

**Great Lakes Water Quality Board
214th Meeting**

Summary of Discussion

October 7, 2021 9:00 AM – 3:00 PM ET
Virtual Meeting

U.S. Member Participants

Jon Allan (Co-Chair)
George Elmaraghy
Frank Ettawageshik
Steve Galarneau
George Heartwell
Brandon Hofmeister
Sara Hudson
Elizabeth Kirkwood
Kelsey Leonard
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
Chris Paci
Chloe Stuart
Mark Wales

US Member Regrets

Sandy Bihn
Christopher Korleski
Monica Lewis-Patrick

Observers

Emily Santoro – Ontario Ministry of the Environment, Conservation and Parks
Carola Torchia - Environment and Climate Change Canada
Melanie Ward - Ontario Ministry of the Environment, Conservation and Parks

Invited Guests

Joel Brammeier – Alliance for the Great Lakes
Shaun Collier – Mayor of Ajax, ON & Member City of Great Lakes St. Lawrence Cities Initiative
Beth Gibbons - American Society of Adaptation Professionals
Lucinda Johnson – University of Minnesota (Member of IJC’s Science Advisory Board – Science Priority Committee)
Megan Mader - Lake Education and Planning Services
Michael Twiss - Clarkson University (Member of IJC’s Science Advisory Board – Research Coordination Committee)

Public Attendees

Jon Altenberg - Great Lakes and St. Lawrence Cities Initiative
Matt Doss - Great Lakes and St. Lawrence Cities Initiative
Victoria Graves - Great Lakes and St. Lawrence Cities Initiative
Cameron Richardson - The Corporation of the Town of Ajax

Commission Staff

Raj Bejankiwar - Great Lakes Regional Office
Jennifer Boehme – Great Lakes Regional Office
David Burden – Great Lakes Regional Office (Director)
Matthew Child - Great Lakes Regional Office
Sheila Dugmore – Great Lakes Regional Office
Rajendra Poudel - Great Lakes Regional Office
Allison Voglesong Zejnati – Great Lakes Regional Office

Li Wang – Great Lakes Regional Office
John Wilson - Great Lakes Regional Office

Commission Liaisons

Victor Serveiss – U.S. Section
Paul Allen – Canadian Section

Secretariat

Antonette Arvai – Great Lakes Regional Office

Summary of Action Items

- **WQB Co-Chairs will solicit additional input from Board members on suggested topics for a detailed assessment for the TAP 2023 Report.**
- **Board Secretary will send e-mail to members confirming selected 2022 projects/activities and timelines for developing and finalizing work plans.**
- **Board Secretary will send a poll to members to identify specific dates and times for 2022 meetings.**

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

The WQB Co-Chairs welcomed members and guests to the 214th meeting of the Board. U.S. Board member Chris Korleski was congratulated on his reappointment. 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. It was acknowledged that Canada held its first National Day for Truth and Reconciliation on September 30th, to honour the lost children and survivors of residential schools, their families and communities.

2. 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 Triennial Assessment of Progress Work Group (TAP), led by the WQB Co-Chairs and comprised of the Co-Chairs of the Science Advisory Board and a Health Professional Advisory Board designate, are near completion of a TAP assessment framework. The framework is expected to be forwarded to Commissioners in early November.
 - The work group has also begun the process of identifying topics/issues for a detailed assessment for inclusion in the TAP 2023 Report.
- The WQB Co-Chairs will appear before the Commission during the IJC's Fall Semi-Annual Meeting on October, 21st to provide an update on WQB projects and activities.
- Recognition that WQB projects continue to advance and are on-track as well as continued WQB member participation on several cross-board projects (see item #4 and #5).
- Co-Chairs continue to participate in calls with WQB lead Commissioners to inform on WQB activities and raise issues of interest.

Action Item: WQB Co-Chairs will solicit additional input from Board members on suggested topics for a detailed assessment for the TAP 2023 Report.

3. Canada Environment Minister's Roundtable on Great Lakes Priorities (*M. Goffin*)

WQB member, Michael Goffin, provided a briefing on highlights from a Great Lakes priorities roundtable held by the Canadian Environment Minister in August 2021. Great Lakes stakeholders as well as First Nations and Metis were invited. The IJC's Canadian Co-Chair, Commissioner Béland, also

attended and provided highlights from the WQB's Great Lakes Regional Poll phone survey. Some priorities highlighted by roundtable participants included nutrients, shoreline resilience, climate change, aquatic invasive species, toxic chemicals and increased Indigenous consultation. There was also a general call for increased funding in actions to protect the Great Lakes.

4. Board Project Updates (G. Wood)

WQB members were provided with a presentation on the progress of the *Board's Great Lakes Water Quality Agreement (GLWQA) 50th Anniversary Review* project. Members were also provided an opportunity to ask questions on written project updates provided in advance of the meeting. A summary of the project updates is provided below.

GLWQA 50th Anniversary Review Presentation (G. Heartwell and M. Fisher)

The focus of the project is to review the GLWQA and its Annexes, 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. An online survey was distributed to select participants in the fall 2020 who have extensive experience working in the Great Lakes and with the GLWQA in an attempt to gather information regarding their insights and experience. A consultant was hired in June 2021 to conduct a literature on the GLWQA and its history; conduct interviews and surveys of key partners and groups; review and assess of the effectiveness of the current version of the Agreement; identify of success and opportunities for improvement. The project is expected to be completed, with a final report, by October 2022.

Great Lakes Horizons

The goal of the project is to understand the forces that will have a material effect on the Great Lakes (ecologically, economically, socially and culturally) over the next 30+ years. The contractor is developing narratives about future conditions in the Great Lakes, focusing discussion around drivers of change (e.g., population shifts due to migration). A set of engagement sessions are scheduled for the fall to explore management strategies to address the threats and opportunities that these drivers present.

Manure Management

A Project Oversight Work Group was created in June comprised of WQB members and external experts that work in agriculture and manure/nutrient management. The Work Group has been since developed a terms of reference and ground rules and invited persons to in join a larger Collaborative. The Collaborative consists of ~30 people including farmers, members of local government, agricultural organizations, watershed organizations, academics and corporate representatives. The first call of the Collaborative is expected to occur in mid-October 2021.

Nuclear Decommissioning

The work group completed a draft report that was submitted for WQB member review in April. Comments received have been addressed and the report revised. The revised report is expected to be submitted for WQB approval at the end of October. A follow-up plan has also been developed, which includes objectives for outreach and engagement, target audiences, and strategies/products to be used.

Great Lakes Regional Poll

Two contractor reports with the results of the telephone and on-line survey have been completed. A cover note has been drafted as a preface to the two contractor reports that explains the methods for each of the polls, discusses findings, and offers guidance on understanding differences in results. The cover note and contractor reports are currently under review by the Board. The report is expected to be forwarded to Commissioners in early November. A follow-up plan has also been developed to communicate specific results/messages to specific audiences using a variety of communications products.

Watching Briefs

Fossil Fuel Development and Transportation

Recent developments on Line 5 were highlighted that included, Canada formally invoking a 1977 treaty agreement between the Governments of Canada and the US concerning transit pipelines to request negotiations with the US., which ensures that neither party can take measures to interfere with the transmission of fuel. The Government of Ontario expressed support for this action.

Great Lakes Nuclear

Recent developments were highlighted that included the issuance of a license to Interim Storage Partners, LLC to construct and operate a consolidated interim storage facility for spent nuclear fuel in Andrews, Texas.

Microplastics in the Great Lakes

Recent developments were highlighted that included, recent research published on the impacts of biofilm growth on microplastics retention in the Great Lakes and the distribution, abundance and spatial variability of microplastic pollution on the surface of Lake Superior.

5. Cross-Board Project Updates

Several WQB members serve on other advisory board project work groups. Due to time constraints during the meeting agenda, verbal updates were not provided. Members were encouraged to reach out to the individuals who serve as cross-board members to receive an update on those projects that they have an interest in. One of those cross-board projects includes the Science Advisory Board's project on a *Great Lakes Early Warning System Phase 2*. Members received a presentation on this project as part of the subsequent meeting agenda item #6.

6. Presentation: IJC's Science Advisory Board (SAB) Great Lakes Early Warning System Phase 2 (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 Michael Twiss (Professor, Clarkson University) and Science Advisory Board Science Priority Committee member Lucinda Johnson (Associate Director and Water Initiative Director, University of Minnesota) gave a presentation on the SAB's *Great Lakes Early Warning System Phase 2* project.

In April 2020 the SAB released a report entitled *Towards a Great Lakes Early Warning System*, which focused on the development of a Great Lakes early warning system (GLEWS) framework to identify emerging stressors and threats in the Great Lakes. In September 2020, the SAB began undertaking a Phase 2 to their Great Lakes Early Warning System project, which focuses on developing analytical techniques and a risk analysis approach to identify emerging stressors and threats. The project considers five classes of threats – biological, chemical, nutrients, climate change and behavioural. Cases studies, focused on suspected stressors within each threat class, will be conducted using key components of an early warning system (such as risk detection, monitoring, alerting). Currently one case study has been completed (nutrients other than phosphorus), with the four others underway. The project is expected to be completed by December 2022.

7. Panel Presentation: Climate Change Adaptation and Resiliency in the Great Lakes Region (J. Allan)

During the WQB's April 2021 meeting the Board held a panel presentation to frame a set of thoughtful discussions around the issue of climate change, its consequences and response to its impacts on the Great Lakes region. As part of the WQB's October meeting, the Board again held a panel presentation to understand some recent climate adaption and resiliency initiatives being undertaken in the Great Lakes region. A summary of each of the three panelists' presentations is provided below.

Great Lakes and St. Lawrence Cities Initiative: Priorities and Actions for Coastal Climate Resilience
by Shaun Collier (Mayor of Ajax, ON & Member City of Great Lakes St. Lawrence Cities Initiative)

The Great Lakes St. Lawrence Cities Initiative (GLSLCI) is a binational coalition of over 135 U.S. and Canadian mayors working to advance the protection and restoration of the Great Lakes and St. Lawrence River. A current focus of the GLSLCI is coastal resilience in the face of a changing climate. Given that coastal communities are on the front lines of dealing with climate impacts, in the Spring of 2021, the GLSLCI conducted a survey of communities to understand the scope and magnitude of climate impacts on these communities. The survey found over 60% of communities are highly concerned about coastal issues (e.g., shoreline erosion, flooding, infrastructure damage) and have an increasing interest in addressing them. However, they have challenges developing climate action plans and monitoring the effectiveness of their efforts. The survey also found that to help solve these problems there is a need for increased public support; more technical expertise and staff; and increased funding. The survey estimated that there is an anticipated expenditure of \$2.21 billion (U.S.) over the next 5 years to address coastal impacts. Communities noted that support from state and federal agencies as very important to their efforts to respond to coastal issues.

Climate Adaptation in the Great Lakes: Moving Looking Beyond Climate Data to Holistic Resilience

By Beth Gibbons (Executive Director, American Society of Adaptation Professionals)

The American Society of Adaptation Professionals connects and supports climate adaptation professions to accelerate climate resilience in communities, ecosystems, and economies. Climate adaptation specialists integrate future climate information into their day-to-day work. In the Great Lakes region climate change impacts include shorter winters, earlier spring, less ice cover and more extreme precipitation events. A current focus of the organization is research on climate migration and demography, which is a new and under-researched topic. A key lesson from this research is that the Great Lakes region is not prepared to receive climate immigrants, as there is a lack of coordinated climate adaptation strategy and differences in standards and level of care of infrastructure between the U.S. and Canada. However, there is time to respond by forming a coordinated adaptation strategy and investing in infrastructure and policies that contribute to shared wellbeing of people.

The Great Lakes Are Not A Climate Haven, Yet

By Joel Brammeier (President & CEO, Alliance for the Great Lakes)

In the Great Lakes region water is an asset that attracts jobs and builds the economy. However, having a lot of water is not a climate resiliency strategy. Water should be part of a North American climate strategy; it is an integral part of many sectors including transportation, health, environment and economy. Population growth and economic growth is a positive thing, but it must be done sustainably and equitably. Climate change is and will continue to have impacts on the Great Lakes and its communities (both rural and urban) – the development of harmful algal blooms is exacerbated by increased nutrient loads from increased precipitation/runoff; unaffordability for infrastructure to handle increased precipitation; coastal erosion and property impacts. A large majority of the Great Lakes coastline is privately owned and coastal resiliency strategies need to benefit both the public and private sectors. Need to focus on both climate mitigation as well as adaptation and how the Great Lakes fit into a larger North American resiliency strategy. More needs to be done to address the root causes of climate stress in order for the region to become a haven.

8. Climate Change in the Great Lakes - Areas of Exploration by the WQB (C. McLaughlin)

In 2017 and 2019 the WQB completed reports on climate change adaptation and resiliency. Since the WQB's April 2021 meeting the Board has been revisiting the issue of climate change, its impacts and response actions, through various Board and invited panel discussions, as a means to consider undertaking a potential project and/or activities. During the WQB's July 2021 meeting the Board agreed to the formation of a small Climate Change Work Group to refine the various Board discussions into a short document on possible areas of exploration by the Board.

The work group presented a climate change adaptation proposal for the Board's consideration in advancing a project in the 2022 work cycle. The project proposes to focus on illustrating the

overarching, totality of issues related to climate change impacts and adaptation measures, through the lens of local/small communities, when it comes to their ability to plan, develop and implement adaptation strategies. In particular, where communities experience stumbling blocks and challenges in the adaptation process. The WQB proposal also recognizes a newly initiated IJC staff led effort on an IJC climate resiliency strategy and will seek to identify areas of alignment, linkage, and avoiding duplication.

9. WQB 2022 Work Planning (*J. Allan & G. Wood*)

Prior to the WQB meeting members were asked to provide suggestions for Board projects and activities to consider advancing in the 2022 work cycle. Topics suggested included climate adaptation (as presented in previous agenda item #8); additional analysis of Great Lakes poll data; areas of concern; watershed-wide water quality standards; and watching briefs on groundwater and the expanding field of “omics” technologies (e.g., genomics). The Board in discussing these topics also considered a number of items such as current Board workload/capacity; consistency with the mandate of the WQB and purview of the GLWQA; avoiding duplication, adding value to or building upon other work; and addressing issues/gaps not being addressed by others. The Board decided to focus on a small number of major projects, with the below receiving consensus support to move forward in 2022. Project work plans are to be submitted to Commissioners in early 2022 for approval.

- Project on Great Lakes Climate Change Adaptation
- Project to conduct analysis on the Great Lakes Regional Poll data
- Watching Briefs:
 - Groundwater in the Great Lakes Region
 - Expanding Field of “omics” (e.g., genomics, proteomics, metabolomics, metagenomics and transcriptomics)

Action Item: Board Secretary will send e-mail to members confirming selected 2022 projects/activities and timelines for developing and finalizing work plans.

10. Presentation: Effects of Shoreline and Watershed Development on Eastern Lake Michigan Drowned River Mouth Ecology (*J. Allan*)

Megan Mader, a former Graduate Assistant with Annis Water Resources Institute, Grand Valley State University, provided a presentation on her master’s thesis work on drowned river mouths (DRMs) in eastern Lake Michigan. Drowned river mouths are unique systems with riverine and large-lake influences that create biologically diverse ecosystems that are important to humans due to the ecosystem services they provide. The goal of the research was to understand the current state of DRMs related to anthropogenic development across eastern Michigan. In particular, the project sought to characterize watershed land use around DRMs; determine if gradients in environmental condition existed; and identified land cover types associated with DRM water quality. Watershed land cover plays a major role in the ecology of DRMs, with agriculture and development being significant stressors. Agriculture and development increased as one moved south through the state, with more forested lands toward the north. The results found a link between land use and water quality - areas with greater agriculture and development had water with increased specific conductivity, total phosphorus, and chlorophyll a and decreased water clarity. The research suggests that the impacts of land use at the watershed scale are a key driver of water quality among the DRMs in eastern Lake Michigan. This is useful information for managers and researchers concerned with coastal habitats in Lake Michigan.

11. Schedule of 2022 WQB Meetings (*G. Wood*)

The WQB's 214th meeting is the last for the 2021 calendar year. The general schedule for WQB meetings for the 2022 year was reviewed, as below. The scheduling of in-person meetings will continue to be dependent on the COVID-19 situation.

- January/February 2022 – Teleconference
- Spring/April 2022– U.S. location in the basin or Washington D.C. - In conjunction with IJC Spring Semi-Annual Meeting
- July/August 2022 – Teleconference
- Fall/October 2022 – Canadian location in Great Lakes basin or Ottawa, ON – in conjunction with IJC Fall Semi-Annual Meeting

Members suggested the Board meet in Windsor, Ontario in the fall of 2022, to coincide with the hosting of the U.S. and Canadian governments' Great Lakes Public Forum. This may present an opportunity for the Board/members to participate in celebratory activities commemorating the 50th anniversary of the GLWQA.

Action Item: Board Secretary will send a poll to members to identify specific dates and times for 2022 meetings.

12. 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, IJC and Great Lakes protection. The co-chairs thanked members and others for their participation in the meeting.