

Great Lakes Water Quality Board 218th Meeting

Summary of Discussion

September 26-27, 2022

Niagara-on-the-Lake, ON

U.S. Member Participants

Jon Allan (Co-Chair)
George Elmaraghy
Frank Ettawageshik (remote)
Stephen Galarneau
Brandon Hofmeister (remote)
Elizabeth Kirkwood
Kelsey Leonard
Eileen Murphy (remote)

Canadian Member Participants

Gayle Wood (Co-Chair)
Niharika Bandaru
Mark Fisher
Michael Goffin
François Houde
Carolyn Johns
Jamie Lavigne (remote)
Chris McLaughlin
Mark Wales
Chloe Stuart

U.S. Member Regrets

Sandy Bihn
George Heartwell
Sara Hudson
Chris Korleski
Monica Lewis-Partick
Joe Tomandl III

Canadian Member Regrets

John Jackson
Mark Mattson
Chris Paci
Brian Tucker

Observers

Ash Kumar - Environment and Climate Change Canada (remote)
Melanie Ward – Ontario Ministry of the Environment, Conservation and Parks (remote)

Invited Guests

Clare Cameron – Deputy Lord Mayor of Niagara-on-the-Lake
Walter Sendzik - Mayor of the City of St. Catharines
Robert Baldwin, Chief Administrative Officer, Lake Simcoe Region Conservation Authority
Chandra Sharma, Chief Administrative Office, Niagara Peninsula Conservation Authority
Robert Foster, Chair, Niagara Peninsula Conservation Authority
Natalie Green, Manager Climate Change and Special Programs, Niagara Peninsula Conservation Authority
Michael Murray (SAB-SPC Member), University of Michigan, School for Environmental and Sustainability
John Livernois (SAB-SPC Member), University of Guelph

Commission Staff

Heather Stirratt – Director, Great Lakes Regional Office
Raj Bejankiwar – Great Lakes Regional Office
John Wilson – Great Lakes Regional Office (remote)

Commission Liaisons

Oliver Dumville – Canadian Section Office
Victor Serveiss – U.S. Section Office

Secretariat

Antonette Arvai – Great Lakes Regional Office

Summary of Action Items

- 1. Board Secretary will circulate Great Lakes Horizons progress update slide deck with WQB members.**
- 2. Board Secretary will circulate a summary of work planning topics discussed for further consideration by the Board in selecting topics for development of 2023 work plans.**
- 3. Board Secretary will circulate Nutrient Synthesis slide deck to WQB members for preliminary feedback.**
- 4. Board Secretary will circulate a poll(s) to identify WQB meeting dates and times for the 2023 calendar year.**

1. Welcome, Introduction and Indigenous Acknowledgement (*Co-Chairs*)

The Co-Chairs welcomed everyone to the 218th meeting of the board – the first in-person meeting since October 2019. Members expressed appreciation for meeting in-person after three years of virtual meetings. The co-chairs acknowledged the meeting was held in the traditional territory of the Haudensaunee, Ojibway/Chippewa and Anishinaabeg people. The territory is covered by the Upper Canada Treaties and is within the lands protected by the “Dish with One Spoon” wampum agreement. New member Jamie Lavigne (Assembly of First Nations) was welcomed to her first meeting of the board.

Clare Cameron, Deputy Lord Mayor of Niagara-on-the-Lake, provided welcoming remarks to the Board, highlighting water as integral to the lives of the people in the Niagara-on-the-Lake region, who rely on it for recreation, drinking and irrigation of crops that support their prosperous wine industry.

2. Meeting Kick-off with Mayor Walter Sendzik

Walter Sendzik, Mayor of the City of St. Catharines, ON and immediate past Chair of the Great Lakes St. Lawrence Cities Initiative (GLSLCI), kicked-off the meeting recognizing the importance of Lake Ontario and Lake Erie to the region, as well as providing an overview of the GLSLCI. Mayor Sendzik highlighted the GLSLCI’s 2022-25 strategic plan, developed to support members’ evolving needs with a focus on issues important to the protection of the Great Lakes and St. Lawrence River Basin. The plan includes four focus areas (1) source water protection (2) water equity (3) blue economy and (4) climate change and coastal resilience. The strategic plan further outlines actions within these areas to strengthen coastal communities’ resiliency to impacts from climate; providing support to acquire funding and resources for infrastructure investments; and sharing lessons learned and best practices to advance protection of the Great Lakes and St. Lawrence River. A cornerstone to this work is collaboration and building partnerships to implement actions. This includes the IJC, who can provide resources to bring groups together to help share knowledge and lessons learned.

3. Co-Chairs’ Update (*J. Allan*)

The co-chairs provide 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:

- IJC Triennial Assessment of Progress (TAP) Report
 - IJC staff have begun research and writing of various sections of the TAP report. Report sections will draw on the work/reports of the various advisory boards. Advisory boards, including the WQB, will conduct a review of the full draft TAP report (expected spring 2023).
 - There is a contract underway on emerging contaminants, which will be used to help support the writing of sections of the TAP report.
 - TAP Work Group Co-Leads (WQB Co-Chairs) provided an update to the TAP Lead Commissioners in August.

- WQB Co-Chairs will be appearing before the Commission during the IJC's Fall Semi-Annual Meeting the week of October 17th to provide an update on WQB activities.
- Canadian WQB Co-Chair Gayle Wood will be completing her term on the Board Nov. 1, 2022. Gayle has served on the board since Feb. 2014, with the last 2.5 years as co-chair. Commissioners have appointed WQB member Chris McLaughlin as the new, incoming Canadian Co-Chair.

4. Project Updates (*G. Wood*)

WQB members were provided an opportunity to ask questions on written project updates provided in advance of the meeting. A brief verbal update was provided on the Great Lakes Horizons project. An update on the Nuclear Decommissioning follow-up work was provided as part of agenda item #13. A summary of the project updates and related discussion is provided below.

Great Lakes Horizons

The goal of the project is to understand the drivers that will have a significant effect on the Great Lakes (ecologically, economically, socially and culturally) over the next 10-50 years. It was noted that the work group continues to coordinate with the SAB on their Great Lakes Early Warning Systems project, given the linkages and connections between the two projects. The contractor hired to support the WQB's project recently developed draft scenarios for positive, neutral, and negative or degraded futures. The scenarios have been reviewed by the work group and will be circulated to select outside reviewers in October 2022. The contract work is expected to be completed in February 2023. The work group has also begun preliminary discussion regarding the development of a plan to communicate this work when completed. A slide deck was developed by the contractor illustrating progress on the development of the scenarios, which can be shared with WQB members for information.

Action Item: Board Secretary will circulate Great Lakes Horizons progress update slide deck with WQB members.

Follow-up and Critical Analyses of the Third Great Lakes Regional Poll

The analyses will include, trend analysis of the past three polls (2021, 2018, 2015); additional analysis in the context of other related polls and scholarly research; analyzing poll results and public perceptions compared to scientific reporting; and deepening understanding of poll results through focus group study and other demographic analyses. A contract was awarded for the poll analyses work, with a project kick-off meeting expected in early October. Work is expected to be completed in March 2023.

Climate Change Adaptation for Community Resilience Across the Great Lakes Region

The project will define and deliver a package of learning opportunities and planning tools that addresses climate change issues that create common challenges, or opportunities, for communities across the Great Lakes, particularly small to medium-sized communities. A consultant has been hired to assist with the project. A project kick-off is to be scheduled in the near future. This is a two-year project, expected to be completed by September 2024. It was noted that the Great Lakes Horizons project can serve as a foundational piece in the Board's climate change work.

Manure Management

A Collaborative has been created consisting of ~30 people including farmers, members of local government, agricultural organizations, watershed organizations, academics and corporate representatives. The Collaborative has held nine meetings since forming in Oct. 2021. A consultant was hired in June 2022 to collect and assess information on manure/nutrient inputs, policies/programs and management practices. The contractor is in the process of collecting data and information based on input provided by the Collaborative. The contract work is expected to be completed in January 2023.

Great Lakes Water Quality Agreement 50th Anniversary Review

The focus of the project is to review the GLWQA, to assess the context of how the GLWQA is focused and organized, and whether it could or should be structured differently to better facilitate progress towards its objectives and goals. The work group, based on consultant and other work, has prioritized a small set of recommendations to advance to the Commission, which will take the form of a letter to Commissioners. The letter is currently out for WQB member review and approval.

Watching Briefs

The board develops and maintains watching briefs to summarize significant developments, events and information in a factual manner on specific, defined topic areas. They are periodically updated and serve to keep the board informed on issues which have or could impact the waters of the Great Lakes.

Fossil Fuel Development and Transportation

Recent developments were highlighted that included, updates on economic drivers (i.e., oil prices, transportation) and an update on the proposed Line 5 Tunnel, where a US District Court Judge ruled in favour of the Bad River Band of the Lake Superior Tribe of Chippewa Indians, requiring Enbridge to pay damages for trespassing on tribal lands. The Judge also invited Enbridge and the Band to provide input on the terms of a permanent injunction, which will require the reroute of the pipeline around the Band's territory.

Great Lakes Nuclear

Recent developments included an announcement by the Nuclear Waste Management Organization (NWMO) of final candidate sites that are geologically suitable for the proposed underground facility for Canada's spent nuclear fuel - Ignace and South Bruce, ON. In addition, Grand Council Treaty #3 released a statement on the proposed deep geological repository in Treaty #3 Territory, citing the need for more agreements with the NWMO and importance of fact-based decision making.

Microplastics in the Great Lakes

Recent developments were highlighted that included, the release of a binational circular Great Lakes Strategy for plastics developed by the Council of the Great Lakes Region; first time detection of microplastics in meat, dairy products and blood of farm animals; and plastics manufacturers file a second lawsuit in response to the Government of Canada's final regulations to prohibit single-use plastics.

Great Lakes Coastal Assembly

The WQB continues to be apprised of the work of the Great Lakes Coastal Assembly (GLCA). The board's 2019 work on wetlands served as a catalyst for the GLCA to think more broadly about how to advance and accelerate coastal wetland efforts. The Lake Erie Pilot Steering Team, with the support of GLRI funding, will be guiding the implementation of a [Coastal Wetland framework](#) and has been meeting since June 2022. The [2022 Great Lakes Coastal Symposium](#) was held Sept. 19-21 in Sault Ste. Marie, the theme of which was identifying priorities for coastal system conservation and restoration in less-altered coastal ecosystems.

5. Presentation: Lake Simcoe Region Conservation Authority (LSRCA)

Robert Baldwin, Chief Administrative Officer of Lake Simcoe Region Conservation Authority, provided an overview on the management model used in the Lake Simcoe watershed. The Lake Simcoe watershed is 3,400 km² with a diverse habitat and generates \$350 million/year in recreation and tourism. The LSRCA, is one of 36 Conservation Authorities in Ontario – a watershed-based agency that operates under provincial legislation to conserve, restore and manage water, land and natural habitats. In 2009 the LSRCA was awarded the Thies International Riverprize for excellence in river and basin management. Between 1980 and 2009 focus was placed on nutrient loading, dissolved oxygen and coldwater fisheries and development of subwatershed plans for integrated watershed management. Many projects were undertaken targeting nutrient reduction, agriculture and soil erosion. Work was also undertaken to better understand the nearshore where residents meet and interact with the lake. Following this time period, the Lake Simcoe Protection Act, 2008 came into effect – a first of its kind watershed-based legislation in Ontario – with designated policies, actions and monitoring. Work has been undertaken to implement comprehensive stormwater management plans that includes strong partnerships with the development industry and adaptive response to climate change; a

phosphorus offsetting program, for “net zero export” with dedicated funding for urban restoration; and ecological offsetting for loss of natural habitat in designated growth areas. Climate change is a guiding principle in identifying and advancing strategies and actions. These programs were built based on other programs (e.g. TMDL) and also built to be transferable to other areas. Within the context of the Great Lakes, Lake Simcoe processes mimic those in the Great Lakes and can provide a near real-time ability to evaluate responses and changes to implemented actions.

6. 2023 Work Planning (J. Allan)

Work planning discussions were held over Day 1 and Day 2 of the meeting as part of agenda items #6 and #9. A summary of those discussions is provided here. Work plan projects can include continuation or next phases of current work; revisiting topics/issues explored in the past; and/or a new issue or topic that needs to be addressed. As part of the work planning process the projects identified should be consistent with the mandate of the WQB and purview of the GLWQA and consider other criteria such as, adding value to, or building upon, previous work; addressing knowledge gaps; and alignment/support with Commission priorities. In August members were solicited, via e-mail, for suggestions of topics to consider for work planning. Some of these topics included conducting the fourth Great Lakes Regional poll and communications of poll analyses findings; follow-up work to socialize and disseminate the outcomes of the Great Lakes Horizons work; analyzing the nexus between climate change and food security; indices to track progress against swimmable, drinkable, fishable; metrics for measuring impacts from climate change; and emerging contaminants and their management in the US and Canada. There was general support for continuing the Great Lakes regional poll; exploring metrics for measuring impacts of climate change; follow-up work to socialize/disseminate the Great Lakes Horizons work; and finding ways to increase the relevance of work (either as a separate effort or embedded within projects). Members will be provided with a summary of the discussion outcomes, for further consideration in identifying topics to advance for 2023 work planning. The goal is to have final work plans developed by the end of they year to advance to Commissioners in early 2023 for their consideration for approval.

Action Item: Board Secretary will circulate a summary of work planning topics discussed for further consideration by the Board in selecting topics for development of 2023 work plans.

7. Public Comments and Closing Remarks – Day 1

There were no members of the public present. Co-Chairs thanked members for their participation.

8. Meeting Opening - Day 2

9. 2023 Work Planning – Continued (J. Allan)

Summary of work planning discussion included under agenda item #6.

10. Presentation: Niagara River Remedial Action Plan

An overview of the Niagara Peninsula Conservation Authority (NPCA) was provided by Robert Foster (Chair, Niagara Peninsula Conservation Authority and Regional Councillor, Regional Municipality of Niagara, ON) followed by a presentation on the Niagara River Remedial Action Plan (RAP) by Natalie Green (Manager, Climate Change and Special Programs, Niagara Peninsula Conservation Authority).

The NPCA is one of 36 Conservation Authorities (CA) in Ontario – jurisdictions based on watershed boundaries that manage natural resources and governed by the *Conservation Authorities Act, 1946*. The NPCA offers programs and services that focus on flood management, source water and species protection, ecosystem restoration, and land management. The NPCA also promotes community stewardship and engagement through community science monitoring (e.g., turtle watch), environmental stewardship (e.g., tree planting) and school education programs.

The Niagara River is one of five connecting channels in the Great Lakes system - a source of drinking water, recreation and natural and cultural heritage. With the advent of hydroelectric power on the river in the 1890s, it brought colonization, chemical industries and a changing landscape. In a 1918 IJC report the Niagara River was identified as an area with significant sewage pollution. The 1987 GLWQA identified 43 areas of concern (AOCs), including the Niagara River, as a result of water quality issues and habitat loss. The 1987 GLWQA further called for the development of remedial action plans (RAPs) to guide local efforts to restore and protect water quality and ecosystem health in an AOC. The Niagara River is one of five binational AOCs, with both a US and Canadian RAP through which continual coordination occurs. In designating the area as an AOC, on the Canadian side, eight beneficial use impairments (BUIs) were identified (of a total of 14 BUIs). Highlights of actions toward achievement of delisting include:

- Actions to reduce bacteria at the beach – construction of bioswale, installation of valves in outflow pipes to prevent wildlife from entering and introducing fecal matter to water
- Habitat restoration and protection – creation of seven coastal wetlands, more than 30,000 native plants put in, almost 2 km of shoreline restored

Progress continues to be made toward BUI removal and ultimately delisting. As of 2022, four BUIs remain impaired (fish consumption, degraded wildlife, habitat loss, degraded benthos). Due to the intensive efforts to reduce bacteria at beaches, water quality has improved, and the beach closing BUI is under review for removal. It was noted that funding is key to implementing actions and accelerating delisting (as demonstrated via the US GLRI funding program), however it is also very dependent on the environment and how quickly it responds to actions (cannot rush mother nature).

11. Cross-board Project Updates (J. Allan)

Several WQB members serve on other advisory board project work groups. Brief updates were provided as well as included in the meeting package. A WQB member has also recently joined a newly started project by the SAB on *Great Lakes Winter Science*. Members also received a presentation on the joint SAB-WQB project on *Nutrient Synthesis*, as part of meeting agenda item #12.

Science Advisory Board (SAB) Great Lakes Science Plan

The project seeks to institute a research plan to ensure restoration dollars are spent with the greatest return on investment. A draft report was completed and underwent a courtesy review by the WQB in August. An initial draft document describing next steps to operationalize the Science Strategy was also developed.

SAB Great Lakes Early Warning System Phase 2 (GLEWS)

The project seeks an approach to identify a stressor or threat early, before it becomes a crisis. Five suspected stressors are being reviewed for case study analysis. An expert workshop was held in September to review interim findings, evaluate the analytical techniques, and evaluate the degree to which proposed approaches can be operationalized using available data.

SAB-SPC Traditional Ecological Knowledge (TEK)

The project will provide recommendations to the IJC on the inclusion of TEK into its scientific processes. A small virtual workshop with Knowledge Keepers and a literature review has been completed. A face-to-face listening session was held in September.

SAB-RCC Ecosystem Management through Adaptive Management

The purpose of the project is to assess the progress Annex 4 has made in establishing the Lake Erie Adaptive Management Framework. A survey was developed and circulated to invited experts, the responses to which are under review.

SAB-RCC Community Science

The project will establish a framework for the development of a community science handbook that summarizes best practices and provides guidance to develop and implement a reliable monitoring network.

By-invitation workshop sessions are scheduled for October and November 2022 to review preliminary findings, gaps and to identify and/or refine recommendations.

HPAB-WQB Large Basin Microbial Water Quality Study Plan

This study seeks to consider approaches to apply molecular and genomics tools to modernize and plan for advancing microbial source water quality assessment. A series of four expert workshops held between January and October 2022 are to culminate with the development of an implementation strategy to fund and advance use of molecular and genomics technologies and modernize microbial source water quality assessment(s) in the Great Lakes.

12. Presentation: SAB-WQB Nutrient Synthesis Project

This project began in September 2020 and seeks to assess federal Lake Erie Domestic Action Plans (DAPs) and their implementation to date, considering recent IJC nutrient-related recommendations. A secondary goal of the project is to explore priority issues concerning nutrient-related impacts in Lake Ontario. The SAB project co-leads Michael Murray and John Livernois provided an update on the work completed to date, including draft findings and recommendations of the work group's report. Work undertaken to date includes a contractor report, virtual expert workshop and a draft work group report. In April 2022, WQB members were provided with a presentation on the contractor report findings and recommendations. Since then, the work group co-leads have drafted a work group report, drawing heavily on the contractor report as well as some additional literature review around economics and policy and additional qualitative assessment of the DAPs. The recommendations developed are grouped according to actions for Lake Erie; science for Lake Erie; and science and action for Lake Ontario.

Members were provided an opportunity to provide preliminary, verbal feedback during the meeting. The slide deck will also be circulated to members to provide additional time for written, preliminary feedback. The draft work group report will be circulated to the WQB and SAB for concurrent review in mid- to late-October.

Action Item: Board Secretary will circulate Nutrient Synthesis slide deck to WQB members for preliminary feedback.

13. Nuclear Decommissioning Project Update (B. Hofmeister)

In April 2022, the WQB's report on *Decommissioning of Nuclear Power Facilities in the Great Lakes Basin* was publicly released. The report had four areas of recommendations (1) public engagement and transparency (2) waste storage considering climate change (3) transportation of spent nuclear fuel and (4) long-term monitoring. Since the report release the Board has held a series of by-invitation webinars with regulators (July 2022) and the Canadian Nuclear Waste Organization (September 2022) and a planned webinar with nuclear industry representatives in October 2022. The webinars and follow-up surveys were used to seek feedback on the feasibility of implementing the recommendations and what the IJC could do to help contribute to conversation around the topic of the water quality and temporary and permanent waste storage. The WQB will be collecting and summarizing the feedback received into a report to Commissioners. This report will also include advice on next steps Commissioners may wish to take with the report. Once ready, this report will be circulated to the Board for review and approval prior to submission to the Commission.

14. WQB Schedule of 2023 Meetings (J. Allan)

The WQB's 218th meeting is the last for the 2022 calendar year. The general schedule for WQB meetings for the 2023 year was reviewed:

- Late January/Early February 2023 – Video/teleconference
- Late April/Early May 2023– In-person at U.S. location in the Great Lakes Basin
- Late July/Early August 2023 – Video/teleconference

- October 2023 – In conjunction with IJC Fall Semi-Annual Meeting (Ottawa, ON)

Member suggestions for April/May 2023 meeting locations included, Alpena, MI; Duluth, MN; and Ashland, WI. Polls will be circulated to identify meeting dates and times.

Action Item: Board Secretary will circulate a poll(s) to identify WQB meeting dates and times for the 2023 calendar year.

15. Public Comments and Closing Remarks (Co-Chairs)

No members of the public were in attendance. WQB Canadian Co-Chair Gayle Wood was thanked and recognized for her nine years of service on the board and her leadership as co-chair over the past 2.5 years. Members were thanked for their participation and time to join the in-person meeting.