> meeting of the board. The co-chairs acknowledged the traditional First Nations and Tribal territories on which the meeting was conducted that day, given the virtual gathering of participants from various locations. Three new members were recognized and welcomed to the board – Niharika Bandaru (Town of Essex, ON) filling a Canadian municipal seat, Eileen Murphy (New York State Department of Environmental Conservation) filling a U.S. state seat and Chloe Stuart (Ontario Ministry of the Environment, Conservation and Parks) filling a Canadian provincial seat.

**2. Review and Approval of the Agenda** (*J. Allan*)

The agenda was approved with no additions or changes.

**3. Co-Chairs' Update** (*G. Wood*)

The co-chairs have been providing monthly written updates to members to ensure timely communication of co-chair activities relevant to board operations. A verbal update was provided during the meeting on the following:

- The board's 2021 project work plans were approved by the Commission in mid-March. Work groups have begun implementing the work plans.
- A 2023 triennial assessment of progress (TAP) terms of reference has been developed by Commissioners with the WQB Co-Chairs, which outlines an approach to developing the IJC's TAP 2023 report. This includes the creation of a work group, led by the WQB Co-Chairs and comprised of the Co-Chairs of the Science Advisory Board and the Health Professional Advisory Board or their designates.
- Co-Chairs continue to participate in calls with WQB lead Commissioners to inform on WQB activities and raise issues of interest. Recent topics included the WQB's work plan progress, project updates and the TAP 2023

**4. Board Project Updates** (*G. Wood*)

WQB members were provided with presentations on two board projects that are nearing completion – *Decommissioning Practices of Nuclear Power Plants in the Great Lakes Basin* and the *Third Great Lakes Regional Poll*.

*Nuclear Decommissioning* (*J. Jackson*)

The work group has recently completed a draft report that is currently under review by the full board. The report is supported by several reports and activities including, a background report on Great Lakes nuclear facilities; a consultant report on potential threats to the Great Lakes during and after

decommissioning; a report on costs and financing of decommissioning; community panel discussions (US and Canadian); and an experts virtual workshop. The work group has developed recommendations around four topic areas – residual contamination and long-term monitoring; radioactive waste storage; transportation of spent nuclear fuel; and transparency and public engagement. Once the report is approved by the board it will be forwarded to the Commission for approval for public release, expected summer 2021.

*Third Great Lakes Regional Poll (K. Leonard)*

A phone survey of 4,550 Great Lakes residents was completed in January 2021, which included oversampling for Indigenous respondents and island resident respondents. This is the third opinion poll completed by the board, with the first two conducted in 2015 and 2018. Highlights from the survey results were provided such as, perceptions on Great Lakes water quality threats; the importance of protecting the lakes; perceptions of Great Lakes water quality; and awareness of policies and programs to protect the lakes. The work group will also be conducting an on-line survey in the summer to extend the phone survey as well as geospatial and demographic analysis. The results of the poll are expected to be released in the fall of 2021.

**Action Item: Members to provide comments on the nuclear decommissioning report by May 14<sup>th</sup>.**

- 5. Panel Presentation: Responses and Actions to a Changing Climate in the Great Lakes Region (J. Allan)**  
In 2017 and 2019 the WQB completed reports on climate change adaptation and resiliency. A panel presentation was held to frame a set of thoughtful discussions around the issue and as an opportunity for the Board to re-visit and explore the issue of climate change, its consequences and response to its impacts on the Great Lakes region. A summary of each of the three panelists' presentations is provided below.

*Responding to the Climate Crisis: Accelerating Carbon Neutrality*  
**by Dr. Gregory Keoleian (Professor, School for Environment and Sustainability/Director, Center for Sustainable Systems, University of Michigan)**

Earth is in a climate crisis with impacts to human health, agriculture, infrastructure and the environment. In the Great Lakes region this can include, decline in agricultural production; worsening effects of invasive species; loss of biodiversity and ecosystem services; increased lake surface temperatures; and flooding. Human health impacts can include heat stress and decreased air quality, with poor populations being disproportionately affected. The Great Lakes region is home to an energy-intensive economy, with per capita GHG emissions 20% higher than the national average. Several Great Lakes states have climate plans to reduce carbon emissions and/or move to carbon neutrality. There are many paths in transitioning toward carbon neutrality such as, increased use of renewable energy; accelerating the circular economy; building energy efficient homes and commercial buildings; vehicle electrification with renewable electricity supply; and shifts in diets to lower carbon intensity foods. Policy and regulations can be used to incentivize and accelerate technology investment and adoption (e.g., vehicle standards, building codes, renewable fuel standards).

*Limiting Growing Financial Costs of Home and Community Flood Risk in the Great Lakes Region*  
**By Dr. Blair Feltmate (Head, Intact Centre on Climate Adaptation, Faculty of Environment, University of Waterloo)**

Climate change has and is happening, with most attention on mitigation rather than adaptation. While work should be done to reduce the rate of change, it cannot be reversed, and people/communities need to be prepared for and adapt to the impacts. Flooding is the most financially costly extreme weather impact to communities and homeowners in the Great Lakes region. The Intact Center on Climate Adaptation has developed a series of reports on practical approaches to

reduce flood risks, from individual home protection to coastal resiliency. Home flood risk protection can range from simple, no-cost activities (e.g., cleaning eaves troughs) to more complex upgrades (e.g., correct grading to direct water away from foundation). While there are many guidelines and practices for flood protection at the home/community level, the deployment of such practices has been limited and not done quickly enough. In trying to address this, the Intact Center has engaged directly with insurance agencies, realtors, banks, mortgage brokers, and utilities to train them on the impacts of climate change, so they can educate homeowners on actions to minimize the risk of flooding in their homes.

*Climate Strategies – Reimagining Energy, Transportation and Land*  
**By Mr. Greg Bolino (CEO/Founder, DG Reimagined)**

A small percentage of energy generation in the Great Lakes states is from renewable sources. Transitioning to renewable energy can have a significant impact on land use footprint, posing challenges in siting and permitting (such as for solar and wind). In developing a climate strategy, the elements of energy, transportation, land use and water use needs to be reimagined. In considering energy this includes support for renewable energy generation and incentives for energy efficiency. Transportation shifts to electric vehicles will require infrastructure changes for charging and increasing low-carbon generation sources for transportation and policies/incentives to remove barriers to vehicle electrification. Land use policies and practices should encourage natural carbon offsets (re-forestry) and sensible practices for solar and wind siting practices (e.g., incorporating vegetation and insect habitats where clear-field practices are involved). Water policies should focus on guidance for offshore wind energy generation, support for research on renewable marine energy generation (e.g., wave/tidal), and sensible practices around water use (e.g., groundwater pumping).

**Action Item: WQB Co-Chairs will engage members further on the issue of climate adaptation in the Great Lakes via e-mail and at future WQB meetings.**

**6. Cross-board Project Updates (G. Wood)**

Several WQB members serve on other advisory board project work groups. Brief updates on the progress of these projects were provided:

The Science Advisory Board's (SAB) Great Lakes Science Plan project seeks to institute a research plan to ensure restoration dollars are spent with the greatest return on investment. A virtual workshop was recently held to help identify the science needs for managing the lakes from a science discipline perspective (e.g., physical processes) and from an individual, lake-specific perspective.

The SAB's Great Lakes Early Warning System Phase 2 (GLEWS) project seeks an approach to identify a stressor or threat early, before it becomes a crisis. A matrix of stressors has been developed and three stressors (known, suspected and unknown stressor) are currently being identified for case study analysis.

The WQB and SAB are also jointly undertaking a Nutrient Synthesis project that will assess implementation of federal Domestic Action Plans and the degree to which past IJC nutrient-related recommendations have been used. The consultant on this project has reviewed and summarized IJC nutrient-related reports (including key findings and recommendations) and completed a literature review of recent publications.

An update on the SAB's Hydrological Conceptual Model project was provided, by the SAB project co-lead, as part of agenda item 7.

Members are also serving on newly started projects of the SAB's Traditional Ecological Knowledge, SAB's Ecosystem Management through Adaptive Management, and the SAB's Community Science. Each of these projects are just beginning with work groups being formed.

**7. Presentation: IJC's Science Advisory Board Research Coordination Committee Great Lakes Hydrological Conceptual Model (J. Allan)**

The WQB Co-Chairs seek to bring presentations on other board projects so that members can better understand the work of others and where there may be connections with WQB work. Science Advisory Board Research Coordination Committee member Sandra Eberts (Program Science Coordinator, USGS Water Resources Mission Area, Office of Planning and Programming) gave a presentation on the SAB-RCC Great Lakes Hydrological Conceptual Model project.

The project will facilitate the development of an integrated surface water-groundwater model. Such a model is needed to better understand the influence of groundwater on the water balance of the Great Lakes basin, which is foundational to assessing the effects of climate change and anthropogenic activities on water quantity and quality. The project includes developing a science management framework, informed by stakeholder input, that describes key elements needed to create and manage a basin-wide numerical model. The stakeholder input will also be used to develop a hydrological conceptual model that informs the next steps in numerical model development. Currently the project has developed and administered the questionnaire to solicit stakeholder input. The project is expected to be completed by the end of 2021.

**8. WQB Project Work Plans and Alignment with Board Responsibilities and Commission Priorities (J. Allan & G. Wood)**

As part of the project work plan submission process for 2021-22, the Co-Chairs considered the extent to which each of the proposed WQB projects supported or aligned with the Commission's transboundary priorities. This alignment was reviewed with WQB members, which ranged from a "1" (work plan significantly advances priority) to a "4" (does not directly advance Commission priority but addresses Great Lakes Water Quality Agreement priorities). During the WQB's process in identifying projects and developing work plans, the Board also ensures the work is consistent with the mandate/responsibilities of the WQB, as outlined in the GLWQA and IJC Directive. The board discussed any issues or challenges they felt existed in meeting their responsibilities. The following items were noted:

- In aligning with Commission priorities, which span across all IJC boards, the WQB does not necessarily need to have "1" on each priority. Some priorities may be better addressed by another board but could include WQB contribution.
- It is challenging to identify emerging issues or issues of focus within the board's broad responsibility of "advice on matters related to the Agreement and Annexes". It was suggested the board re-visit their running list of Great Lakes issues (~every 6 months) to help identify potential emerging issues/projects.
- Ensure the board involves the relevant and appropriate people in the work and conversations it has.
- Limited budget, for all Great Lakes boards, to carry out the work needed to address responsibilities.

**9. Next WQB Meetings (G. Wood)**

The remaining WQB meetings for the 2021 year were reviewed, as below. The scheduling of in-person meetings will be dependent on the COVID-19 situation.

- 213<sup>th</sup> Meeting - July 21, 2021 @ 10:00-11:30 AM ET (virtual)
- 214<sup>th</sup> Meeting - October 6-7, 2021, Niagara Falls, ON (Tentative)

**10. Public Comments and Closing Remarks (J. Allan & G. Wood)**

No members of the public were present at the end of the meeting. Members were thanked for their continued high-level of engagement and commitment to the work of the WQB and IJC. The co-chairs thanked members and others for their participation in the meeting.