

INTERNATIONAL LAKE ONTARIO - ST. LAWRENCE RIVER BOARD
Board Meeting 11 March 2020 – 9:00 am to 4:05 pm
 Great Lakes Environmental Research Laboratory
 Ann Arbor, MI

The meeting began at 9:00 am (EDT) with the following participants:

United States		Canada
	Board Members	
Mr. S. Durrett, Chair Mr. K. McCune, Alt. Chair Mr. T. Brown (ph) Mr. R. Company (ph) Mr. A. David Dr. D. Kuehn (ph) Mr. B. Reilich (ph)		Dr. G. Béchard, Chair Mr. J. Aubry-Morin Ms. P. Clavet Ms. J. Frain Mr. M. Hudon (ph) Ms. S. Miron
	Secretaries	
Mr. B. Carmichael		Mr. R. Caldwell
	Regulation Representatives	
LTC J. Toth Ms. L. Schifferle (Alt.)		Mr. J. Bruxer Ms. J. Ferguson (Alt.)
	IJC Commissioners	
Ms. J. Corwin (ph) Mr. R. Sisson Mr. L. Yohe		Mr. P. Béland Mr. H. Lickers (ph) Ms. M.-A. Phare (ph)
	IJC Staff	
Mr. M. Colosimo Mr. A. Greely		Mr. D. Fay Ms. E. Klyszejko
	Associates	
Mr. J. Allis Ms. E. Cuddihy Mr. P. Davis Ms. C. Fisher (ph) Mr. K. Koralewski (ph) Mr. A. Kornacki (ph) Ms. M. Kropfreiter Mr. T. Lavigne Ms. D. Lee Mr. J. Scharf Ms. S. Wagner		Mr. B. Crosby (ph) Ms. G. Faveri (ph) Ms. S. Grady (ph) Ms. W. Leger Mr. B. Morton (ph) Mr. P-M Rondeau (ph) Dr. F. Seglenieks Mr. M. Shantz

1 Roll, Opening Remarks, Objectives

Mr. Durrett and Dr. Béchard opened the meeting with a roll-call and introductory remarks. Ms. Lee welcomed everyone to GLERL before giving a brief introduction to its Great Lakes Science Plan. Mr. Durrett offered a warm welcome to the IJC Commissioners in person and on the phone. Members were encouraged to speak in confidence with the best interests of the entire basin in mind, and not any particular stakeholders or interest groups. IJC guidance on consensus decision making and public affair policy and procedures was recently circulated for reference and it was reiterated that these guidance documents must be followed by all Board members.

2 Approval of Agenda

The agenda was adopted as amended (attached). Items 4c regarding an overview of historic hydrologic conditions and 5d regarding correspondence from the Seaway Corporations was added.

3 Previous Action Items

All action items from the 22 October 2019 and 21 February meeting were marked complete or deferred. Some actions were carried forward as follows:

- NGS to host a special workshop in Washington in April to update the Board on the IGLD 2020 update. NGS officials will provide a packet of material in advance of the workshop. (scheduled workshop – no packet seen yet)
- Coordinate a workshop with Mr. Bernard Gigas and Ms. Sarah Delicate. (GLAM and Board staff continue to advise Mr. B. Gigas of regulation processes and limitations in the Lake Ontario St. Lawrence River basin.)
- IJC advisors to lead development of a roles and responsibilities storyboard for online website(s). (draft nearly finalized)
- Canadian Commission Chair P. Béland and Canadian Board member P. Clavet will meet with Quebec provincial authorities Friday 13 March to arrange for better coordination and transfer of Quebec snow data for Board and US forecasts.
- Secretaries recirculated member directives and other business documents from the IJC

to members.

- The US secretary sought consensus from two members absent from the 21 February teleconference.
- Co-chairs approved GLAM's long- and short-term strategies
- A response letter to the Seaway Corporations is being prepared.
- The next IJC check in webinar was scheduled.
- A media release will be prepared to reflect recent Board decisions.
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4 Current Conditions and Regulation Overview

a. Regulation Overview

The US Alternative Regulation Representative presented the current conditions and regulation overview, highlighting the continuing near or above record-high water levels of the upper Great Lakes. Lake Ontario remains very high as well, but below record-highs for this time of year. Lake Erie continues to contribute record high flows into Lake Ontario and net basin supplies to Lake Ontario have also continued to be above average. This has resulted in record-high net total supplies over the past six months (September 2019 – February 2020).

The Board has continued to undertake major deviations to provide all possible relief to riparians, both upstream and downstream of the Moses-Saunders Dam, while also considering the effects on all interests. With Lake Ontario water levels now slightly below the criterion H14 high water thresholds, the Board has been operating under its extended deviation authority that will continue to apply until Lake Ontario's level has peaked in 2020. The total average outflow released during the last six months (September 2019 through February 2020) was a record-high 9,140 m³/s. Outflows have been maximized as much and as quickly as possible, while also considering critical and dynamic conditions within the St. Lawrence River.

Lake St. Lawrence levels have fluctuated widely in recent months in response to the frequent adjustments to Lake Ontario outflows. Water levels on Lake St. Louis and in the Montreal area remained above average owing to the very high outflows.

Representatives from the Ottawa River Board provided an update on Ottawa River conditions.

The Ottawa River basin has an overall snow water equivalent that is roughly 130% of the 30-year

normal for the first week of March, but less than the 150% of normal at this time last year. Future precipitation is unknown and the rate of melt is uncertain. In 2019, late snow melt combined with heavy spring precipitation and high snowpack to cause record high volume and peak Ottawa River flows.

b. Review of Deviations executed in reporting period

Plan 2014 continued to prescribe very high, and at times record-high, outflows and the Board continued to conduct major deviations and set outflows even higher than Plan 2014-prescribed outflows when possible. Outflows were maintained at 200 m³/s above the applicable Plan 2014 L Limit through the fall. Outflows were adjusted frequently during the winter and record-high outflows were possible in January and February owing to very mild weather and minimal ice cover in the St. Lawrence River.

c. Overview of the Great Lakes – St. Lawrence River High Water Event and Hydrologic Conditions

The Canadian Regulation Representative provided an overview of the ongoing high water event that has severely impacted the entire Great Lakes – St. Lawrence River system in 2019 and continuing into 2020.

Photos and videos were shown of flooding, erosion and other coastal damages that have occurred throughout the upper Great Lakes, along both shores of Lake Ontario, and in the St. Lawrence River system, including the upper St. Lawrence, Lake St. Louis and the shores of Lake St. Peter, downstream of Montreal. Persistently, and at times extremely wet weather, lasting several years has been the primary driver of rising water levels throughout the Great Lakes basin. The past 5-years were the wettest on record in the US states bordering the Great Lakes according to NOAA, and the past 3 years from 2017 through 2019 were also the wettest 36-months on record across the Great Lakes and Ottawa River basins according to European reanalysis datasets. This resulted in both record-inflows to Lake Ontario and record-outflows through the St. Lawrence River over this 36-month period. Comparing historical water levels to precipitation records over the past century shows strong correlation between periods of wet and dry weather and high and low water levels, respectively, throughout the Great Lakes, including the recent rise during the past three years of wet conditions.

It remains uncertain how long this period of wet weather and high water levels will last. Winter has generally been the most persistently wet season in recent years, whereas spring has shown more variability, with extremely wet springs in 2017 and 2019, but less wet conditions in 2018, for example. Water levels throughout the system, from Lake Ontario and the upper St. Lawrence River, down through the lakes around Montreal, the lower St. Lawrence River and Lake St. Peter, all continue to be driven primarily by water supplies; however, in comparison to pre-project conditions, all areas have benefited from regulation and the construction of the St. Lawrence Seaway/Moses-Saunders Dam project. Significant excavation in the upper St. Lawrence River allows higher outflows to be released in the summer, fall and winter, which helps to reduce Lake Ontario levels prior to spring, while the dam allows outflows to be reduced during the Ottawa River freshet, which helps to lower peak levels in the lower St. Lawrence River in the spring. Forecasts of various water supply scenarios and regulation strategies were presented for the Board's consideration as it continues to assess options available to try to address high water this spring.

5 Board Discussion on Deviation Strategy through June 2020

a. L Limit Deviations

The Board discussed at length the effects of regulated outflows on various interests. Winter is over and ice conditions are no longer a limiting factor. Instead, with high outflows expected to continue, the Board must now consider the effects on commercial navigation, including the difficulties that ship pilots would face with high currents at the opening of the season. High velocities within the river pose a safety risk to navigation and in particular, the shifts in the cross-currents at several critical locations are a concern. The Seaway representatives on the Board's Operations Advisory Group reported that mariners could at times navigate higher outflows (above flows prescribed by the Plan 2014 L Limit) if the conditions in these critical areas were safe to do so. To help inform mariners of the conditions they might expect in these critical locations, the Seaway has been working with the Canadian Hydrographic Service and Environment and Climate Change Canada to obtain hydrodynamic model results that would provide information on velocities and cross-currents under various water level and outflow scenarios. Verification of these results and the actual conditions experienced this spring will require ongoing

communications and feedback from mariners transiting the system. The first pilots to transit would need to test the performance of the vessels under the cross-current conditions at the critical locations. Feedback from these first transits would be essential in understanding the river conditions and relaying the safety of the system. Therefore, the Board decided by consensus to set outflows at the maximum Plan 2014 L Limit when the navigation season opens on 1 April. Outflows will then be increased as quickly as possible to whatever maximum outflow is deemed to be safe for maintaining navigation, and subject to downstream conditions, at the discretion of the Regulation Representatives in consultation with the Operations Advisory Group, and the Technical Working Group with feedback from the mariners.

b. F Limits

Regulation Representatives presented the probabilities of peak water levels on Lake Ontario when outflows were released after 1 April targeting various levels of Lake St. Louis at Pointe Claire. The Board has already decided to forego the first tier of the Plan 2014 F-limit, and a level of 22.20 m is currently being targeted. The next tier, at a level of 22.33 m causes minor flooding around Lake St. Louis, and there is potential for additional impacts at this time, owing to shore ice that remains in this area. Nonetheless, forecasts suggest a high probability that this level will be reached at some point this spring, and the Board discussed targeting this level earlier to further reduce levels of Lake Ontario and potentially reduce the risk of higher levels of Lake St. Louis later this spring. In consideration of these factors, the Board decided that starting immediately, it would set outflows to aggressively target water levels at Lake St. Louis at 22.20 m, understanding that the target may be exceeded for brief times, depending on Ottawa River flows and weather conditions, even if Lake Ontario water levels were below its lowest level of the F-Limits. Other tiers of the F Limits for Lake Ontario and Lake St. Louis would be respected as the Board continues to maximize outflows in order to remove as much water as possible from Lake Ontario.

c. Communication Strategy with IJC

Since Commissioners were in attendance at the Board's meeting where March conditions were reviewed and heard the Board's outflow strategy decisions, the Board would not need to inform the IJC by webinar. The Board would notify the IJC by letter of its decisions.

d. Correspondence with Seaway Corporations

The Board would respond to the recently received correspondence from the Seaway Corporations.

6 Gauging Committee

a. Outstanding Gauging Committee Reports

The 2018 and 2019 Gauging Committee Reports are underway after delays caused by priority commitments of dealing with the high water, and staff turnovers. The Committee will present these reports to the Board by 31 December 2020. The 2017, 2018 and 2019 Peaking and Ponding reports are also nearing completion; the Power Entities will also submit them by 31 December. OPG apologized for the delay and assured the Board that they are committed to returning to the regular schedule for preparation of the reports.

b. 2019 Scheduled Inspection Activities/Precision Survey update

Barring delays from any COVID-19 restrictions, the annual inspection will occur July 2020. The precision survey, which was to take place in 2018, ten years after the last one in 2008, was delayed by agreement/contractual issues, which will soon be resolved.

7 Public Outreach Activities

a. Overview of face to face meetings in reporting period

Secretaries urged Board members and staff to notify them of all occasions when they explained Lake Ontario Outflow regulation to the public, whether in detailed group settings or summarized email correspondence.

b. Public Outreach Webinars

In consideration of the two planned webinars to be hosted by the IJC for April and May, the Board will schedule a webinar in July 2020.

c. Website and Social Media Update

The Board continues its outreach through its website and its Facebook page. In January 2020, the Board launched a new [webpage](#) on its website focused on both the 2017 and 2019 high-water events <https://ijc.org/en/loslrb/watershed/2017-and-2019-high-water-events>. The webpage consolidates the related materials (including questions and answers, related reports and videos) following a recommendation in the [Province of Ontario's Special Advisor's report on flooding](#).

d. Communication plan and associated products

The Communications Committee met in person in December where it developed a communication plan focusing on the following products

- 1) Quarterly Newsletters: Spring 2020 issue in development
- 2) Video Products: US Secretary working on Statement of Work for a feature video, a story map explaining the recent maximum outflow strategy is almost ready and another story board of the system is nearing completion
- 3) Targeted Technical Products: Comparison of Plan 2014 performance versus former Plan 1958-DD, 2019 Q&As to be referenced in the IJC webinars as many people are unaware of their availability.

8 Power Entity Updates

a. OPG

The Canadian OPG plant has continued to release the maximum capacity of its turbines, however in April turbine outages will require lowered turbine flows (so potentially increased spillage).

b. NYPA

The outage of one turbine and the demand for high outflows have required winter operation of the Long Sault Spillway under challenging icy conditions. The opening and closing of spillway gates has been a manual operation requiring a crew of two. FERC is requiring the installation of a boat barrier by the end of 2021. Until its installation, buoys will notify river users of the dangers of high currents in the proximity of the spillway gates.

9 GLAM Committee

a. 10 March GLAM meeting update

The Great Lakes–St. Lawrence River Adaptive Management (GLAM) Committee met the day before to discuss its expedited review of plans 2014 and 2012 (for Lake Superior outflows)

b. Board review/approval process update

The GLAM Committee will provide products to the Board for their review and Co-Chair approval as produced with a table summary of the status for each going forward.

c. IWI Project status and summary

The projects are underway and include: i) an economic assessment of halting commercial navigation on the Seaway, ii) engaging south shore Lake Ontario municipalities regarding high-water impacts, iii) assessing critical ice conditions during low-water periods on Lake St. Lawrence, iv) assessment of low-water thresholds on Lake St. Lawrence to protect drinking-water infrastructure, and v) assessment of ecological impacts of low-water drawdowns on Lake St. Lawrence in the wintertime..

d. Expedited Plan 2014 Review status

The IWI projects are included in a two phase expedited review of Plan 2014, approved by the Board and IJC, fully funded by the governments. Further work, such as hydroclimate studies, forecasting improvements, a plan comparison on a weekly basis, investigations into potential adjustments to the F-Limits, and possible adjustments to the Criterion H14 trigger levels are scheduled.

e. FY20 Work Plan Update

GLAM indicated that the FY20 work plan was prepared under the assumption that more normal conditions would be prevalent this year. However, due to the pervasive high water conditions throughout the entire Great Lakes, priorities had shifted and much of its efforts were now focused on the expedited plan review and the short and long term plan evaluation strategies circulated for Board approval.

f. Feedback/Study requests from Board

None were noted.

10 Semi-Annual Report Review

The Canadian Secretary requested that Board members review its Semi-Annual Report for the period 1 September 2019 to 29 February 2020 and submit any comments by close of business Friday, 20 March 2020 to allow for timely submission to the IJC.

11 Other Business

a. Seaway Technical Working Group Update

The Seaway Technical Working Group (STWG) identified five critical reaches in the St. Lawrence River where cross-currents at high outflow rates made navigation particularly dangerous. The gradient of the river, which is dependent on the water level of Lake Ontario, winds and the outflow rate, is more critical to navigation safety than the actual outflow rate. ECCC is developing

hydraulic models to aid in navigation. Static model simulations, based on a number of Lake Ontario water elevations and outflow rates, will provide information on the two dimensional velocities and cross-currents under various scenarios, and will be ready soon to help mariners to be aware of expected conditions. However, real-time hydrodynamic model simulations, which will run operationally and include wind impacts and real-time water level conditions, will take longer to develop but should provide more timely and better estimates of cross currents and velocities as weather and hydrologic conditions vary. There are also plans to install acoustic Doppler velocity meters to help further calibrate and validate the models. Mariners will provide regular feedback to the SWTG on transiting conditions in the St. Lawrence Seaway.

b. Spring Appearances in DC (week of 22 April)

The Board will hold its next face to face meeting in the afternoon of Tuesday, 21 April 2020 at a Washington DC site yet to be determined. The Appearance will be the morning after. A Board teleconference is scheduled for 1:00 pm, Friday 27 March 2020 if conditions warrant.

c. Fall Board meeting: September in Montreal

Ms. S. Morin has graciously offered to host the fall 2020 Board meeting at the Centre Communautaire Offices in Montreal Wednesday, on 16 September. GLAM will consider interest in a second joint workshop with the Boards the day before. The Boards' Secretaries will coordinate with Ms. Morin and will relay information to all involved as soon as possible.

12 Action Item Review

The Canadian Secretary reviewed each of the following action items:

- The Board will prepare a media release of its outflow decision for April.
- The Board will write the IJC informing them of their decisions.
- The Board will respond to the recent Seaway letter.
- The Gauging Committee to complete its outstanding 2017, 2018 and 2019 reports.
- Board members and staff to notify Board secretaries of all public outreach activities undertaken since September 2019 by 20 March 2020 for inclusion in the 133 Semi-Annual Report.
- The Communications Committee will plan a public outreach webinar for July 2020.
- The IJC will reference the Board's communication products in its webinars.

- The GLAM Committee will provide products to the Board for their review and Co-Chair approval as produced with a table summary of the status.
- Board members will review its Semi-Annual Report to submit any comments by close of business Friday, 20 March 2020.
- Mariners will provide regular feedback to the Seaway TWG on transiting conditions in the St. Lawrence Seaway.
- The Boards' Secretaries will coordinate with Ms. Miron and will relay information on September 2020 Board meeting to all involved as soon as possible.

13 Closing Remarks and Adjourn

Mr. Durrett thanked everyone for a successful meeting and great communications, and thanked IJC Co-Chairs Corwin and Béland for attending. The meeting adjourned at 4:05 pm.

INTERNATIONAL LAKE ONTARIO - ST. LAWRENCE RIVER BOARD

Board Meeting 11 March 2020 – 9:00 am to 4:30 pm

NOAA Great Lakes Environmental Research Laboratory

4840 South State Road, Ann Arbor, Michigan 48108

Teleconference: 1-877-336-1839 /Access Code: 5162099 /Security Code: 3910

Web Meeting: <https://usace.webex.com/meet/bryce.w.carmichael>

AGENDA

1. Roll, Opening Remarks, Objectives [Durrett] 9:00 am
2. Approval of Agenda [Durrett] 9:10 am
3. Previous Action Items [Carmichael] 9:15 am
4. Current Conditions & Regulation Overview [Schifferle] 9:30 am
 - a) Regulation Overview
 - b) Review of Deviations executed in reporting period
 - c) Overview on historic hydrologic conditions [Bruxer]
5. Board Discussion on Deviation Strategy through June 2020 [All] 10:00 am
 - a) L Limit Deviations
 - b) F Limit Deviations
 - c) Communication strategy with IJC
 - d) Response letter to Seaway – RE 10 March letter
- BREAK (10 min) 11:35 am**
6. Seaway/ Board Technical Working Group update [Schifferle, Lavigne] 11:45 am
7. Gauging Committee [Schifferle] 11:55 am
 - a) Status of 2018 and 2019 reports
 - b) 2020 scheduled inspection activities/Precision Survey update
- Lunch (1 hour) 12:00 pm**
8. Communication Committee [Hudon, David, Carmichael, Caldwell] 1:00 pm
 - a) Overview of face to face meetings in reporting period
 - b) Public Outreach Activities – Webinar?
 - c) Social Media Update
 - d) ECCC guidance for employee/ public interaction?
 - e) Communication Plan and associated products
 - (1) Quarterly Newsletters
 - (2) Video Products
 - (3) Targeted Technical Products (Plan Comparison, 2019 FAQs, etc.)
9. Power Entity updates [Davis, Morton] 1:30 pm
 - a) OPG
 - b) NYPA
10. GLAM Committee [Leger, Allis] 2:00 pm
 - a) March 10 GLAM meeting update
 - b) Board Review/ Approval Process update

- c) IWI Project Status and summary
- d) Expedited Plan 2014 Review status
- e) FY20 Work Plan updates
- f) Feedback/ Study requests from Board

BREAK (15 min)		3:00 pm
11.	Semi- Annual Report update [Caldwell]	3:15 pm
12.	Other Business [Carmichael/ Caldwell]	3:30 pm
	a) Spring Appearances in DC (week of 22 April??)	
	b) Fall Board meeting: September XX. Montreal??	
13.	Action Item Review [Caldwell/ Carmichael]	4:00 pm
14.	Closing Remarks and Adjourn [Durrett]	4:20 pm