



## **COVER PAGE**

**Top:** Sentinel-2 satellite (obtained 10 February 2019) showing extensive ice cover on Lake St. Lawrence and in the Beauharnois Canal

**Middle:** Sentinel-2 satellite image (obtained 20 February 2020) showing open water on Lake St. Lawrence and a partial ice cover in the Beauharnois Canal

**Bottom (left and right):** Photos (taken 28 February 2020) of ice jam at the forebay of the Beauharnois generating station

## EXECUTIVE SUMMARY

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Conditions during the reporting period (September 2019 through February 2020) were much wetter than average, with record net total supplies in early 2020, due in large part to the persistently high inflows from Lake Erie observed throughout this time. Overall, the six-month average net total supply is the highest since reliable records began in 1900. As a result, Lake Ontario's water level remained well above average throughout the reporting period, but below record highs.

The International Lake Ontario-St. Lawrence River Board (Board)'s strategy during the reporting period was to continue 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. Given the continuing near record-high water levels on all of the Great Lakes and the elevated risk of high water levels in 2020, the Board requested extended deviation authority that would continue to apply after Lake Ontario water levels fell below criterion H14. By letter dated 9 October 2019, the International Joint Commission (IJC) approved the Board's request to continue deviating from Plan 2014 until Lake Ontario's level has peaked in 2020. The extended deviation authority, combined with very mild weather and minimal ice cover in the St. Lawrence River this winter, allowed the Board to release a record amount of water from September 2019 through February 2020.

The Board met in person twice and remotely eight times during the reporting period, along with IJC advisors, associated subcommittees, and advisory groups, to conduct business and assess conditions. The Communications Committee, individual Board members, the secretaries, and the regulation representatives were actively engaged in outreach, information exchange and liaison with members of the public, legislators, government agencies, journalists and other stakeholders throughout the Lake Ontario – St. Lawrence River system. Notably, on 9 December 2019, the IJC and the Board held a joint webinar to explain and answer questions from elected officials about high water levels in the Lake Ontario–St. Lawrence River system. The Board continued to operate and maintain its website and launched a new page focused on the 2017 and 2019 high-water events.

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\*[Appendix B](#), available on the [Reports Library page](#) of the Board's website, provides the background information that had been included in the main body of these reports previously, allowing this report to focus on the issues and conditions of the reporting period.

# 1 HYDROLOGICAL CONDITIONS

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## 1.1 LAKE ONTARIO BASIN - NET BASIN SUPPLY

Monthly net basin supplies (NBS) to Lake Ontario (see [Appendix B](#) for definition) for September 2019 through February 2020 and the average (1900-2018) for the six-month period are provided in Table 1. Net basin supplies were above average from September to February.

## 1.2 SUPPLY FROM LAKE ÉRIE

Reflecting the near- or above-record-high water levels in the upper lakes, the inflows to Lake Ontario from Lake Erie during the reporting period were near or above record high from September through February (Table 1). The six-month average inflow to Lake Ontario from Lake Erie during the reporting period is the highest since reliable records began in 1900.

## 1.3 LAKE ONTARIO – NET TOTAL SUPPLY

The monthly net total supplies (NTS) to Lake Ontario (see [Appendix B](#) for definition) are provided in Table 1 and shown graphically in Figure 1. Figure 1 shows the long-term average monthly NTS for the period 1900 to 2018 and the supplies so far for 2020. Also shown, for comparison purposes, are the monthly NTS for 2017, 2018 and 2019. The grey horizontal bars are the long-term monthly NTS maxima and minima. Net total supplies were well-above average in September through December 2019 and record high in January and February 2020 (Table 1). Overall, the six-month average net total supply is the highest since reliable records began in 1900.

## 1.4 OTTAWA RIVER BASIN

Outflows from the Ottawa River basin were below average (1963-2018) through most of the fall (Figure 2). Ottawa River flows then rose rapidly in January following a major storm (11-12 January) and then declined slowly, reaching average by the end of February.

# 2 REGULATORY OPERATIONS

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## 2.1 REGULATION OVERVIEW

Figure 3 shows actual daily outflows from Lake Ontario for 2017, 2018, 2019 and 2020 (through February). Table 2a summarizes the weekly outflows and Table 2b lists all of the flow changes that were made during the reporting period.

The Board’s strategy during the reporting period was to continue 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. Given the continuing near record-high water levels on all of the Great Lakes and the elevated risk of high water levels in 2020, the Board requested extended deviation authority that would continue to apply after Lake Ontario water levels fell below criterion H14.

By letter dated 9 October 2019, the IJC approved the Board's request to continue deviating from Plan 2014 until Lake Ontario's level has peaked in 2020.

Overall, the total average outflow released from 1 September 2019 to 29 February 2020 was a record-high 9,140 m<sup>3</sup>/s, compared to 8,970 m<sup>3</sup>/s for the same period in 1986-87 and 8,300 m<sup>3</sup>/s for the same period in 2017-18.

In September, outflows were maintained at 200 m<sup>3</sup>/s above the applicable Plan 2014 L Limit. This was achieved by adjusting outflows on a weekly basis according to the level of Lake Ontario. Outflows averaged 9,580 m<sup>3</sup>/s during the month, 350 m<sup>3</sup>/s above the previous record-high September monthly mean outflow set in 1986.

Near-record-high outflows continued in October. Outflows were reduced over the 11-13 October weekend to temporarily raise water levels of Lake St. Lawrence and facilitate the removal of recreational boats and other equipment. Otherwise, outflows continued to be maintained at 200 m<sup>3</sup>/s above the applicable weekly Plan 2014 maximum L-limit values.

Outflows were again near record-high values in November. Outflows were temporarily reduced between 4-7 November to facilitate Hydro-Quebec's annual removal of safety booms in the north Coteau channel of the St. Lawrence River prior to winter. This requires reduced flows in this section to ensure safe work conditions. In addition to boom removal, significant numbers of stranded fish must also be removed, as this drawdown occurs to ensure environmental compliance. With outflows from Lake Ontario so high this year, Hydro-Québec reviewed its maintenance schedule and made special arrangements in order to maximize the flow through the Beauharnois generating station during this time and minimize the flow reduction required from Lake Ontario. Otherwise, outflows continued to be maintained at 200 m<sup>3</sup>/s above the applicable weekly Plan 2014 maximum L-Limit values.

Outflows were maintained at 200 m<sup>3</sup>/s above the applicable weekly Plan 2014 maximum L-Limit values for most of December. Late in the month, cold temperatures initiated ice formation, and outflow adjustments were required temporarily for ice management in the Beauharnois Canal. Mild temperatures caused the ice cover to deteriorate and, with the closure of the Seaway navigation season, outflows were increased rapidly to well above the maximum L limit and reached 10,000 m<sup>3</sup>/s by the end of the month. Outflows averaged 8,800 m<sup>3</sup>/s in December, which was the second highest December monthly mean outflow on record, 460 m<sup>3</sup>/s below the record high set in 1986.

Lake Ontario outflows far exceeded previous January record highs. The high outflows were achievable owing to very mild weather and minimal ice cover in the St. Lawrence River. An outflow of 10,700 m<sup>3</sup>/s was reached temporarily on 2 January. As water level conditions in the St. Lawrence River above and below Moses-Saunders Dam adjusted to the increased outflows, this high outflow proved unsustainable. Outflows were subsequently adjusted slightly to maintain the operating head at the Moses-Saunders dam above critical low levels, as the record-high outflows caused extremely low levels immediately upstream of the dam and extremely high levels immediately downstream of the dam. At the same time, the extremely high outflows caused levels of Lake St. Lawrence to fall slightly below the Plan 2014 I-Limit minimum of 71.8 m, and caused levels at Lake St. Louis to approach the applicable Plan 2014 F Limit. Despite the adjustments, outflows remained above 10,000 m<sup>3</sup>/s until 11 January, an exceptionally high outflow for this time of year.

Following a major storm on 11-12 January, outflows were again adjusted to maintain Lake St. Louis levels near the Plan 2014 F-Limit threshold of 22.10 m. A brief cold period caused ice formation to resume at the Beauharnois Canal on 17 January. Outflows were reduced temporarily as ice formed, but gradually increased thereafter as mild weather deteriorated the ice cover once again. In January, 28 outflow adjustments were made as the Board continued to maximize outflows as much as possible and whenever weather, ice and water level conditions permitted. The monthly average outflow from Lake Ontario was 9,210 m<sup>3</sup>/s, a new record-high for the month of January, 2,910 m<sup>3</sup>/s above average (1900-2018) and 740 m<sup>3</sup>/s above the previous January record set in 1986.

Lake Ontario outflows continued to exceed previous record highs in February. Cold weather returned and caused ice to form on the Beauharnois Canal for the third time this season beginning 7 February. Nonetheless, as ice conditions stabilized, outflows were gradually increased. The high flows along with anchor ice also caused water levels to rise at Lake St. Louis, which required temporary outflow reductions to maintain levels near the Plan 2014 F-Limit threshold of 22.10 m beginning on 18 February. Outflows were gradually increased again after as conditions permitted. Mild and sunny weather caused the ice cover to thin and deteriorate, and the high outflows and ice movement then caused extremely high water levels downstream of the Moses-Saunders Dam. These high water levels approached the top of a weir in a structure in the City of Cornwall's wastewater treatment system, requiring the Lake Ontario outflow to be decreased on 24 February. The outflow was decreased again on 26 February in an attempt to maintain stable ice conditions in the Beauharnois Canal area during a major winter storm on 26-27 February. Despite the flow reduction, strong winds and the high flows resulted in significant ice movement from Lake St. Francis into the Beauharnois Canal. This resulted in an ice jam and caused a major drop in water levels at the forebay of the Beauharnois generating station, as well as at the water intake for the City of Beauharnois, requiring Lake Ontario outflows to be decreased further. Fortunately, the ice jam disappeared quickly following the return of mild temperatures in the days that followed. A total of 28 outflow adjustments were made in February as the Board continued to maximize outflows whenever weather, ice and water level conditions permitted. The monthly average outflow from Lake Ontario was 9,540 m<sup>3</sup>/s, a new record-high for the month of February, 3,060 m<sup>3</sup>/s above average (1900-2018) and 930 m<sup>3</sup>/s above the previous February record set two years ago in 2018.

It should be noted that January and February were two of the most operationally demanding months of the last several decades for the Board's regulation representatives and Operations Advisory Group (OAG), including Ontario Power Generation (OPG) and New York Power Authority (NPA) staff at the Moses-Saunders Dam, and Hydro-Québec staff at the Beauharnois – Les Cèdres complex. Water levels, weather, and ice conditions were continuously monitored, and frequent adjustments to the gates at Long Sault Dam as well as at the various structures at Beauharnois – Les Cèdres complex were required as the outflows were maximized as much and as quickly as possible, while also considering critical and dynamic conditions within the St. Lawrence River.

## **2.2 DEVIATIONS FROM REGULATION PLAN 2014**

Figure 4 shows daily outflows for 2019 (lighter blue line) and January through February 2020 (darker blue line) compared to the weekly Plan-specified outflows from Lake Ontario (black squares) as well as preproject flows (blue circles). All of the outflow changes, including operational adjustments, minor and major deviations that occurred during the reporting period, are also summarized in Tables 2a and 2b. Operational adjustments are required to account for uncertainty and variation in conditions within the

week in order to maintain the intent of the Board's outflow strategy and are not required to be paid back by subsequent offsetting outflows.

Plan 2014 continued to prescribe very high, and at times record-high, outflows during the reporting period and the Board continued to conduct major deviations and set outflows even higher than Plan 2014-prescribed outflows when possible. Minor deviations were also necessary at times, including during temporary outflow reductions to facilitate boat haul-out on Lake St. Lawrence (11-13 October) and owing to capacity limitations at Hydro-Quebec's Beauharnois and Coteau facilities during the annual removal of safety booms (4-7 November).

### **2.3 WATER LEVELS THROUGHOUT THE SYSTEM**

Figure 5 shows the daily levels of Lake Ontario for 2017, 2018, 2019 and 2020 (through February). Lake Ontario's water level remained well above average (1918-2018) throughout the reporting period, but below record highs. Lake Ontario's water level remained above the Criterion H14 high trigger levels through December. Water levels were near the trigger levels in January and then remained slightly below the Criterion H14 high trigger levels after the week ending 7 February. Water levels of all the other Great Lakes were near or above record water levels during the reporting period. Owing to the record-high inflows, Lake Ontario's water level would have been significantly higher if not for the extremely high outflows that were released.

As a means of determining the effect of regulation activities on levels and outflows, a comparison of Lake Ontario's actual monthly levels and outflows to those that would have occurred under preproject conditions (i.e. the levels and outflows that would have occurred had regulation not been undertaken) is provided in Table 3. This summary shows that Lake Ontario was approximately 66 to 86 cm (2.2 to 2.8 ft) lower than it would have been without regulation throughout the reporting period. A comparison of the daily levels to long-term average, preproject levels (blue circles), and computed Plan 2014 levels (black squares) in 2019 and 2020 is also shown in Figure 6. By the end of the reporting period, the level of Lake Ontario would have been 13.4 cm (5.3 in) higher if major deviations had not been undertaken beginning on 10 June 2019.

Lake Ontario levels continued their seasonal decline through the fall, dropping 24 cm (9.4 in) in September (seventh largest decline on record for this month), 8 cm (3.2 in) in October (below-average decline) and 4 cm (1.6 in) in November (average decline). Lake Ontario levels then began their seasonal rise and increased 2 cm (0.8 in) in December, which is an average rise for that month. In January, Lake Ontario's level rose 13 cm (5.1 in), more than the average rise of 5 cm (2 in), as the record-high outflows only partially offset the record-high inflows, which included record-high inflows from Lake Erie and very wet conditions around Lake Ontario largely driven by the major precipitation event on 11-12 January. In February, inflows from Lake Erie remained record-high while local conditions in the Lake Ontario basin were closer to average, allowing the record-high outflows to exceed the inflows. This resulted in Lake Ontario declining 5 cm (2.0 in), while on average the lake rises 3 cm (1.2 in) in February. On the last day of the reporting period, Lake Ontario was at a level of 75.10 m (246.39 ft), which is 47 cm (18.5 in) above average and 18 cm (7.1 in) below the record-high level for this time of year set in 1952.

The water levels of Lake St. Lawrence at Long Sault Dam (Figure 7) were generally well-below average (1960-2018) owing to the high outflows through the fall, except when outflows were reduced to raise levels temporarily in Lake St. Lawrence to assist with boat haul-outs (11-13 October). The flow

reduction, combined with the impact of southwest winds, resulted in a water level rise on Lake St. Lawrence of approximately 60 cm (23.6 in). Lake St. Lawrence levels also rose above average when Lake Ontario outflows were temporarily reduced owing to capacity limitations at Hydro-Quebec's Beauharnois and Coteau facilities during the annual removal of safety booms (4-7 November).

During the winter, Lake St. Lawrence levels fluctuated from very high levels to very low levels as Lake Ontario outflows were frequently adjusted. Lake St. Lawrence levels rose when Lake Ontario outflows were decreased during the four periods of ice formation at the Beauharnois Canal. As described in Section 2.4, the gates at Iroquois Dam were lowered to suppress high Lake St. Lawrence levels between 17 and 31 January. As ice conditions stabilized and when the ice cover deteriorated, Lake Ontario outflows were increased and Lake St. Lawrence levels declined. In early January, levels were near the winter I-Limit threshold of 71.80 m (designed to protect municipal water intakes) and reached a minimum daily mean of 71.67 m on 9 January. Levels temporarily reached 71.55 m for a few hours on 9 January, but no impacts to water intakes were reported.

Daily water levels at Summerstown on Lake St. Francis were generally above average (1960-2018) from September through December. Daily mean levels remained above the Seaway low alert level throughout of the navigation season. Water levels were generally below average in January and near average through February.

The daily water levels on Lake St. Louis at Pointe-Claire (Figure 8) remained above average (1960-2018) throughout the reporting period owing to the very high Lake Ontario outflows. The January monthly mean Lake St. Louis level was the highest since the start of regulation in 1960 and the February monthly mean level was also near record high. Lake Ontario outflows were adjusted several times in January and February to maintain Lake St. Louis levels near the F-Limit threshold level of 22.10 m (72.51 ft) that applies when the level of Lake Ontario is less than 75.30 m (247 ft).

The daily levels at the Port of Montreal (Figure 9) and at Sorel on Lake St. Peter (Figure 10) also generally remained above average throughout the reporting period.

## **2.4 IROQUOIS DAM OPERATIONS**

The recreational navigation gates (#28 and #30) at Iroquois Dam remained lowered through 16 September 2019. The navigation gates are generally closed to recreational boaters for safety reasons when Lake Ontario outflows are greater than 9,500 m<sup>3</sup>/s.

The gates at Iroquois Dam were partially lowered on 17 January 2020 in anticipation of rising Lake St. Lawrence levels owing to expected Lake Ontario outflow reductions to facilitate stable ice formation in the Beauharnois Canal. Iroquois Dam is not normally operated in winter until an ice cover has been fully established downstream on Lake St. Lawrence, as lowering gates can cut off the supply of ice from further upstream and can increase the risk of premature ice bridging at the structure, both of which can leave open water and increase the risk of frazil ice generation downstream. However, the high Lake Ontario levels also elevated the risk of high levels on Lake St. Lawrence during flow reductions this winter. Water levels of Lake St. Lawrence rose as high as 73.54 m during this time, but remained below the maximum operating level at Saunders headwater station. Significant ice formation did not occur upstream of Iroquois Dam or on Lake St. Lawrence and the ice cover in the Beauharnois Canal was lost by 30 January, allowing the gates at Iroquois Dam to be raised again on 31 January. Colder weather returned in February and ice

began forming again in the Beauharnois Canal. However, the required outflow reductions were temporary and not so low as to require the gates at Iroquois Dam to be lowered to suppress Lake St. Lawrence levels.

## **2.5 LONG SAULT DAM OPERATIONS**

A varying number of gates were opened at Long Sault Dam at differing times throughout the reporting period to spill the amount of total Lake Ontario outflow that exceeded the capacity of the Moses-Saunders Dam. Long Sault Dam was operated from 1 September to 4 November 2019, 8 November 2019 to 18 January 2020, 23 to 24 January, 27 January to 7 February, and beginning on 10 February through the end of the reporting period. The total amount of water spilled (lost to electrical power generation) reached a maximum daily average value of 2,207 m<sup>3</sup>/s on 7 January.

## **2.6 RAISIN RIVER DIVERSION**

The Raisin River Diversion was not opened during the reporting period.

## **2.7 ST. LAWRENCE SEAWAY REPORT**

The 2019 navigation season closed in the Montreal-Lake Ontario section of the Seaway after the passage of the *Kaministiquia* through Iroquois Lock at 19:37 on 30 December 2019.

## **2.8 HYDROPOWER PEAKING AND PONDING**

By letter dated 13 October 1983, the IJC authorized Ontario Power Generation (OPG) and New York Power Authority (NYPA) to continue to carry out peaking and ponding operations at the St. Lawrence Project. The conditions governing peaking and ponding operations are currently specified in Addendum No. 3 to the Operational Guides for Regulation Plan 1958-D. On 4 November 2016, the IJC renewed the approval for a 5-year period, dated 1 December 2016 to 30 November 2021.

No peaking nor ponding operations were conducted during the reporting period owing to high outflow rates in general and critical conditions in the system. Flows were below the 7,930 m<sup>3</sup>/s threshold on only a handful of days during the reporting period, including when they were temporarily reduced to raise water levels of Lake St. Lawrence and facilitate removal of recreational boats, and during flow reductions to facilitate ice formation in the Beauharnois Canal.

# **3 BOARD ACTIVITIES**

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The Board continued to direct the outflow from the hydropower project in the international reach of the St. Lawrence River. The Board, primarily through the offices of the regulation representatives, monitored conditions throughout the Lake Ontario-St. Lawrence River system. The Board held their two regular face-to-face meetings and in response to the unprecedented high water supplies in the entire Lake Ontario–St. Lawrence River system, the Board also met eight times by teleconference to address their responsibilities for setting the outflow of Lake Ontario. The Board also conducted ongoing oral and written communication with the IJC.

The regulation representatives provided the Board with frequent water level, forecast and hydrologic conditions updates, weekly regulation data, and advised the Board on its options for deviating from Plan 2014 and the potential impacts that these strategies would have on water levels and flows throughout the system and under a range of potential water supply conditions. The Board's Operations Advisory Group (OAG) held weekly teleconferences to review conditions and advise the regulation representatives on weekly operational requirements and constraints. The OAG also answered queries on regulation strategies from the Board.

The Board continued to work with the IJC, through the Communications Committee, to seek opportunities to improve communications, outreach, and engagement with its stakeholders and the public. The St. Lawrence Committee on River Gauging continued to monitor the power entities' program for operation and maintenance of the gauging system required for Board operations.

### **3.1 BOARD MEETINGS & CONFERENCE CALLS**

The Board met in person twice and remotely eight times during the reporting period, along with IJC advisors, associated subcommittees, and advisory groups, to conduct business and assess conditions. The Board held face-to-face meetings on 25 September in Burlington, Ontario and on 22 October in Ottawa, Ontario. The Board held conference call meetings on 6 September, 13 September, 20 September, 28 October, 8 November, 13 January, 31 January and 21 February. Table 4 provides a list of Board Members in attendance at these meetings.

### **3.2 BOARD AND COMMITTEE MEMBERSHIP CHANGES**

The IJC appointed Mr. Stephen Durrett as the US Co-Chair (to fill the position vacated by MG Mark Toy) and Mr. Kyle McCune as the Alternate US Co-Chair, effective 15 October 2019. In addition to the additional US Board member whom the IJC appointed at the end of August 2019 (Mr. Bill Reilich), the IJC appointed Ms. Susie Miron on 3 October 2019 for a three-year term. Ms. Miron is a city councilor from the district of Tétéreaultville, in Mercier-Hochelaga-Maisonneuve borough, in the east of Montréal, Quebec. These two new members have been selected from local municipalities within the Lake Ontario–St. Lawrence River system and have a multitude of experience with the impacts from high water events on shoreline residents and property owners.

On 25 October 2019, Ms. Lauren Schifferle became the Alt. US Regulation Representative for the Board. The US Communications support was seconded elsewhere and Ms. Susan Blair took over in his temporary absence. Ms. Halya Petzold replaced Mr. Don Ferko as one of OPG's representatives on the Operations Advisory Group.

### **3.3 COMMUNICATIONS, OUTREACH AND ENGAGEMENT**

Since 1 September 2019, the International Lake Ontario - St. Lawrence River Board Communications Committee held a meeting in person on 17 December and several more meetings via teleconference. During the reporting period, the Communications Committee, individual Board members, the secretaries and the regulation representatives were actively engaged in outreach, information exchange and liaison with members of the public, legislators, government agencies, journalists, and other stakeholders throughout the Lake Ontario-St. Lawrence River system. Notably, on 9 December 2019, the IJC and the Board held a joint webinar (<https://vimeo.com/378433728>) to explain and answer questions from elected

officials about high water levels in the Lake Ontario–St. Lawrence River system. Additional outreach efforts are listed in Appendix A.

A total of 11 media releases were published, distributed and posted on the Board’s website. Board members and staff responded to a number of telephone and email inquiries from local government legislators and officials, interested stakeholders and members of the general public concerning water level conditions and Board strategies. Board members and staff conducted numerous interviews with the media and maintained regular contact with media editorial staff. Board staff continued to send weekly updates on current conditions to over 500 email subscribers. Regular updates on the Board’s Facebook pages continue to be posted in both French and English and Board staff frequently respond to public comments and questions. The French and English pages currently have over 630 and 5,290 “likes” respectively and total post “reaches” of up to 13,000.

The Canadian regulation representative office continued to provide weekly briefings of water levels, flows, and forecasts that were developed during the spring of 2017. The briefings are distributed by email to Board members and associates, and interested stakeholders, including federal, provincial and state government agencies, several Conservation Authorities, Port Authorities, and municipalities.

The Board continued to operate and maintain its website (<https://www.ijc.org/en/loslrb>) and launched a new page focused on the 2017 and 2019 high-water events (<https://ijc.org/en/loslrb/watershed/2017-and-2019-high-water-events>). The new page 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](#). The Board also developed and posted the first two issues of its quarterly newsletter (<https://ijc.org/en/loslrb/newsletters>) to inform readers of current and seasonal conditions in the fall and winter.

### **3.4 GAUGING COMMITTEE**

The St. Lawrence Committee on River Gauging (Gauging Committee) is granted authority by the Board to oversee and ensure the accuracy of flow estimates and water level measurements in the international section of the St. Lawrence River. The Gauging Committee inspects the computational methods employed at each of the eight outflow structures and monitors the operation and maintenance of the water level gauges owned and operated by the power entities (OPG and NYPA). The committee conducts an annual field inspection of 16 of the water level gauges used by the Board to monitor river conditions and performs monthly audits of the water level and outflow data collected and archived by the power entities. The findings and results of these activities are documented in an annual report to the Board.

The 81<sup>st</sup> (2017) Gauging Committee report was approved at the 22 October 2019 Board meeting. The 82<sup>nd</sup> (2018) and 83<sup>rd</sup> (2019) reports are currently being prepared. These reports include the findings and results of the annual inspections that were completed on 11-15 June 2018 and 12-15 August 2019. A precision survey was planned to take place in 2019, but a contract was not signed in time. The precision survey is planned for October 2020. NOAA’s National Geodetic Survey (NGS) office will follow the same survey route as the previous precision survey, using newer, stricter procedures related to the new horizontal and vertical datum, Geoid 2022. This datum will be the base relationship for the new International Great Lakes Datum (IGLD 2020), with emphasis on GPS observations.

## **4 GREAT LAKES–ST. LAWRENCE RIVER ADAPTIVE MANAGEMENT COMMITTEE**

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The Great Lakes – St. Lawrence River Adaptive Management (GLAM) Committee of technical experts, established by the IJC to consider adaptive management methods as part of an on-going evaluation of regulation plans, continued to work with the Board to implement the science-based recommendations of past studies and develop new ones. The Committee ultimately seeks to evaluate regulation plan performance over time with regard to a broad range of environmental and economic indicators.

During the reporting period, the GLAM Committee was focused on planning for and initiating tasks in support of Phase 1 of the expedited review of Plan 2014. The Phase 1 effort seeks to provide information that supports the Board in its immediate regulation decisions during this current high water period, and more specifically, the Board’s objective of maximizing outflows. This includes improved understanding of the potential economic impacts of temporarily halting shipping on the St. Lawrence Seaway between Lake Ontario and Montreal due to hazardous high flows. Additionally, the GLAM Committee has been undertaking a number of short-term projects to better assess risks associated with ice conditions and very high flows during winter operations including ice stability and potential impacts to water intakes on Lake St. Lawrence. The Board and GLAM also partnered with the St. Lawrence River Institute of Environmental Science on an IJC International Watersheds Initiative (IWI) funded project that will help correlate potential impacts to certain fish species owing to given seasonal or regulatory changes in Lake St. Lawrence levels.

The GLAM Committee has identified a series of additional Phase 1 projects through its current FY20 work plan. With the IJC’s recent confirmation of \$1.5 million U.S. and matching Canadian funding, the Committee is moving forward to plan for and execute those efforts. Detailed reports of GLAM activities can be found on the [GLAM Committee’s website](#).

Respectfully submitted,

MEMBERS FOR CANADA

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G. BÉCHARD, CHAIR

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J. AUBRY-MORIN

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P. CLAVET

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J. FRAIN

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M. HUDON

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S. MIRON

MEMBERS FOR THE UNITED STATES

---

S. DURRETT, CHAIR

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T. BROWN

---

R. CAMPANY

---

A. DAVID

---

D. KUEHN

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B. REILICH

**Table 1: Provisional Monthly Mean Supplies to Lake Ontario**

Month	Inflow from Lake Erie				Local Net Basin Supplies			Total Supplies			
	m <sup>3</sup> /s	tcfs	Exceed. Prob. <sup>(1)</sup>	% of LTA <sup>(1)</sup>	m <sup>3</sup> /s	tcfs	Exceed. Prob. <sup>(1)</sup>	m <sup>3</sup> /s	tcfs	Exceed. Prob. <sup>(1)</sup>	% of LTA <sup>(1)</sup>
Sep 19	7,530	266	<1	126	280	10	31	7,810	276	3	128
Oct 19	7,380	261	<1	126	920	32	8	8,300	293	2	135
Nov 19	7,460	263	<1	127	1,100	39	20	8,560	302	3	131
Dec 19	7,340	259	2	125	1,590	56	12	8,930	315	3	133
Jan 20	7,780	275	<1	136	2,400	85	2	10,180	360	<1	152
Feb 20	7,940	280	<1	142	1,340	47	32	9,280	328	<1	139
6-month Average	7,570	267	<1	130	1,270	45	4	8,840	312	<1	137

<sup>(1)</sup> Based on period of record 1900-2018

**Table 2a: Summary of Weekly Outflows, Operational Adjustments and Deviations**

Week Ending 2019	Adj. RC Flow		Plan Flow		App. Rule/Limit	Actual Flow		Op. Adjustments &/or Plan Limitations		Deviations						Details	
										Weekly		Accumulated		Cumulative effect on L. Ontario			Type
	m <sup>3</sup> /s	tcfs	m <sup>3</sup> /s	tcfs		m <sup>3</sup> /s	tcfs	m <sup>3</sup> /s	tcfs	m <sup>3</sup> /s-wks	tcfs-wks	cm	in				
30-Aug	10,200	360	9,910	350	L	10,110	357	-90	-3.2	200	7.1	2,760	97.5	-8.5	-3.3	Major	Major deviations continue
06-Sep	11,560	408	9,910	350	L+	10,000	353	-1,560	-55.1	90	3.2	2,850	100.6	-8.8	-3.5	Major	
13-Sep	11,470	405	9,910	350	L+	9,780	345	-1,690	-59.7	-130	-4.6	2,720	96.1	-8.4	-3.3	Major	
20-Sep	11,230	397	9,620	340	L+	9,530	337	-1,700	-60	-90	-3.2	2,630	92.9	-8.1	-3.2	Major	
27-Sep	11,040	390	9,360	331	L+	9,270	327	-1,770	-62.5	-90	-3.2	2,540	89.7	-7.9	-3.1	Major	
04-Oct	10,930	386	9,180	324	L+	9,090	321	-1,840	-65	-90	-3.2	2,450	86.5	-7.6	-3.0	Major	
11-Oct	10,770	380	9,040	319	L+	8,920	315	-1,850	-65.3	-120	-4.2	2,330	82.3	-7.2	-2.8	Major & Minor	Major deviations continue; Minor deviation for boat haul-out on Lake St. Lawrence
18-Oct	10,520	372	8,780	310	L+	8,690	307	-1,830	-64.6	-90	-3.2	2,240	79.1	-6.9	-2.7	Major & Minor	
25-Oct	10,450	369	8,740	309	L+	8,870	313	-1,580	-55.8	130	4.6	2,370	83.7	-7.3	-2.9	Major	Major deviations continue
01-Nov	10,570	373	8,720	308	L+	8,850	313	-1,720	-60.7	130	4.6	2,500	88.3	-7.7	-3.0	Major	
08-Nov	11,160	394	8,760	309	L+	8,740	309	-2,420	-85.5	-20	-0.7	2,480	87.6	-7.7	-3.0	Major & Minor	Major deviations continue; Minor deviation owing to capacity limitations at Beauharnois/Coteau and boom removal
15-Nov	11,860	419	8,850	313	L+	8,920	315	-2,940	-103.8	70	2.5	2,550	90.1	-7.9	-3.1	Major	Major deviations continue
22-Nov	12,220	432	8,820	311	L+	8,910	315	-3,310	-116.9	90	3.2	2,640	93.2	-8.2	-3.2	Major	
29-Nov	12,520	442	8,750	309	L+	8,870	313	-3,650	-128.9	120	4.2	2,760	97.5	-8.5	-3.3	Major	
06-Dec	13,840	489	8,740	309	L+	8,850	313	-4,990	-176.2	110	3.9	2,870	101.4	-8.9	-3.5	Major	
13-Dec	17,510	618	8,720	308	L+	8,830	312	-8,680	-306.5	110	3.9	2,980	105.2	-9.2	-3.6	Major	
20-Dec	13,360	472	8,660	306	L+/I	8,780	310	-4,580	-161.7	120	4.2	3,100	109.5	-9.6	-3.8	Major	Major deviations continue; OA for ice management at Beauharnois Canal
27-Dec	18,880	667	8,510	301	L+/I	8,570	303	-10,310	-364.1	60	2.1	3,160	111.6	-9.8	-3.9	Major	OAs for ice management at Beauharnois Canal; Resume major deviations

Note: The “Op. Adjustments &/or Plan Limitations” column values shown in this table are computed as the Actual Flow minus Adjusted RC Flow. The “+” in the “App. Rule/Limit” column denotes the Plan 2014 “September Rule” was applied. Whenever the Lake Ontario level is above 74.8 m at the beginning of September, the September Rule strives to lower Lake Ontario to 74.8 m by 1 January. The rule curve flow is linearly increased by the amount needed to eliminate the storage on the lake above 74.8 m over the remaining time, before 1 January. The adjusted flow is constrained by the L Limit.

**Table 2a (continued): Summary of Weekly Outflows, Operational Adjustments and Deviations**

Week Ending 2020	Adj. RC Flow		Plan Flow		App. Rule/Limit	Actual Flow		Op. Adjustments &/or Plan Limitations		Deviations						Type	Details
										Weekly		Accumulated		Cumulative effect on L. Ontario			
	m <sup>3</sup> /s	tcf/s	m <sup>3</sup> /s	tcf/s		m <sup>3</sup> /s	tcf/s	m <sup>3</sup> /s	tcf/s	m <sup>3</sup> /s	tcf/s	m <sup>3</sup> /s-wks	tcf/s-wks	cm	in		
03-Jan	18,560	655	9,570	338	L+	9,670	341	-8,890	-313.9	100	3.5	3,260	115.1	-10.1	-4.0	Major	Continue major deviations; Gradually increase outflows after closure of Seaway navigation season
10-Jan	9,640	340	9,640	340	RC	10,440	369	800	28.3	800	28.3	4,060	143.4	-12.6	-5.0	Major	Major deviations continue
17-Jan	9,690	342	9,080	321	F/I	9,160	323	-530	-18.7	80	2.8	4,140	146.2	-12.8	-5.0	Major	Major deviations continue; OAs for max. F Limit (maintain L. St. Louis at 22.10 m while L. Ont. <75.30 m) and OAs for max. I Limit (ice management at Beauharnois Canal)
24-Jan	10,000	353	7,850	277	I	7,850	277	-2,150	-75.9	--	--	4,140	146.2	-12.8	-5.0	--	OAs for max. I Limit (ice management at Beauharnois Canal)
31-Jan	10,020	354	8,840	312	I/F	8,840	312	-1,180	-41.7	--	--	4,140	146.2	-12.8	-5.0	--	OA for max. I Limit (ice management at Beauharnois Canal) and OA for max. F Limit (maintain L. St. Louis at 22.10 m while L. Ont. <75.30 m)
07-Feb	10,200	360	10,040	355	F/I	10,040	355	-160	-5.7	--	--	4,140	146.2	-12.8	-5.0	--	OAs for max. F Limit (maintain L. St. Louis at 22.10 m while L. Ont. <75.30 m) and OAs for max. I Limit (ice management at Beauharnois Canal)
14-Feb	10,160	359	8,570	303	I	8,570	303	-1,590	-56.2	--	--	4,140	146.2	-12.8	-5.0	--	OAs for max. I Limit (ice management at Beauharnois Canal)
21-Feb	10,120	357	9,590	339	I/F	9,590	339	-530	-18.7	--	--	4,140	146.2	-12.8	-5.0	--	OAs for max. I Limit (ice management at Beauharnois Canal) and OAs for max. F Limit (maintain L. St. Louis at 22.10 m while L. Ont. <75.30 m)
28-Feb	10,070	356	9,910	350	I	10,090	356	20	0.7	180	6.4	4,320	152.6	-13.4	-5.3	Extended	Deviations resume (extended deviation authority); OAs for max. I Limit (ice management at Beauharnois Canal)
06-Mar	10,070	356	8,890	314	I	8,890	314	-1,180	-41.7	--	--	4,320	152.6	-13.4	-5.3	--	OAs for max. I Limit (ice management at Beauharnois Canal)

Note: The "Op. Adjustments &/or Plan Limitations" column values shown in this table are computed as the Actual Flow minus Adjusted RC Flow.

**Table 2b: Summary of Flow Changes**

Week Ending 2019	Flow Changes							App. Rule/ Limit	Details
	Day	Hr	(m <sup>3</sup> /s)		(tcfs)		Reason		
			From	To	From	To			
30-Aug	--	--	--	--	--	--	Dev	Major	Remain at 10,110 m <sup>3</sup> /s (L Limit + 200 m <sup>3</sup> /s)
6-Sep	31-Aug	0001	10,110	10,000	357	353.1	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 10,000 m <sup>3</sup> /s
13-Sep	7-Sep	0001	10,000	9,780	353.1	345.4	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 9,780 m <sup>3</sup> /s
20-Sep	14-Sep	0001	9,780	9,530	345.4	336.5	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 9,530 m <sup>3</sup> /s
27-Sep	21-Sep	0001	9,530	9,270	336.5	327.4	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 9,270 m <sup>3</sup> /s
4-Oct	28-Sep	0001	9,270	9,090	327.4	321	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 9,090 m <sup>3</sup> /s
11-Oct	5-Oct	0001	9,090	8,970	321	316.8	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 8,970 m <sup>3</sup> /s
	11-Oct	1601	8,970	7,900	316.8	279	Dev	Minor	Boat haul-out on Lake St. Lawrence
18-Oct	13-Oct	1501	7,900	8,600	279	303.7	Dev	Minor	Ramp up flow
	13-Oct	1601	8,600	8,920	303.7	315	Dev	Major	Continue major deviations (L Limit + 200 m <sup>3</sup> /s = 8,920 m <sup>3</sup> /s)
25-Oct	19-Oct	0001	8,920	8,870	315	313.2	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 8,870 m <sup>3</sup> /s
1-Nov	26-Oct	0001	8,870	8,850	313.2	312.5	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 8,850 m <sup>3</sup> /s
8-Nov	2-Nov	0001	8,850	8,880	312.5	313.6	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 8,880 m <sup>3</sup> /s
	4-Nov	0201	8,880	8,380	313.6	295.9	Dev	Minor	Capacity limitations at Beauharnois/Coteau and boom removal
	4-Nov	1801	8,380	8,600	295.9	303.7	Dev	Minor	
	5-Nov	1801	8,600	8,650	303.7	305.5	Dev	Minor	
	6-Nov	1101	8,650	8,750	305.5	309	Dev	Minor	
	7-Nov	1401	8,750	8,800	309	310.8	Dev	Major	Resume major deviations (Capacity limitations at Beauharnois/Coteau continue)
8-Nov	1601	8,800	8,920	310.8	315	Dev	Major	Continue major deviations (Next week's L Limit + 200 m <sup>3</sup> /s = 8,920 m <sup>3</sup> /s)	
15-Nov	--	--	--	--	--	--	Dev	Major	Remain at 8,920 m <sup>3</sup> /s (L Limit + 200 m <sup>3</sup> /s)
22-Nov	16-Nov	0001	8,920	8,910	315	314.7	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 8,910 m <sup>3</sup> /s
29-Nov	23-Nov	0001	8,910	8,870	314.7	313.2	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 8,870 m <sup>3</sup> /s
6-Dec	30-Nov	0001	8,870	8,850	313.2	312.5	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 8,850 m <sup>3</sup> /s
13-Dec	7-Dec	0001	8,850	8,830	312.5	311.8	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 8,830 m <sup>3</sup> /s
20-Dec	14-Dec	0001	8,830	8,820	311.8	311.5	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 8,820 m <sup>3</sup> /s
	19-Dec	1601	8,820	8,860	311.5	312.9	Dev	Major	Next week's L Limit + 200 m <sup>3</sup> /s = 8,860 m <sup>3</sup> /s
	20-Dec	1701	8,860	7,600	312.9	268.4	OA	I	Operational adjustments to max I Limit (ice management at Beauharnois Canal)
27-Dec	21-Dec	1201	7,600	7,900	268.4	279	OA	I	
	21-Dec	1901	7,900	8,100	279	286	OA	I	
	22-Dec	1401	8,100	8,400	286	296.6	OA	I	
	23-Dec	1801	8,400	8,860	296.6	312.9	Dev	Major	Resume major deviations (L Limit + 200 m <sup>3</sup> /s = 8,860 m <sup>3</sup> /s)
3-Jan (2020)	28-Dec	0001	8,860	8,850	312.9	312.5	Dev	Major	L Limit + 200 m <sup>3</sup> /s = 8,850 m <sup>3</sup> /s
	31-Dec	0001	8,850	9,200	312.5	324.9	Dev	Major	Seaway/navigation closed for the season. Major deviations continue;
	31-Dec	0801	9,200	10,000	324.9	353.1	Dev	Major	Outflows gradually increased as much as possible, in accordance with Plan 2014 F and I Limits

**Table 2b (continued): Summary of Flow Changes**

Week Ending 2020	Flow Changes								Details
	Day	Hr	(m <sup>3</sup> /s)		(tcfs)		Reason	App. Rule/ Limit	
			From	To	From	To			
3-Jan	1-Jan	1001	10,000	10,300	353.1	363.7	Dev	Major	Major deviations continue; Outflows gradually increased as much as possible, in accordance with Plan 2014 F and I Limits
	1-Jan	2001	10,300	10,500	363.7	370.8	Dev	Major	
	2-Jan	1201	10,500	10,700	370.8	377.9	Dev	Major	
	3-Jan	1601	10,700	10,500	377.9	370.8	Dev	Major	
10-Jan	4-Jan	1901	10,500	10,300	370.8	363.7	Dev	Major	Major deviations continue; Maintain operating head at US/NYPA side of the Moses-Saunders dam above critical level (22.29 m)
	5-Jan	1201	10,300	10,400	363.7	367.3	Dev	Major	
	7-Jan	1101	10,400	10,600	367.3	374.3	Dev	Major	
	9-Jan	1601	10,600	10,400	374.3	367.3	Dev	Major	
	10-Jan	0001	10,400	10,200	367.3	360.2	Dev	Major	
17-Jan	10-Jan	1701	10,200	10,400	360.2	367.3	Dev	Major	Major deviations continue; Outflow decreased in accordance with Plan 2014 F Limit  Operational adjustments to max F Limit (Maintain L. St. Louis at 22.10 m; L. Ont. < 75.30 m)
	11-Jan	1601	10,400	9,900	367.3	349.6	Dev	Major	
	12-Jan	0001	9,900	9,400	349.6	332	OA	F	
	12-Jan	1001	9,400	9,000	332	317.8	OA	F	
	12-Jan	1501	9,000	8,750	317.8	309	OA	F	
	14-Jan	1201	8,750	9,000	309	317.8	OA	F	
	15-Jan	0001	9,000	9,250	317.8	326.7	OA	F	
	15-Jan	1801	9,250	9,450	326.7	333.7	OA	F	
	16-Jan	1301	9,450	8,800	333.7	310.8	OA	I	
24-Jan	17-Jan	1001	8,800	9,000	310.8	317.8	OA	I	Operational adjustments to max I Limit (ice management at Beauharnois Canal)
	17-Jan	1801	9,000	8,200	317.8	289.6	OA	I	
	18-Jan	1901	8,200	7,500	289.6	264.9	OA	I	
	19-Jan	1801	7,500	7,000	264.9	247.2	OA	I	
	20-Jan	1601	7,000	7,200	247.2	254.3	OA	I	
	21-Jan	1301	7,200	7,700	254.3	271.9	OA	I	
31-Jan	22-Jan	1601	7,700	8,300	271.9	293.1	OA	I	Operational adjustment to max F Limit (Maintain L. St. Louis at 22.10 m; L. Ont. < 75.30 m)
	23-Jan	1601	8,300	8,700	293.1	307.2	OA	I	
	29-Jan	1701	8,700	9,000	307.2	317.8	OA	I	
	31-Jan	1201	9,000	9,600	317.8	339	OA	F	

**Table 2b (continued): Summary of Flow Changes**

Week Ending 2020	Flow Changes								Details
	Day	Hr	(m <sup>3</sup> /s)		(tcs)		Reason	App. Rule/ Limit	
			From	To	From	To			
7-Feb	1-Feb	1201	9,600	10,000	339	353.1	OA	F	Operational adjustment to max F Limit (Maintain L. St. Louis at 22.10 m; L. Ont. < 75.30 m)
	2-Feb	1201	10,000	10,200	353.1	360.2	OA	F	
	7-Feb	1501	10,200	9,200	360.2	324.9	OA	I	
	7-Feb	1801	9,200	8,200	324.9	289.6	OA	I	
14-Feb	8-Feb	1001	8,200	7,500	289.6	264.9	OA	I	Operational adjustments to max I Limit (ice management at Beauharnois Canal)
	8-Feb	1901	7,500	7,300	264.9	257.8	OA	I	
	9-Feb	1001	7,300	7,600	257.8	268.4	OA	I	
	9-Feb	1601	7,600	8,200	268.4	289.6	OA	I	
	10-Feb	1601	8,200	8,800	289.6	310.8	OA	I	
	11-Feb	1501	8,800	9,300	310.8	328.4	OA	I	
	12-Feb	1201	9,300	9,500	328.4	335.5	OA	I	
	13-Feb	1901	9,500	8,400	335.5	296.6	OA	I	
21-Feb	14-Feb	1501	8,400	8,700	296.6	307.2	OA	I	Operational adjustments to max F Limit (Maintain L. St. Louis at 22.10 m; L. Ont. < 75.30 m)
	15-Feb	1001	8,700	9,400	307.2	332	OA	I	
	15-Feb	1701	9,400	9,700	332	342.6	OA	I	
	16-Feb	1301	9,700	10,100	342.6	356.7	OA	I	
	18-Feb	0901	10,100	9,700	356.7	342.6	OA	F	
	19-Feb	1301	9,700	9,400	342.6	332	OA	F	
	20-Feb	1601	9,400	9,000	332	317.8	OA	F	
21-Feb	1201	9,000	9,500	317.8	335.5	OA	F		
28-Feb	22-Feb	1101	9,500	10,300	335.5	363.7	Dev	Extended	Deviations resume (extended deviation authority); Outflows maximized as much as possible, in accordance with Plan 2014 F and I Limits
	23-Feb	1801	10,300	10,600	363.7	374.3	Dev	Extended	
	24-Feb	1901	10,600	10,300	374.3	363.7	Dev	Extended	
	26-Feb	1601	10,300	9,900	363.7	349.6	OA	I	Operational adjustments to max I Limit (ice management at Beauharnois Canal)
	28-Feb	1001	9,900	9,400	349.6	332	OA	I	
	28-Feb	1701	9,400	9,000	332	317.8	OA	I	
	28-Feb	2001	9,000	8,500	317.8	300.2	OA	I	
6-Mar	29-Feb	2001	8,500	8,700	300.2	307.2	OA	I	Operational adjustments to max I Limit (ice management at Beauharnois Canal)
	1-Mar	1001	8,700	8,900	307.2	314.3	OA	I	
	2-Mar	1001	8,900	9,100	314.3	321.4	OA	I	
	2-Mar	2201	9,100	8,900	321.4	314.3	OA	I	
	4-Mar	1901	8,900	8,600	314.3	303.7	OA	I	
	5-Mar	1101	8,600	8,900	303.7	314.3	OA	I	
	5-Mar	1901	8,600	9,100	314.3	321.4	OA	I	
	6-Mar	1101	9,100	9,500	321.4	335.5	OA	I	
6-Mar	1901	9,500	9,700	335.5	342.6	OA	I		

**Table 3: Lake Ontario Recorded and Preproject Water Levels and Outflows**

Month	Lake Ontario Monthly Mean Water Levels (IGLD 1985) - meters (feet)			Lake Ontario Monthly Mean Outflow m <sup>3</sup> /s (tcfs)		
	Recorded	Preproject	Difference	Recorded	Preproject	Difference
Sep 19	75.24 (246.85)	75.90 (249.01)	-0.66 (-2.16)	9,580 (338)	8,930 (315)	650 (23)
Oct 19	75.04 (246.19)	75.75 (248.52)	-0.71 (-2.33)	8,860 (313)	8,610 (304)	250 (9)
Nov 19	75.04 (246.19)	75.78 (248.62)	-0.74 (-2.43)	8,860 (313)	8,690 (307)	170 (6)
Dec 19	75.00 (246.06)	75.76 (248.55)	-0.76 (-2.49)	8,800 (311)	8,650 (305)	150 (6)
Jan 20	75.05 (246.22)	75.88 (248.95)	-0.83 (-2.73)	9,210 (325)	8,900 (314)	310 (11)
Feb 20	75.12 (246.45)	75.98 (249.28)	-0.86 (-2.83)	9,540 (337)	8,960 (316)	580 (21)

**Table 4: Attendance at Meetings**

Board Member	6 Sep Call	13 Sep Call	20 Sep Call	25 Sep	22 Oct	28 Oct Call	8 Nov Call	13 Jan Call	31 Jan Call	21 Feb Call
MG M. Toy <sup>1</sup>	-	-	-	-	N/A	N/A	N/A	N/A	N/A	N/A
Mr. S. Durrett <sup>2</sup>	X	X	X	X	X	X	-	X	X	X
Mr. K. McCune <sup>3</sup>	-	-	X	-	X	X	X	X	-	X
Dr. G. Béchard <sup>4</sup>	X	X	-	X	X	X	X	X	X	X
Mr. J. Aubry-Morin	X	X	X	X	X	X	X	X	X	X
Mr. T. Brown	X	X	X	X	X	X	X	X	X	-
Mr. R. Company	-	X	X	X	X	X	X	X	X	X
Ms. P. Clavet	X	X	X	X	X	X	X	X	X	X
Mr. A. David	X	X	X	X	X	X	X	X	X	X
Ms. J. Frain	X	X	-	X	X	X	-	X	-	X
Mr. M. Hudon	X	X	X	X	X	X	X	X	X	X
Dr. D. Kuehn	X	X	X	X	X	X	X	X	X	X
Ms. S. Miron <sup>5</sup>	N/A	N/A	N/A	N/A	X	X	-	X	-	X
Mr. B. Reilich	X	X	X	X	-	X	-	X	X	X

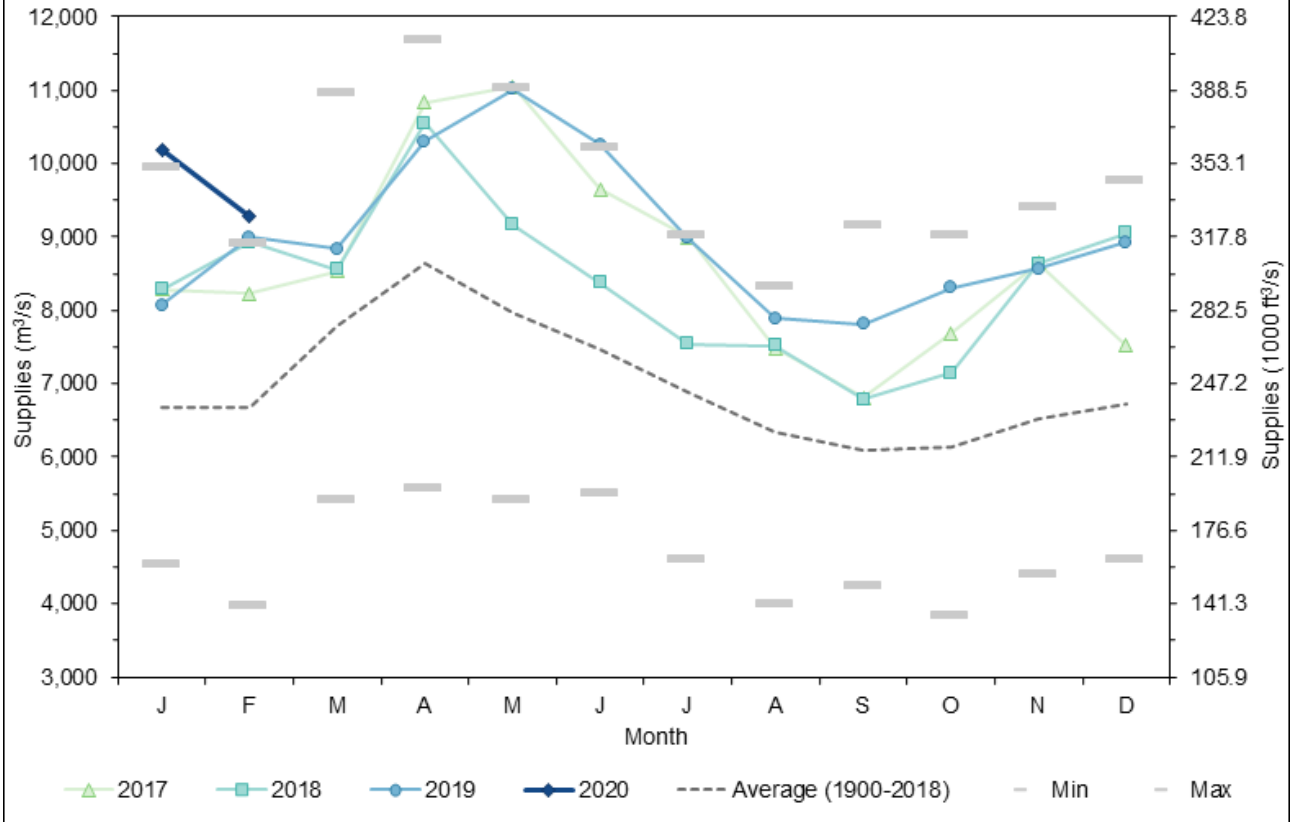
Notes:

1. US Co-Chair through 15 October 2019
2. US Co-Chair (US Alternate Chair through 15 October 2019))
3. US Alternate Chair (as of 15 October 2019)
4. Canadian Co-Chair
5. New Canadian Member (as of 3 October 2019)

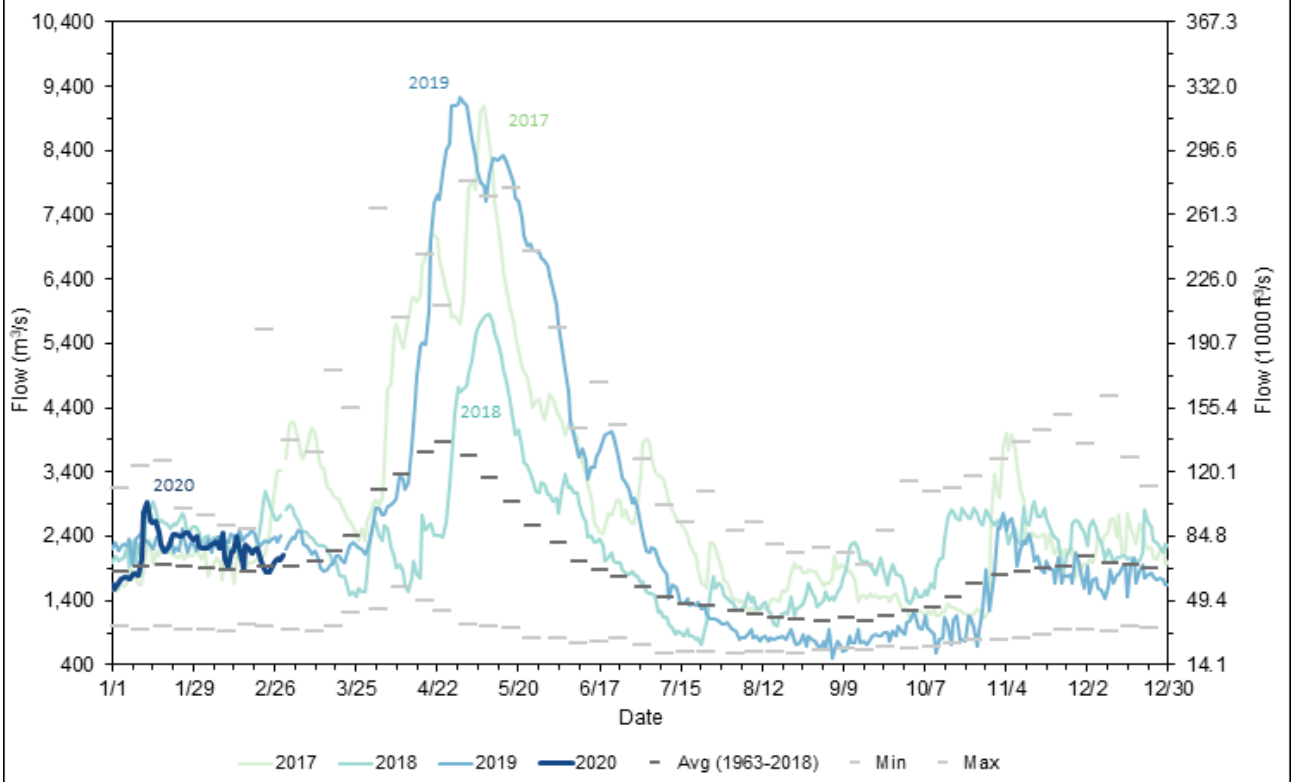
Location of Meeting:

25 September 2019: Burlington, Ontario  
 22 October 2019: Ottawa, Ontario

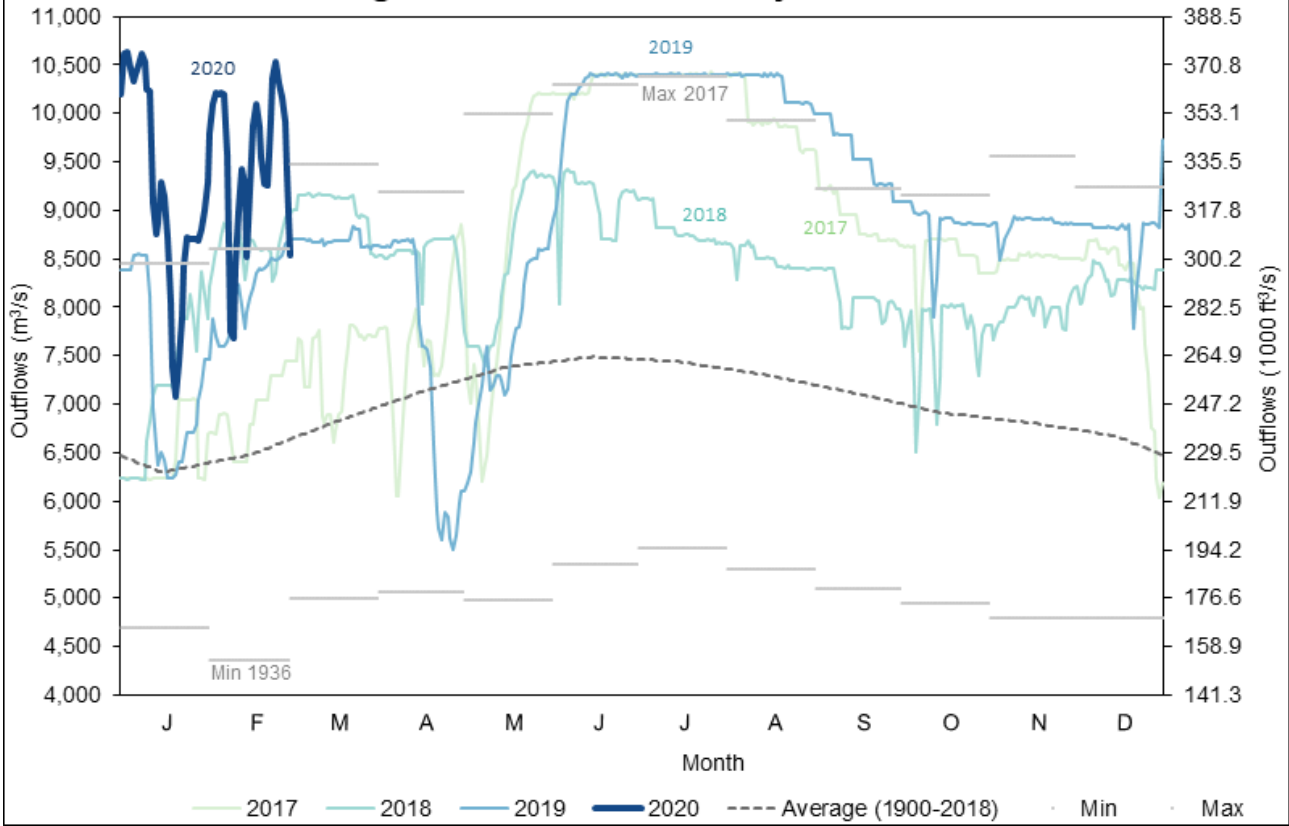
**Figure 1: Monthly Net Total Supplies to Lake Ontario**



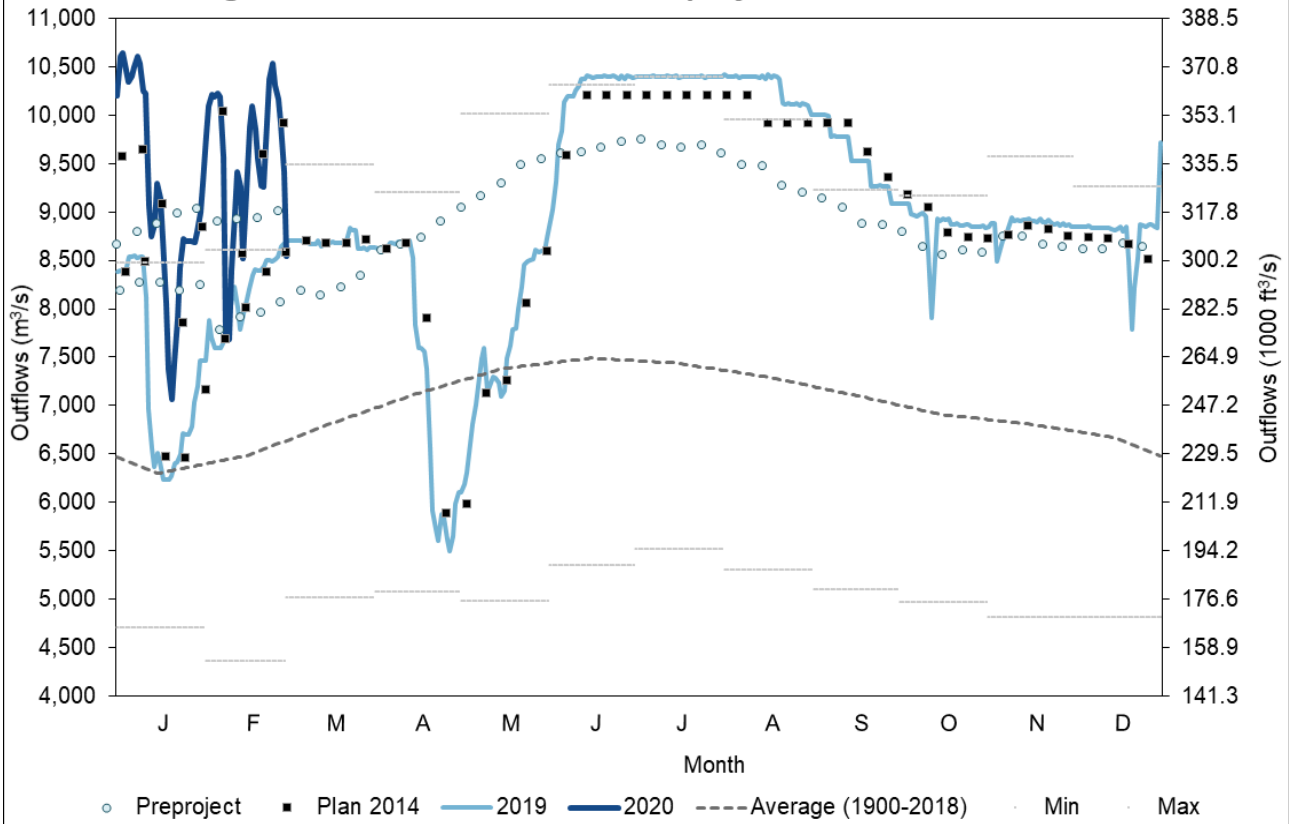
**Figure 2: Daily Ottawa River Flow at Carillon**



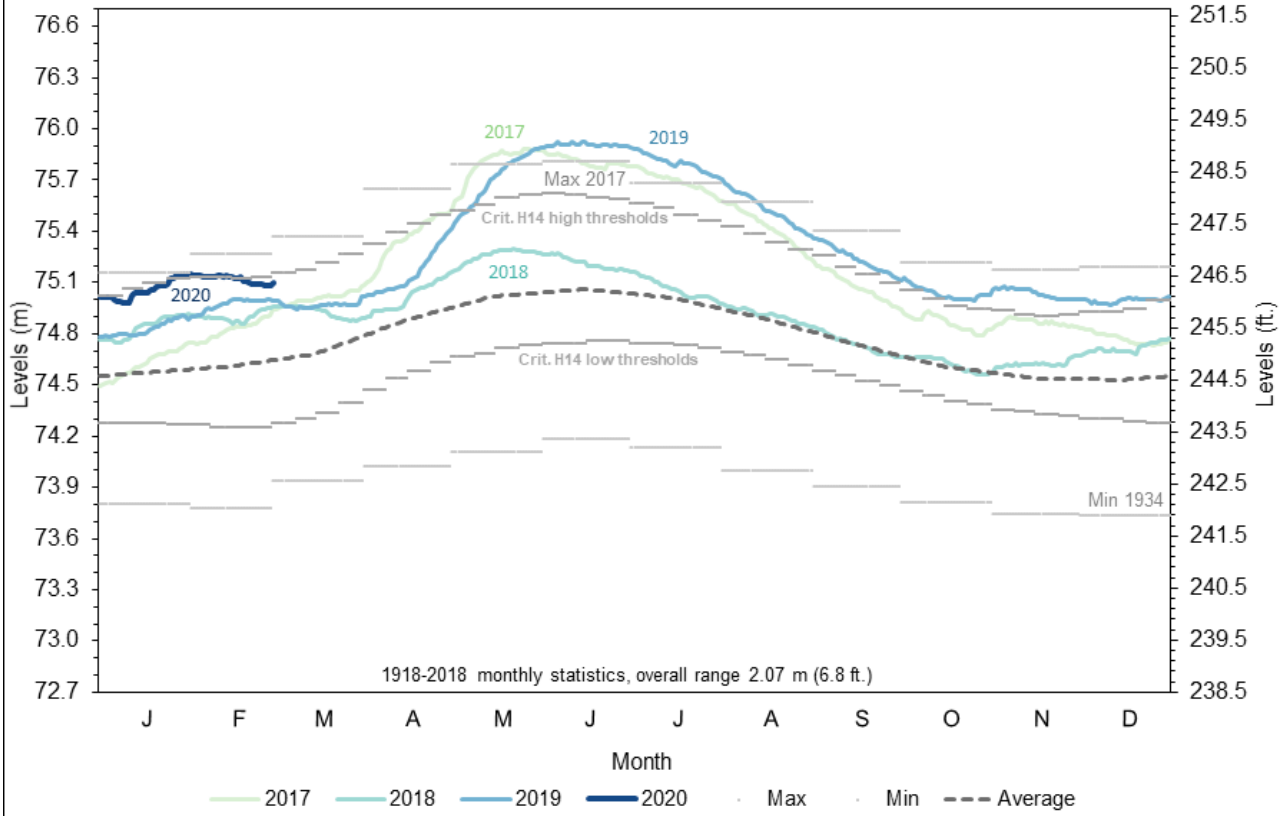
**Figure 3: Lake Ontario Daily Outflows**



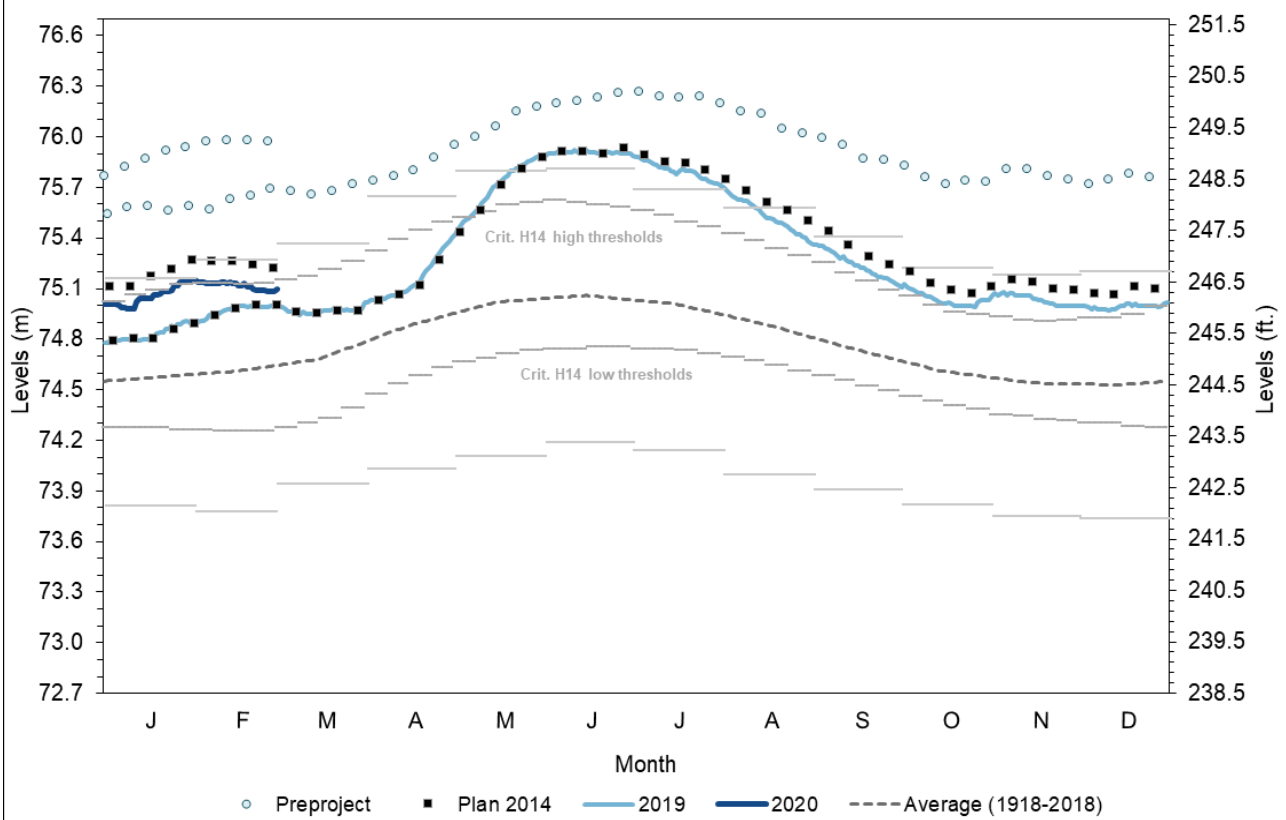
**Figure 4: Lake Ontario Actual, Preproject & Plan 2014 Outflows**



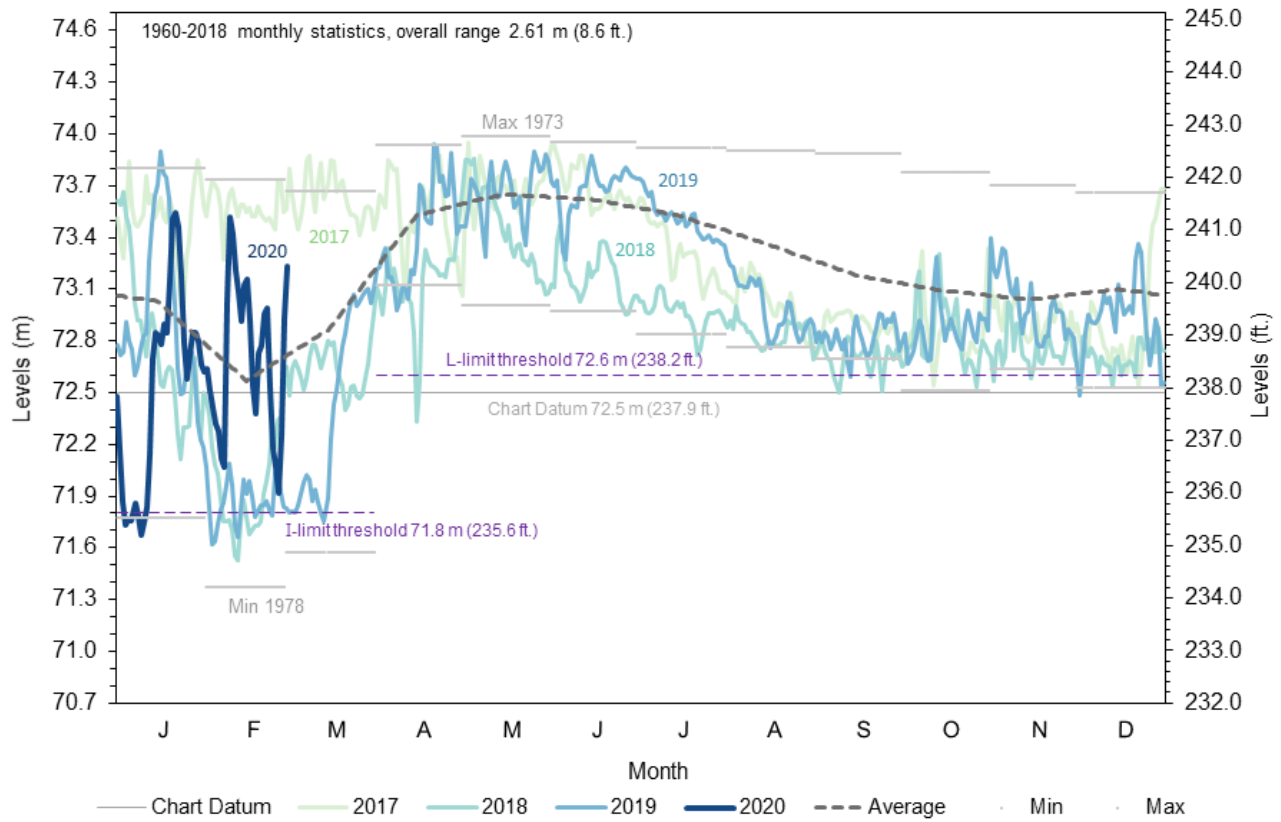
**Figure 5: Daily Lake Ontario Water Levels**



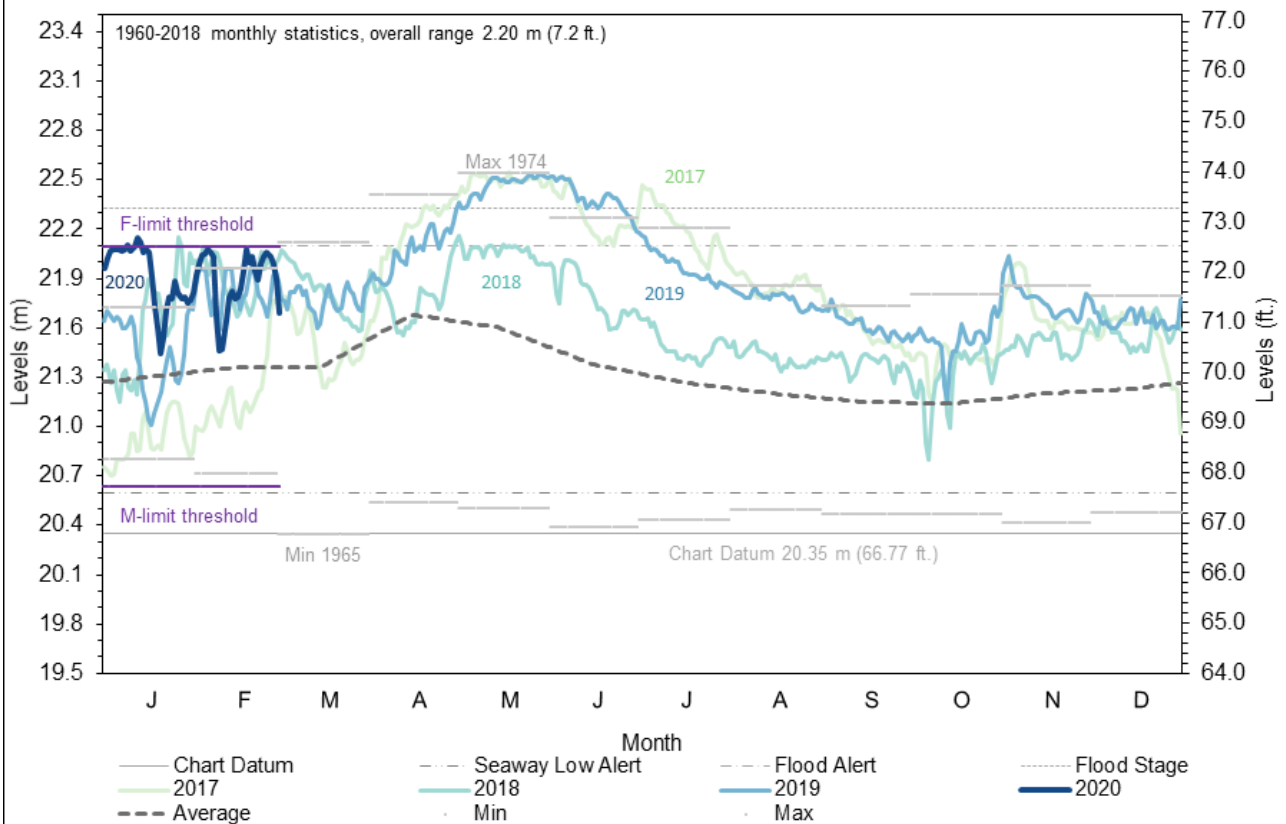
**Figure 6: Lake Ontario Actual, Preproject & Plan 2014 Levels**



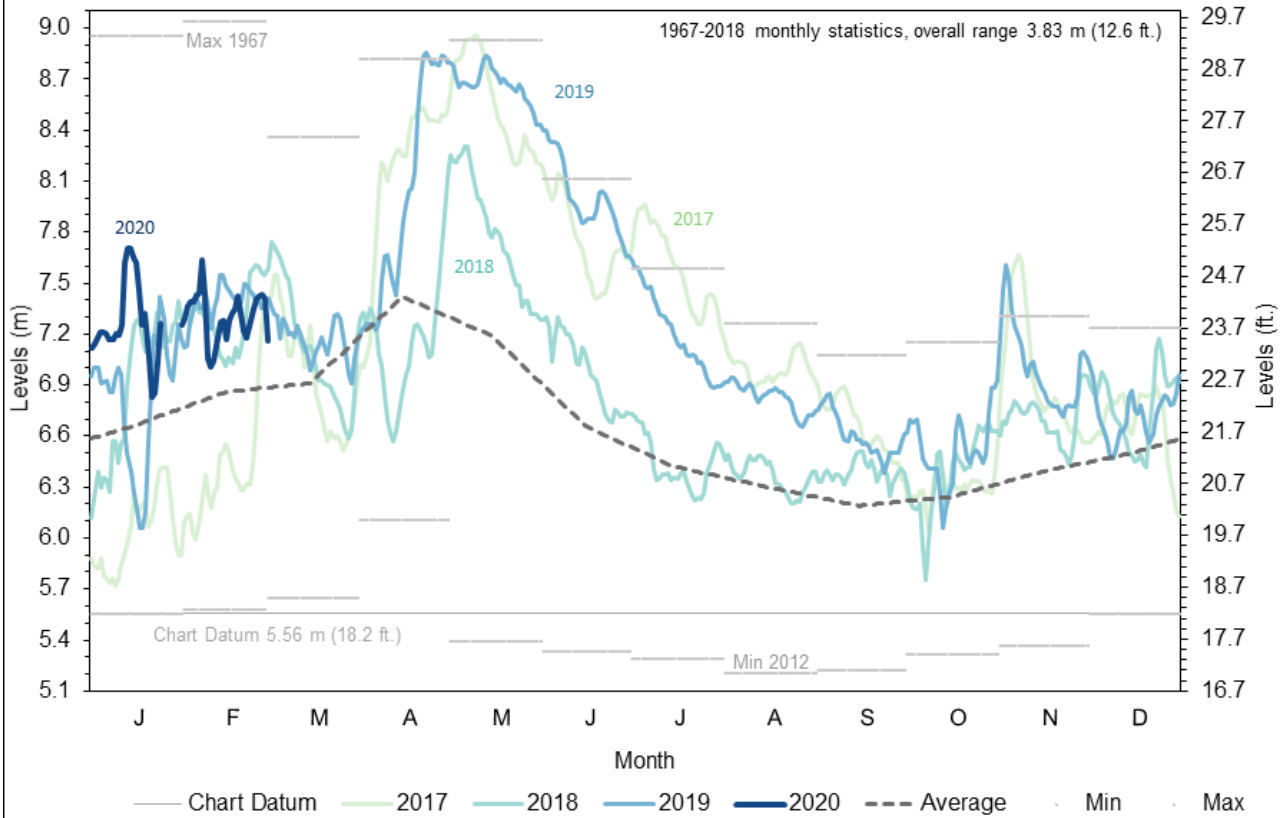
**Figure 7: Daily Lake St. Lawrence Levels at Long Sault Dam**



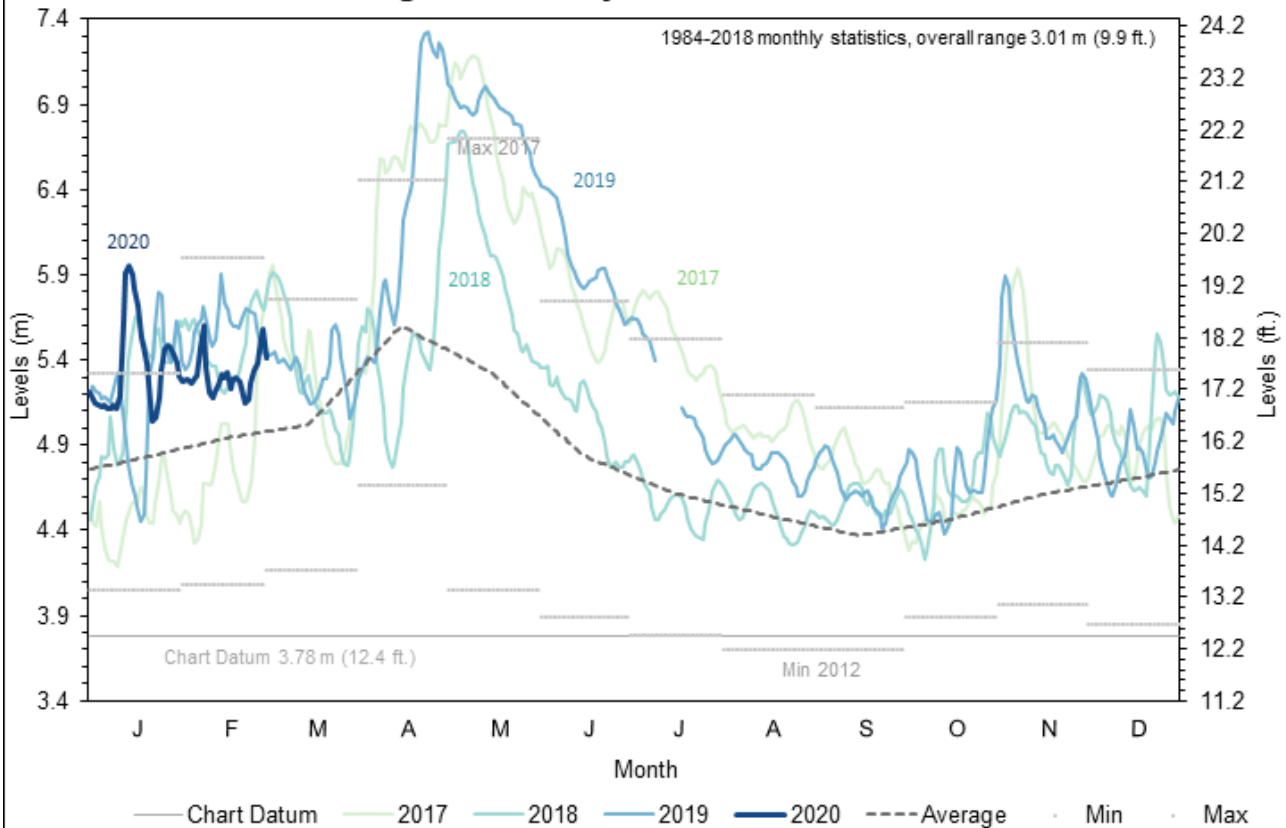
**Figure 8: Daily Lake St. Louis Levels at Pointe-Claire**



**Figure 9: Daily Port of Montreal Levels at Jetty #1**



**Figure 10: Daily Sorel Water Levels**



## APPENDIX A: ADDITIONAL OUTREACH ACTIVITIES

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Daily, Board members, staff and associates addressed the questions and concerns of legislators, government agencies and journalists. Members communicated with many mayors, elected officials and residents in the Lake Ontario – St. Lawrence River basin by email, telephone and in person. They also actively engaged stakeholders, presenting at the following venues where they answered questions and concerns from those present.

2 October 2019	Ontario Dune Coalition	Sandy Creek, New York
3 October 2019	OMNRF and Conservation Authorities	Webinar
10 October 2019	Conseil consultatif régional sur la navigation de plaisance (CCNNP)	Trois-Rivières, Québec
14 November 2019	Elected Officials (east end of Lake Ontario)	Ogdensburg, New York
11 December 2019	Save the River	Clayton, New York
18 December 2019	Regroupement des usagers du Saint-Laurent (RUSL)	Montreal, Quebec
2 January 2020	Jefferson County State Assemblymen and North Country Legislators	Watertown, New York
7 January 2020	OMNRF and Conservation Authorities	Webinar
1 February 2020	Save the River	Clayton, New York
6 February 2020	American Fisheries Society, New York Chapter	Lake Placid, New York
17 February 2020	La Fédération de l'Union des producteurs agricoles (UPA) du Quebec, secteur Lac Saint-Pierre	Yamachiche, Québec