INTERNATIONAL LAKE SUPERIOR BOARD OF CONTROL

Minutes of the 12 March 2020 meeting

The International Lake Superior Board of Control met on 12 March 2020 in the conference room at the Great Lakes Environmental Research Laboratory in Ann Arbor, Michigan. Mr. Stephen Durrett, US Chair, chaired and convened the meeting at 8:30 a.m. The attendees were:

United States		Canada
	Board Members	
Mr. S. Durrett		Mr. J-F. Cantin (phone)
Mr. K. McCune (Alt.)		
	Secretaries	
Mr. B. Carmichael		Mr. R. Caldwell
	Regulation Representatives	
LTC G. Turner		Mr. J. Bruxer
Mr. J. Allis (Alt.)		Ms. J. Ferguson (Alt.)
	Associates/IJC	
Commissioner Sisson		Ms. E. Klyszejko
Commissioner Yohe		Mr. B. Lismanis (phone)
Mr. A. Greely		
Mr. M. Colosimo		
Mr. J. Kart (phone)		
Mr. M. McLerren		
Mr. C. Sidick		
Mr. J. Feyen		

Item 1. Welcome and Introductions

Chair Durrett initiated a round of introductions.

Item 2. Approval of Agenda and Status of Prior Action Items

The agenda was approved as drafted. Mr. Carmichael reviewed prior action items and noted that all were completed except development of a performance indicator for Whitefish Island is still ongoing.

Item 3. Update from Regulation Representatives

a. *Hydrologic Conditions*

The Board was provided with an update on hydrologic conditions for Lakes Superior, Michigan-Huron, and Erie. Mr. Sidick presented slides showing recent net basin water supplies, levels and flows (observed and forecasted), precipitation, evaporation, water temperatures, snow and ice covers and climate outlooks.

b. *Regulation and Deviation Strategy Update*

i. *Review of winter (December 2019- April 2020) Deviation Strategy*

The US alternate Regulation Representative then provided an update on the Board's winter flow deviation strategy. On 13 December 2019, the Board received IJC approval

to temporarily deviate from Plan 2012 from December 2019 through April 2020. A gate setting equivalent to one gate fully open was maintained over the winter months instead of the typical winter setting equivalent to one-half gate open. This allowed a small amount of additional flow to be released through the St. Marys Rapids to offset expected and potential unscheduled reductions in flows at the hydropower plants that often occur in challenging winter conditions. Additionally, the higher rapids flows from December through April provide an increase in wetted habitat for fish that have already spawned in the rapids or that may over-winter in this area. Actual total Lake Superior outflows were close to those prescribed by Plan 2012 in December 2019 through February 2020, as the small amount of additional flow through the St. Marys Rapids offset the reductions in flows at the hydropower plants that occurred. The total amount of water released through the St. Marys River in March and April is expected to be slightly more than what is prescribed by Plan 2012. The effects of this deviation is currently expected to be a reduction of approximately 1.3 cm on Lake Superior and an increase of less than 1 cm Lake Michigan-Huron.

ii. *Proposed May- November 2020 deviation strategy*

A potential May to November deviation strategy was discussed and the benefits to the St. Marys Rapids of spreading the side channel flow deficits over the time period was emphasized. It was noted that there is currently not as much scheduled hydropower maintenance, and therefore lower gate settings are expected this spring compared to other recent years. The question was raised if the Board needs to request deviation authority this year. It was also noted that the Board could also make use of its minor discretionary deviation authority should an unexpected hydropower outage occur. It was suggested that securing additional deviation authority proactively in case the need to deviate from plan occurred would allow for quicker reaction times to any unforeseen hydropower outages.

Further discussion revealed that current conditions and planned hydropower outages did not constitute the need for a deviation request at this time. The Board decided to monitor conditions with the intent to adhere to plan-prescribed flows unless undue circumstances arise which would warrant Board consideration of a deviation request.

iii. *Potential Deviations to reduce M-H levels*

The Board presented information showing forecasted Plan 2012 flows versus previous years to demonstrate the effectiveness of the balancing principle at reducing flows due to the comparatively high M-H levels. This led to discussion about whether or not the Board should explicitly deviate from plan flow to help reduce M-H levels further. The Board discussed the small amount of water (less than 1 cm) added to Lake Michigan-Huron over the winter months owing to the deviation strategy. Because of the effectiveness of the balancing principle in the plan, and the very small magnitude of water level increase due to the winter deviation, the Board decided not to request a special deviation.

Item 4. Hydropower

a. Recent and Expected Maintenance and Other Outages

Evolugen

As of July 2019, Evolugen is the new identity for Brookfield Renewable Canada. Planned unit outages at Evolugen's Clergue plant totaled zero hours during the reporting period. Unplanned outages during the reporting period totaled 1,911 hours (43.8 percent of the reporting period) and were owing to runner blade repairs on Unit G2. Evolugen has ordered a backup runner blade to ensure that any future issues can be remediated quickly. Annual maintenance on each of Units G1, G2 and G3 is scheduled to take place in April, May and June 2020.

U.S. Government Hydropower Plant

There were 44 unit outages totaling 2,595 hours. Most of the outages (1,557 hours, 60 percent) were due to three significant projects, specifically the modernization of five exciters, replacement of four electrical switchgears, and new turbine scaffold for four hydro generators. An unscheduled outage of Unit 10 accounted for 761 hours (29 percent) and 225 hours (9 percent) were due to other unscheduled outages. Twenty-eight hours (1%) were due to planned maintenance outages, 16 hours were due to anchor ice, and the remaining eight hours were due to external issues.

Cloverland Electric Co-op (CEC)

Canal restoration work did not resume on 1 September as originally anticipated due to delays in getting special materials for the repairs. Cloverland Electric Co-operative (CEC) ran at capacity for the fall season. The flow was approximately 765 m^3/s (27,000 ft^3/s) for the September through November time period. High tailrace water levels have impacted the plant by lowering the available head, affecting power production; however, flows were still near normal for the winter months, averaging 750 m^3/s (26,500 ft^3/s).There was only one anchor ice interruption experienced on February 8th resulted in flow reductions for four hours.

The canal restoration work is expected to resume in late April 2020 and continue through June, with an estimated 595 m^3/s (21,000 ft^3/s) total outflow capacity expected. No work is expected in the fall. An assessment will be undertaken this summer assessing future capacity of the plant. Within the next couple of years, all turbines and governors will be replaced but there will be no significant impact on flows.

b. 2020 flow measurements

No flow verification measurements were taken this reporting period. Hydropower canal flow measurements using Acoustic Doppler Current Profiler (ADCP) technology are scheduled to take place this summer at all three plants during 11-13 August. These measurements are typically performed every five years to verify the discharge reported by the plants. The measurements are to be taken during times of steady and specified flows so that verification can be made on a range of data. A measurement summary report will be completed shortly thereafter.

Item 5. Compensating Works

Inspections and Maintenance

Routine monthly maintenance inspections continued to be conducted on the Canadian portion of the Compensating Works by Evolugen. In addition to the monthly inspections, the 5-year dam safety assessment is planned for 2020. An independent consulting engineer will be contracted to undertake the inspection of the Compensating Works structure and the earth dam north of the structure. In addition, inspection of the upstream and downstream underwater components of the structure (Gates #1 to #8 inclusive) is planned. A procedure for the operation of Gate #1 has been drafted and submitted to the

regulatory agencies for their approval. With this support, application will be made to the International Joint Commission requesting temporary amendment of the 11 December 1985 Supplementary Order of Approval, to facilitate the operation of Gate #1.

The cold joint and crack in the concrete apron downstream of Gate #8 is also planned for repair in 2020.

The monthly maintenance inspections continued as normal on the US portion of the Compensating Works by the US Army Corps of Engineers, and were found to be in good working order. A gate-movement strategy has been developed and the automated gates are working well. They are readily able to keep the water level in the rapids from changing more than the recommended 10 cm per hour and rates are slowest for gate settings equivalent to 1 to 4 gates fully open.

Action Item: Board Secretaries to include Gate 1 closure Supplementary Order requirement in semi-annual appearance slide deck.

Item 6. GLAM Committee and Superior Board Task Update

a. *FY2020 work plan*

In October 2019 the IJC was given funding from US government to begin an expedited review of the Lake Ontario – St. Lawrence River Regulation Plan 2014. Despite the focus of GLAM activities on the lower Great Lakes basin, several key initiatives continued in support of the ILSBC. Mr. Allis provided an update to the Board on the status of several GLAM work plan items in progress to support the Board. GLAM staff are currently working on the plan evaluation and review process for 2019. This analysis will be very similar to what was done for reviewing the 2018 and 2017 conditions. Water levels and flows recorded in 2019 will again be compared to simulated water levels and flows under Plan 2012 and previous Plan 1977-A. These plan evaluations should be completed during the spring of 2020, and results will be ready for discussion at the Fall Board meeting. The results will allow the Board to compare the water levels and flows experienced last year due to the implemented regulation strategy with what would have happened if the Board had followed the plan.

b. *Projects specific to the Upper Great Lakes*

An update on upper Great Lakes projects was provided to the Board. This includes:

- Data collected in late 2019 in support of the Integrated Environmental Response Model (IERM2D). More detailed information about the substrate in the St. Marys Rapids was collected, along with Side Scan Sonar (SSS) and aquatic plant species information in portions of the river just downstream of the rapids. These data will then be used in 2020 to improve the IERM2D. Additional field data was collected in December of 2019 as gates were closed down to the winter setting at the Compensating Works. This should be an annual practice for the next few years to help gather this information that will be important to further development of the IERM2D.
- USACE staff continue to monitor the St. Clair River for potential changes in its conveyance. Bathymetric data was collected in the St. Clair River in 2019 and a report will be completed by fall of 2020 comparing the channel geometry to the last bathymetry collected in 2012.

- Much information about the impacts of the high water have been gathered for use in future evaluations of regulation plans. One piece of this effort is the creation of a GIS database of all Corps regulatory permits that were issued for shore protection on the upper Great Lakes. This database can be used in the future to update any coastal impact models with updated details on shore protection type, location, and proposed height.
- Following complaints from lower St. Marys River shoreline owners, USACE began working with the USCG to identify data that could be collected to help the USCG decide if speed restrictions may be a solution to reduce flooding and erosion caused by ship wake. USACE staff plan to deploy wave gages and other equipment during the fall to collect these data in support of this effort.

c. *Other recent and expected tasks*

Additional initiatives include the development of a performance indicator for flooding on Whitefish Island, and the possibility of a performance indicator exploring the rate and magnitude of month-to-month gate changes at the Compensating Works and the effects on conditions in the St. Marys Rapids. These efforts will be aided by the improvements to the IERM2D model.

To help provide better guidance on the rate of change for specific gate movements, the Board agreed to put together an operational guide on those procedures. The intent of this is to provide guidance about which gate setting changes may provide the most extreme impacts on water level fluctuations in the rapids, along with suggested rates that the gates should be moved at to minimize potential stranding of fish.

The Board members also asked what the next steps would be to add the deviation strategy implemented over the last several years into permanent Board operations. Potential options were discussed, ranging from adjustment of current deviation authority or changing of the regulation plan code itself. It was agreed that the Board would discuss options for this path forward and prepare to discuss at the next meeting.

A joint workshop with GLAM and the Great Lakes Boards is planned for 15 September in Montreal, Quebec.

Action Item: GLAM to share routine hydrological & plan evaluation updates with Board/IJC/public.

Action Item: GLAM to draft an operations guide for 10 cm/hr gate movement threshold.

Action Item: GLAM to develop a Whitefish Island performance indicator for flooding

Action Item: GLAM/Reg Reps/IJC to decide appropriate future deviation request procedure.

Item 7. Communications

a. *Communications challenges due to the high water*

i. *Long Lac/ Ogoki and Chicago River Diversions.*

It was noted that there is a significant amount of misinformation circulating on the effectiveness of manipulating the diversions on water levels as well as the Board's authority to implement any changes to the diversion flows. The Board has been in the process of developing an informational fact sheet describing the minimal im-

pacts of altering the diversion flows on the Lakes and the entities that have authority over the diversions. This fact sheet will be completed and posted to the Board's website.

Action Item: Board staff to finalize diversions backgrounder.

ii. Media relations

USACE Detroit District has done a considerable number of media interviews and outreach with local stakeholders in the lakes Superior and Michigan Huron watersheds. The key messages communicated are coordinated between the Regulation Representative offices. These events included approximately 50-100 engagement events on Lake Michigan-Huron and approximately a dozen on Lake Superior. Additionally, the Detroit Emergency Management (EM) office coordinates with county EM officials to keep them up to date on risks and impacts from specific events. Canadian Regulation Representatives have provided a number of informational presentations to Canadian Conservation Authorities and responded to many media requests as well. It was noted that GLAM is looking into securing IWI funding to help coordinate a series of local official engagement meetings similar to what had been done on the US side around Lake Ontario.

iii. Communications products

The Board continues to publish monthly press releases as well as a new monthly infographic describing key issues that occurred that month. It was suggested to tie in the USACE Buffalo District PAO for communication support.

b. 2020 Meeting with the Public

The Board discussed different modes of executing the public meeting and noted that previous public virtual webinars had not received the greatest interest or public participation. The IJC has had some success in hosting general public webinars addressing the high water issues revolving around Lake Ontario and the St. Lawrence River. It was suggested that the Board could perhaps coordinate with the other Great Lakes Boards to hold a tri-Board webinar this summer and address concerns of the public throughout the Great Lakes Basin. It was decided to explore this option and coordinate with the IJC if feasible.

Action Item: Board secretaries to explore the feasibility of a Tri-Board webinar coordinated with the IJC

c. 2020 Engineer's Day

The 2020 Engineers day is scheduled for June 26th. Representatives from the Board will be in attendance.

d. Website/Facebook Updates

It was noted that the Facebook page continues to support updates and postings. Monthly regulation updates continue to be flagged on Facebook and garner comments on the content of the announcements. There was some discussion on the need for website improvements and it was noted that the Board will pursue potential improvements to the aesthetics and content of the website.

Item 8. Construction of new Poe-sized Lock

It was noted that ongoing work on the Lock included construction of upstream channel deepening, design of new lock chamber, and solicitation of bids for upstream approach walls. An updated project information sheet is available on-line and the location of this sheet will be distributed to the Board. The project is on schedule to be completed in the spring of 2030.

Action Item: US Regulation Representative to share PDF of Poe Lock reconstruction handout to Board.

Item 9. Review Semi-Annual Progress Report

The US Secretary requested receipt of any additional comments or changes to the draft semi-annual progress report. He will incorporate changes, update the available data, and distribute advance copies to the IJC prior to the April 10th deadline for report submission.

Item 10. Other Business

a. *Discussion on status of Board member expansion.*

The Board discussed the pros and cons of recommending an expanded Board or development of a Board Advisory Group (AG). It was noted that there were no significant pros to expanding the Board currently, however there were benefits noted from instituting an advisory group. It was noted that ideal composition of an AG would be representatives from interest groups including coastal property owners, First Nations, tourism, and local elected officials. It was decided that further planning is needed to assess the pros and cons of implementing an AG for the Board, and discussion with IJC Commissioners would be required.

Action Item: Secretaries to include an Appearance slide with pros/cons of a community advisory group.

There was discussion on how to include COVID-19 messaging in Board communications.
Action Item: Board staff to coordinate appropriate COVID-19 protocols as necessary.

No other additional business was noted.

Item 11. Upcoming Meetings

a. *IJC Appearances*

Mr. Carmichael noted that the Appearances have been tentatively scheduled for the week of April 20th, but that considering the impacts of COVID-19 it would likely be virtual. Updates will be provided to the Board as soon as available information is distributed.

b. *Fall Board Meetings*

Mr. Carmichael noted that the fall Board meeting would be held on 17 September in Montreal, Quebec. The GLAM workshop will be held on 15 September in Montreal, Quebec.

c. *GLAM meetings*

Mr. Carmichael noted that there will a committee work-plan meeting in June in Burlington, ON. Invitations will be extended to Board members once the date has been finalized.

Item 12. Action Item Review

Mr. Caldwell noted several major actionable items during this meeting which are referenced in bold throughout this document.

Item 13. Closing Remarks and Adjourn

Mr. Durrett and Mr. Cantin thanked everyone, and there being no other business, Mr. Durrett adjourned the meeting at 11:55 am.

INTERNATIONAL LAKE SUPERIOR BOARD OF CONTROL
Board Meeting, 12 March 2020, 8:30 am to 12:00 pm

NOAA Great Lakes Environmental Research Laboratory
4840 South State Road, Ann Arbor, Michigan 48108

AGENDA

1. Welcome and introductions [Durrett] (0830-0840)
2. Approval of agenda and status of prior action items [Durett, Carmichael] (0840-0845)
3. Update from Regulation Representatives [Allis] (0845-0930)
    a. Hydrologic conditions
    b. Regulation and deviation strategy update
        i. Review of Winter deviation (Dec to Apr deviation strategy)
        ii. Proposed April-November deviation strategy
        iii. Potential deviations to reduce M-H levels
4. Hydropower [Lismanis, LTC Turner] (0930-0945)
    a. Recent and expected maintenance and other outages
    b. 2020 flow measurements
5. Compensating Works (0945-1000)
    Inspections and maintenance [LTC Turner]

Break (15 min)

6. GLAM Committee and Superior Board task update (1015-1045)
    a. FY2020 work plan [Leger/Allis]
    b. Projects specific to the upper Great Lakes [Leger/Allis]
    c. Other recent and expected tasks [Leger]
7. Communications (1045-1115)
    a. Communications challenges due to high water
        i. Long-Lac/ Ogoki Diversions
        ii. Media relations
        iii. Communications Products
    b. 2020 meeting with the public [Carmichael]
    c. 2020 Engineer's day [Sidick]
    d. Website/Facebook updates [Carmichael/ Ferguson]
8. Construction of new Poe-sized lock [LTC Turner] (1115-1125)
9. Review semi-annual progress report [Carmichael] (1125-1130)
10. Other business
    a. Discussion on status of Board member expansion (1135-1140)
11. Upcoming meetings [Carmichael] (1140-1150)
    a. IJC Appearances – week22 April (1015 AM-1045 AM)
    b. Fall Board meetings - 17 SEP AM Montreal (CMM headquarters)
    c. GLAM meeting –1st week of Jun 2020
12. Action item review [Caldwell] (1150-1155)
13. Closing remarks and adjourn [Durrett] (1155-1200)