

International Rainy-Lake of the Woods Watershed Board

Summary of Discussion

Wednesday, April 27, 2021

2 – 3 pm CT (3 – 4 pm ET)

Virtual Meeting

Chair: COL Jansen

1. Welcome and Review of Meeting Materials

U.S. Member Participants

COL Karl Jansen (Board Co-Chair)
Doug Franchot
Pam Tomevi
Mike Hirst
Jim Stark
Kelly Sjerven
Patty Thielen
Scott Jutila (Secretary; Engineering Advisor)

Additional Participants

Kelli Saunders, International Watershed Coordinator
Abby Moore, USACE
Rebecca Seal-Soileau, USACE
Ryan Maki, AMC Co-chair
Teika Newton, AMC Co-chair
Amy Adrihan, MPCA
Lucas King, alternate for Chief Perrault
Joshua Jones, alternate for Al Pemberton
Amanda Bell, USGS
Claire LeNouray, ECCC
Beth Walker, MDNR
Daniel Rokitnicki-Wojcik, ECCC
Marie-Claire Doyle, ECCC
Carla Torchia, ECCC
Lisa Sealock, ECCC

Canadian Member Participants

Michael Goffin (Board Co-Chair)
Karen Cederwall
Todd Sellers
Kiley Shebagegit
Trina Rawn
Greg Chapman
Mark Lee
Megan Garner
Andrew Liddiard (Interim Engineering Advisor)
Matt DeWolfe Engineering Advisor
Wellsley Hamilton (Secretary)

International Joint Commission

Mark Gabriel, US Engineering Advisor
Rob Caldwell, Canadian Engineering Advisor
Carole Smith, Communication Director
Jennifer Boehme, IJC

Guests from ECCC, USGS and the IJC were welcomed to the meeting and thanked in advance for their special presentations. The new Canadian Engineering Advisor, Rob Caldwell was welcomed by the Board. Megan Garner was recognized as a Board member and the new Canadian Co-chair of the Water Level Committee.

The agenda was approved with the addition of flow forecasting subcommittee discussion added during the roundtable as requested by Mark Gabriel. The March 17, 2021 meeting summary was approved. Action items in the log were noted as completed or in progress by the Chair.

2. Aquatic Invasive Species Risk Assessment

Amanda Bell is an Aquatic Ecologist and hydrologist with 20 years of experience working for the USGS. She was contracted as the project consultant to: Develop a coarse filter to determine which species pose the most imminent risk to Rainy-Lake of the Woods Basin; and Determine the risk those species pose to Rainy-Lake of the Woods Basin. The project was funded through the IJC's IWI program to undertake a to:

The presentation reviewed the methodology Amanda used to develop a list of 10 AIS of most concern. Unlike the US, national data on AIS from Canada is not readily available. Naturalist and private citizens are predominantly the ones identifying AIS at this time. The full list of fish and plant AIS in North America was examined. Characteristics of each species was identified and 800km area around the Rainy-Lake of the Woods basin was considered as the region.

The Top 10 include the AIS that people are likely familiar with, but others may be new. It is possible that they are already in the basin but have not yet been identified. It is also possible that other species should be added, e.g. in the very high and high list. The next step includes finalizing the risk assessment report.

The Board inquired about the extent to which the risk assessment considered future impacts of climate change, e.g. range tolerance of AIS. Amanda identified that a next step could include detailing high priority species based on temperature ranges, for plants this could include parameters like daylight and ice conditions. The database developed for the IRLWWB is flexible, which allows fields to be added as information available

When asked about other next steps, Amanda stated that stopping the spread within the basin of the top 10 was important and preventing the ones that aren't there is key. Using social media, television, and newspaper to communicate to the public is generally a good practice.

Todd Sellers informed that this project was split into 2 phases. These results help understand what species the Board may want to do a deeper analysis on. The project was completed in partnership with the IMA AIS Sub-committee. It was intended to inform first steps for agency and organizations for developing policy approaches that are coordinated for targeting. Todd and IJC, Advisor, Mark Gabriel, recommend first bringing the results to the IMA and having discussions with AEHC before making any recommendations to the IJC or agencies.

- **ACTION:** AEHC to review results of the AIS Risk Assessment with the IMA and develop phase 2 proposal.

3. Environment and Climate Change Canada Lake Ecosystem Objectives and Phosphorus Reduction Scenarios

Daniel Rokitnicki-Wojcik was joined by Marie-Claire Doyle and Lisa Sealock from Environment and Climate Change Canada (ECCC) to present on Canada's progress towards addressing harmful algal blooms in Lake of the Woods. Board members were provided with a backgrounder in their meeting package. Daniel identified that further information on the Department's consultation page: [PlaceSpeak - Managing Algae Blooms in Lake of the Woods](#). A recorded presentation from the March Watershed Forum is also available.

The key steps of ECCC's approach includes describing potential desired ecosystem conditions for the lake i.e. Lake Ecosystem Objectives, identifying ecosystem indicators to determine when an ecosystem

objective has been achieved and applying computer models to determine the level of phosphorus reduction required to meet the objectives.

The proposed Ecosystem objectives are: 1. Maintain the diversity of trophic status (lake productivity) for different areas of the lake; 2. Maintain levels of algae below those constituting a nuisance and/or harmful condition; and 3. Minimize the extent of hypoxia (low oxygen events) in the southern basin to protect aquatic life and maintain a healthy aquatic ecosystem.

Proposed indicators for Objective 21 include total phosphorus and chlorophyll A. The proposed indicator for objective 2 is the bloom severity index which considers both size and intensity of the bloom. There was insufficient science to propose an ecosystem response indicator for Objective 3 at this time. An indicator for Objective 3 will be considered as more information becomes available.

Using a baseline representing a 3-year average from 2016-2018 (approximately 877 metric tonnes of phosphorus) ECCC developed 3 Phosphorus Reduction Scenarios: Scenario 1. 5% Load Reduction; Scenario 2. 20% Load Reduction, mainly representative of Rainy River; and Scenario 3. 30% Load Reduction, mainly representative of Rainy River. Given current science these proposed scenarios do not reflect climate change impacts.

Under each of the three scenarios, Total Phosphorus concentration in the lake decreases. This decrease occurs throughout the lake in each of the three zones or areas of the Lake. All three reduction scenarios meet objective 1. As it relates to chlorophyll A the indicator is met under scenario 3 and scenario 2 nearly meets the objective. Bloom severity is reduced in all three scenarios in Big Traverse Bay (South zone), where blooms are most frequent, intense, and severe. In all three scenarios, the most noticeable improvements occur in the southern portion of the lake. This is mainly because phosphorus loads are highest in this area (coming from the Rainy River), and where algae blooms are the most persistent and severe.

The Board inquired about whether conclusions would differ if different baseline years were used. Daniel indicated that this was a fair assumption. He highlighted that 2016-2018 was selected, as it represents years with good data coverage, varying load conditions and capture both dry and wet flow years.

The Board also discussed next steps related to the Objectives and Alerts project that was put on hold. Mike Goffin indicated that from ECCC's perspective the Department's Science Plan was clear at getting to a place to consult on lake ecosystem objectives. At this time ECCC need to process the feedback its received and collaborate with the Province to coordinate an approach. There are a number of partners and governance processes involved. ECCC has what it needs to assess things like alert levels and targets.

From a Board IJC perspective, the IJC should have enough to move forward with Objectives and Alerts. The Board is aware of Minnesota's plans and we know what Canada think in terms of the effects of algae. Todd Sellers noted that it is reassuring that ECCC and Minnesota are coming up with similar assessments, particularly in the southern part of the lake. It was recommended and the Board agreed that the recommendation the Commissioners made to proceed with binational target development should be revisited.

IJC Advisor, Mark Gabriel, asked what types of tools and models were used, particularly for phosphorus. Daniel indicated that a good part of the science plan was to develop a watershed model. An AEC3M and a SWAT model for the basin were used, but a specific objectives and targets task team identified objectives and indicators.

Rebecca Seal-Soileau from the IRLWWB Secretariat asked whether impacts being discussed might be influenced by a considerable or significant drought period. Daniel Rokitnicki-Wojcik suggested that drought conditions could be included in climate change scenario work that has yet to be done. The 2016 to 2018 year did include wet and dry flow to assess variability.

- **ACTION:** Board to revisit the 2018 IJC recommendation for the Board to develop bilateral phosphorus reduction targets.
- **ACTION:** AEHC to determine next steps for moving forward with the Objectives and Alerts project.

4. Lake of the Woods Water Level Study Discussion

Carole Smith, Communications Advisor with the IJC, noted that the previous Canadian IJC Advisor had asked for this agenda topic to be added. Carole provided an outline of the discussion for the Board.

Water regulation in the Rainy-Lake of the Woods watershed include different control boards and different governance regimes. For example, the Water Levels Committee from the IRLWWB manages the Rainy and Namakan Lake Rule Curves. The 1925 Canada-US Lake of the Woods Convention and Protocol dictates that the Lake of the Woods Control Board (LWCB) in Canada is responsible for regulating and controlling outflows from Lake of the Woods. The Convention resulted in the International Lake of the Woods Control Board, which is responsible for maintaining water levels on Lake of the Woods when the level is below elevation 1056 or exceeds elevation 1061 feet above sea level. When the Lake is between those levels water levels are managed by the LWCB.

The IJC's 2012 Report on Rainy-Lake of the Woods included 4 recommendations. The recommendations were included in the Board's meeting package for reference. Since 2012, there has been significant progress on recommendation #1 and #2 great progress. Water quality was identified as the top priority initially. In 2018, once the water quality mandate was up and running IJC recommended revisiting recommendation #3, which was for governments to provide the IJC with a reference to study the regulation of Lake of the Woods water levels and to provide governments with recommendations on any changes to the current regulatory approaches.

Indigenous voices in the basin and more recently indicate that there is general support to proceed with a study to help understand impacts on things like wild rice. The IJC recommends working with the Secretariat over the next 3 months on a questionnaire to determine next steps.

The Board wanted to know what the purpose and the outcome of this kind of study would be. Questions included what parts of the plan of study this would address and whether this was a communications question or something different? For example, if it was related to isostatic rebound, it is not clear if this is the way to proceed.

It was noted that regulation of Lake of the Woods does not happen in a vacuum and there is a significant proportion of water regulation that the LWCB is responsible for that are not international waters e.g. the English River. There are many constitutional and stakeholder interests that need to be considered. The risk of dividing communities in the basin was also noted.

Lucas King emphasized that conversations about water levels in Lake of the Woods have taken place on and off. He noted that it is an international watershed, the Canadian portion crosses multiple jurisdiction and there are cross-border considerations about how its managed. He stated that there will be continued

calls to do a study until a meaningful conversation takes place. He encouraged the Board to consider the basin as a whole given; the various players; the IJC's spirit of working together; and the notion that regulation in the watershed has binational impacts.

The Board agreed that objectives need to be clear if the IJC was to ask governments for a reference; ends, ways and means would need to be identified.

- **ACTION: IJC to work with Secretariat to Circulate IJC Questionnaire on Lake of the Woods Water Level Study.**

5. Mine Mapping Application

Jennifer Boehme, Secretary of the IJC's Health Professional Advisory Board (HPAB) presented on the GIS mine mapping application they have been developing. This presentation responds to an action item from a previous IRLWWB meeting.

There is variation in data availability across both countries in the international watersheds. An interactive map was developed specifically for the HPAB, but the data and sharing capabilities are open to other now.

When the Commissioners asked for this product to be completed, they identified a prompt timeline of 5 months. During the development of the product the HPAB identified the following needs: 1. The need to transfer of information from the current environment into an online application that could be shared with partners without risking changes to the underlying data set; and the need to update the map/application to support additional data search and visualization e.g. a map searchable by state and mine name, years in operations, year closed and mineral type; and a map where data layers can be selected not just by data source but also mineral type, and types and density of contaminant released. Next steps for the HPAB include drafting a white paper to complement the application and working with the IRLWWB to focus an investigation on vulnerability of mining.

The Board noted that there are some sites missing. Jennifer explained that the status of the application is like an extended proof of concept, but there is potential to get additional information and do quality assurance/quality control with more time and resources. The Board noted that iron mines are significant in the Rainy-Lake of the Woods basin.

IJC Advisor Mark Gabriel inquired about whether this was a pitch to do more work. This project was in response to an action item and the Commission's interest in focusing an investigation on vulnerability of mining in one basin somewhere. At this time, this basin is underrepresented in the current application.

6. Roundtable

IJC Advisor, Rob Caldwell, proposed that the Water Level Committee may wish to collaborate with the St. Lawrence as it relates to web and communication in particular as it relates to flow changes. He spoke about the Interactive Water Level graphics are available on the Lake Ontario St. Lawrence River Board. Todd Sellers inquired about the review of the IJC's IT strategy a number of months ago with other members of the Board and the Secretariat. Wellsley Hamilton agreed to follow up with Rob to provide additional details about the consultant that conducted the review and what was discussed.

IJC Advisor, Mark Gabriel identified that it would be good determine the next step for the Objectives and Alerts Project should be taken and that the Board will want to collaborate with MPCA and ECCC. He also noted that the Wild Rice IWI project was accepted and that any new IWI proposals are due on April 30th.

Mark shared that there is general push from the Commission for a review of the directive and governance for the Boards. He indicated that this may be less of an issue for this Board relative to other Boards along the border, however this may be something to add to the work plan.

Mark also explained that the Commissioners are very much engaged in Board activities. He noted there was a delay in this Board's submission of the annual report and referenced that other Boards have taken steps to streamline and shorten their reports.

The Commission has asked about the Flood Forecasting Committee as there is a need to look at flood forecasting based on the 2018 rule curve review. The next step will be to get in touch with the Water Level Committee.

There were no updates since the last meeting from the International Watershed Coordinator.

- **ACTION:** Secretariat to follow up with Rob Caldwell on IT discussion with consultant.
- **ACTION:** IJC to connect with Water Level Committee on a path forward for a Flood Forecasting Committee.

7. Closing Remarks

The meeting adjourned at 3:03pm CT.

Todd Sellers and Karen Cederwall identified the proposed nuclear waste management site for Ignace, Ontario as a potential watershed issue of concern.

- **ACTION:** Canadian Secretary to confirm whether location of proposed nuclear waste site is within the Rainy-Lake of the Woods Watershed.

Drafted by: Abigail Moore USACE, Wellsley Hamilton, ECCC, Scott Jutila USACE