One Hundred and Thirty-Eighth Progress Report to the International Joint Commission by the International Lake Ontario-St. Lawrence River Board Covering the Period March 1, 2022 through August 31, 2022

October 19, 2022

Sand bar at Croil Island – looking south

COVER PAGE- PHOTO CREDIT: TONY DAVID, AUGUST 15TH, 2022

EXECUTIVE SUMMARY

Local supply conditions in the Lake Ontario basin during the reporting period (March 2022 through August 2022) were generally drier than average, with the exception of March. March net basin supplies were 32% higher than the long-term monthly average. The six-month net basin supplies to Lake Ontario were exceeded 60% of the time during the historic record from 1900-2021.

The International Lake Ontario-St. Lawrence River Board (Board)'s outflow management strategy varied during the reporting period in response to weather and water supply conditions. A reduction in outflows to facilitate the installation of safety booms at Hydro-Québec facilities in the downstream section of the St. Lawrence River was done in April. In May, flows were also temporarily decreased to assist New York Power Authority in the installation of a positive restraint barrier at Long Sault Dam. These operations constituted minor deviations under the definition of the IJC directive and resulted in the accumulation of approximately 1.5 cm (0.6 in) on Lake Ontario compared with strict adherence to Plan prescribed outflows.

Once the work was complete at Long Sault Dam, the Board commenced offsetting deviations to remove the accumulated deviations from Lake Ontario. Offsetting deviations continued until the 1.5 cm (0.6 in) were removed from the lake in mid-August.

Lake Ontario's water level started the reporting period much above average (1918-2021) and climbed at a below seasonal average pace through the first week of May when levels crested at 75.21 m (246.7 ft). Lake Ontario then remained relatively stable with incremental declines until mid-June when widespread abnormally dry conditions, coupled with higher than average outflows which exceeded inflows caused water levels to drop quickly through the remainder of the summer. The lake ended the reporting period below average and nearing low criterion H14 thresholds. The Board met remotely three 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 and IAG members, the secretaries, and the regulation representatives continued to be actively engaged in outreach, information exchange and liaison with stakeholders throughout the system.

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*Appendix B, available on the Reports Library page of the Board's website, provides background information and definitions allowing this report to focus on the issues and conditions of the most recent six-month reporting period.

1 HYDROLOGICAL CONDITIONS

1.1 LAKE ONTARIO BASIN - NET BASIN SUPPLY

Monthly net basin supplies (NBS) to Lake Ontario (see Appendix B for definition) for March 2022 through August 2022 and the average (1900-2021) for the six-month period are provided in Table 1. Monthly net basin supplies were below average every month of the reporting period with the exception of March when net basin supplies were 32% higher than the long-term monthly average for March.

1.2 SUPPLY FROM LAKE ERIE

Although the level of Lake Erie continued to decline from the record highs observed in 2020 and the notable highs of 2021, the inflows to Lake Ontario from Lake Erie remained well above average from March through August (Table 1). The six-month average inflow to Lake Ontario from Lake Erie was the 19th 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 2020 and the supplies for 2020, 2021 and 2022 (through August). The grey horizontal bars are the long-term monthly NTS maxima and minima. Net total supplies remained above average (Table 1). Overall, the six-month average net total supply was the 26th highest since reliable records began in 1900.

1.4 OTTAWA RIVER BASIN

Outflows from the Ottawa River basin started the reporting period below average in March, rose to above average flows in mid-March, and then fell below average briefly before the onset of the freshet in early April. The flows remained generally above average (1963-2019) through mid-July when drier conditions pushed flows slightly below average for a few weeks before flows returned to above average for the remainder of the reporting period (Figure 2). More details of the conditions during the Spring freshet can be found on the Ottawa River Regulation Planning Board website here: https://ottawariver.ca/2022-ottawa-river-spring-freshet-review/

2 REGULATORY OPERATIONS

2.1 OUTFLOW MANAGEMENT OVERVIEW

Figure 3 shows actual daily outflows from Lake Ontario for 2020, 2021 and 2022 (through August). Table 2a summarizes the weekly outflows and Table 2b lists all of the flow changes that were made during the reporting period.

High Net Total Supplies through the wet fall of 2021 and the winter of 2021-2022 caused the 52-week look-back component of the rule curve algorithm to adjust outflows up from flows computed based on the existing Lake Ontario levels. This, combined with higher than average inflows from Lake Erie, caused Plan 2014 to prescribe higher than average outflows throughout the reporting period. Overall, the total

average outflow released from March 1, 2022 through August 31, 2022 was 8,530 m^3/s (301,000 cfs) which is the 13th highest 6 month average on record.

As described in Section 2.2, the Board conducted two minor deviations for several weeks each in April and May. Offsetting deviations were implemented to remove the accumulated deviations as soon as the May minor deviation was complete.

2.2 Deviations from Regulation Plan 2014

Figure 4 shows daily outflows from January through August 2022 (black line) compared to the weekly Plan-specified outflows from Lake Ontario (grey squares) as well as preproject flows (red circles) (i.e. the levels and outflows that would have occurred had the hydropower project, associated dredging and subsequent outflow management not been undertaken). All 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 to maintain the intent of the Board's outflow strategy and are not required to be paid back by subsequent offsetting outflows.

Plan 2014 prescribed flows were released from the start of the reporting period until outflows were temporarily reduced to facilitate installation of a safety boom at Hydro-Québec power facilities in the lower portion of the St. Lawrence River during weeks ending April 15 and April 22. During the weeks ending May 13, 20, and 27 outflows were again temporarily reduced to assist New York Power Authority (NYPA) to install a positive restraint barrier at Long Sault Dam. During these two minor deviations a total of 1.5 cm (0.6 in) of minor deviations were accumulated on Lake Ontario. Offsetting deviations were immediately implemented upon NYPA's completion of the positive restraint barrier. Flow increases of approximately 10 to 80 m^3/s (350 to 2800 ft^3/s) were maintained on a weekly mean basis until the 1.5 cm (0.6 in) was fully removed from Lake Ontario by August 13.

2.3 Water Levels throughout the System

Figure 5 shows the daily levels of Lake Ontario for 2020, 2021 and 2022 (through August). Lake Ontario's water level started the reporting period much above average (1918-2021) and climbed at a below seasonal average pace through the first week of May when levels crested at 75.21 m (246.7 ft). Lake Ontario then remained relatively stable with incremental declines until mid-June when widespread abnormally dry conditions, coupled with higher than average outflows which exceeded inflows caused water levels to drop quickly through the remainder of the summer. The lake ended the reporting period below average and nearing low criterion H14 thresholds. The water level of Lake Superior began the reporting period below its average but quickly rose through the spring to well above average. Lakes Michigan-Huron and Erie stayed above their averages throughout the reporting period.

As a means of determining the effect of the hydropower project, associated dredging and subsequent outflow management, a comparison of Lake Ontario's actual monthly levels and outflows to those that would have occurred under preproject conditions is provided in Table 3. This summary shows that Lake Ontario was approximately 63 to 72 cm (2.1 to 2.4 ft) lower than it would have been under the natural preproject condition throughout the reporting period. A comparison of the quarter month levels to long-term average, preproject levels (red circles), and computed Plan 2014 levels (black squares) in 2021 and 2022 (through August) is also shown in Figure 6.

In the first month of the reporting period, the lake rose 14 cm (6.0 in) which is very near the average 13 cm (5.2 in) rise for March. The lake level then rose 11 cm (4.8 in) in April, much less than the 21 cm (6.8 in) average rise for the month. Then in May, water levels crested during the first week at 75.21 m (246.7 ft) and then declined 7 cm (2.8 in.) by the end of the month for a net change of a 4 cm (1.6 in) decline. On average lake levels rise 9 cm (3.6 in) in May. This lake level crest was more than a month earlier than the average lake crest in mid-June. In June, lake levels continued to decline at a rapid pace dropping 11 cm (4.4 in), which is the 9th largest decline for the month and on average, the level in June declines 1 cm (0.4 in). July and August saw levels continue to decrease rapidly at a clip of 18 cm (6.8 in) and 20 cm (8 in) respectively, which is more than the average decline for both these months (9 cm (3.6 in) and 14 cm (5.6 in) respectively). The rapid decline in July was the 10th largest decline on record and the August was the 12th largest decline on record. On the last day of the reporting period (August 31, 2022), Lake Ontario was at a level of 74.66 m (245.8 ft), which was 16 cm (6.4 in.) below average, and 4 cm (1.6 in) above the applicable low criterion H14 threshold.

The water levels of Lake St. Lawrence at Long Sault Dam (Figure 7) remained at or above the navigation season minimum of 72.6 m (238.2 ft) throughout the reporting period except for two days on August 17-18, when levels dropped to 72.56 m (238.0 ft) and 72.59 m (238.2 ft) due to sustained NE winds. Since Lake St. Lawrence levels rebounded relatively quickly due to the shift in prevailing winds, it was not necessary to conduct operational adjustments to offset the prevailing winds impact on Lake St. Lawrence levels. Lake St. Lawrence levels remained well below average levels for nearly the entire reporting period, except March and April, and near or below record lows for most of July and August. No impacts to water intakes were reported.

Daily water levels at Summerstown on Lake St. Francis were generally near average (1960-2021) from March through August.

The daily water levels on Lake St. Louis at Pointe-Claire (Figure 8) generally remained above average (1960-2021) throughout the reporting period owing to the higher than average Lake Ontario outflows combined with higher than average Ottawa River flows in the spring and generally near average levels through the summer.

The daily levels at the Port of Montreal (Figure 9) and at Sorel on Lake St. Peter (Figure 10) generally remained above average from March through June and then dropped to slightly below average in July and August.

2.4 Iroquois Dam Operations

In April, all gates at Iroquois Dam were lowered to target a 30 cm head loss downstream (30 gates lowered on April 20, and two gates lowered on April 21). These operations by Ontario Power Generation (OPG) were in response to the unpredictability of the flow reductions respecting the Plan 2014 F Limit and the risk of exceeding the maximum headwater elevation (73.87 m) at Moses-Saunders Dam. All of the gates were raised again on May 6 and remained open for the rest of the reporting period. When outflows at the Moses-Saunders Dam are decreased, levels upstream of the Moses-Saunders Dam on Lake St. Lawrence increase. Iroquois Dam can be operated to suppress high water levels on Lake St. Lawrence. The public can learn more about the operation of Iroquois Dam by watching a short video on the Board's website (Module 4): https://ijc.org/en/loslrb/library/modules.

2.5 Long Sault Dam Operations

A varying number of gates were opened at Long Sault Dam, at different times, to spill the amount of total Lake Ontario outflow that exceeded the capacity of the Moses-Saunders Dam. The flow capacity of the Moses-Saunders Dam was reduced at times due to turbine and transmission maintenance outages and/or electricity market conditions. Long Sault Dam was operated intermittently on 82 of the 184 days of the reporting period (45 percent of the time). The total daily amount of water spilled (not available for electrical power generation) reached a maximum daily mean value of 2017 m^3/s on May 7, 2022.

2.6 Raisin River Diversion

The Raisin River Diversion remained closed throughout the reporting period.

2.7 St. Lawrence Seaway Report

The 2022 navigation season opened in the Montreal-Lake Ontario section of the Seaway March 22, 2022. The first ship to pass through St. Lambert Lock in Montréal, Québec was the CSL Welland.

2.8 Hydropower Peaking and Ponding

Peaking and ponding operations are the within-day and day-to-day flow variations, respectively, that enable Ontario Power Generation and New York Power Authority to better align their electricity production with demand. However, these outflow variations cause water levels immediately upstream and downstream of the Moses-Saunders Dam to fluctuate more than they otherwise would. The IJC has approved guidelines and conditions within which the hydropower entities may conduct peaking and ponding operations. On November 30, 2021, the IJC approved the continuation of peaking and ponding operations for the 5-year period from December 1, 2021 to November 30, 2026 in accordance with the conditions specified in Addendum No. 3 to the Operational Guides for Regulation Plan 1958-D. Peaking and ponding operations are only conducted if there is full concurrence from the Board and Operations Advisory Group.

No peaking nor ponding operations were conducted during the reporting period.

3 Board Activities

The Board continues 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, continues to monitor conditions throughout the Lake Ontario-St. Lawrence River system on an ongoing basis. Support staff continue to provide the Board with frequent water level and hydrologic conditions updates, and advise the Board on the impacts that potential outflow management strategies would have on water levels and flows throughout the system under a range of potential water supply scenarios. The Board's Operations Advisory Group (OAG) continues to hold weekly teleconferences to review conditions and advise on weekly operational requirements and constraints and implications of potential outflow management. More information on the roles and responsibilities of the different groups associated with board can be found here: https://ijc.org/en/loslrb/lake-ontario-st-lawrence-river-regulation.

The Board continues to communicate regularly with the IJC. As described in Section 3.3, the Board continues to work with the IJC, through the Communications Committee, to seek opportunities to improve communications, outreach, and engagement with its stakeholders and the public. As described in Section 3.4, the St. Lawrence Committee on River Gauging continues 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 remotely via videoconference three times during the reporting period (March 18, June 28, and August 8) along with IJC advisors, associated subcommittees, advisory groups and support staff, to conduct business and assess conditions. Table 4 provides a list of Board Members in attendance at these meetings.

3.2 Board Membership Changes

BG Kimberly Peeples was appointed as US Co-Chair of the Board on June 1, 2022 for a three-year term ending June 2, 2025. There were no other membership changes during the reporting period.

3.3 Communications, Outreach and Engagement

During the reporting period, two media releases were published, distributed and posted on the Board's website in both French and English. Board members and support staff responded to a number of telephone and email inquiries concerning water level conditions and Board outflow management 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 600 subscribers (sign up link for the weekly updates can be found here: https://ijc.us2.list-manage.com/subscribe?u=6f596332b572c1092ac6c20a3&id=15d567a8eb. The Board continued to operate and maintain its website (https://www.ijc.org/en/loslrb).

The Board conducted two public webinars in English and French during the reporting period. The first webinar was held on April 19 in English and April 20 in French. These webinars were held to address the concerns of many individuals over high water conditions impacting the basin in 2022. The Board emphasized at these meetings that there was a much higher chance of low water impacts this year than high water impacts. The second set of public webinars was conducted on August 30 in English and August 31 in French. These webinars were conducted with the other two International Great Lakes Boards, the International Lake Superior Board of Control and the International Niagara Board of Control. These webinars allowed the Board the opportunity to address many attendees concerns on the low water conditions and the subsequent impacts on recreational boating and tourism throughout the system. Additionally, Board members supported IJC led community leaders meetings in the US in Niagara County on March 29, and Oswego on March 30, and in Canada in Montreal, the 1000 islands and east of Toronto (Brighton area) on April 12, 13 and 14.

Regular weekly and extra updates on the Board's Facebook pages continued to be posted in both French and English and Board staff responded to direct message inquiries. The French and English pages currently have over 900 and 7,000 "followers" respectively and total post "reaches" of over 8,000 on a monthly basis.

Board support staff continued to provide weekly and monthly briefings of water levels, flows, and forecasts. 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.

Further details regarding Communication Committee activities and outreach efforts are included in Appendix A.

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.

A precision survey is planned for the Fall of 2022. NOAA's National Geodetic Survey (NGS) office will follow the same survey route as the 2008 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

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

The GLAM Committee will support the Board in evaluating whether adjustments to the plan might make sense and what recommendations should be made to the IJC. Any proposed changes to Plan 2014 would then need to be approved by the IJC and agreed to by the Governments of Canada and the United States. Updates and detailed reports of GLAM activities can be found on the GLAM Committee's website (https://www.ijc.org/en/glam).

Throughout the reporting period, the GLAM Committee has been transitioning from Phase 1 to Phase 2 of the expedited review of Plan 2014. As follow up to Phase 1 and as outlined in the recommendations, the GLAM Committee has continued to refine components of the Decision Support Tool (DST) developed

to support high water deviation decisions by the International Lake Ontario – St. Lawrence River Board. The intent is to ensure that an operational tool remains available for use while developing a strategy for a modernized and more efficient DST moving forward. In addition to the DST work, the GLAM Committee has supported the IJC with 11 community leader meetings throughout the Lake Ontario – St. Lawrence River basin as well as meetings with elected officials from New York, Ontario and Quebec. With the help of Consensus Building Institute (CBI), these successful meetings provided the GLAM Committee an opportunity to get direct feedback on the work of the first phase of the Plan 2014 review.

As part of the transition to the second phase for the expedited review of Plan 2014, the GLAM Committee has been concentrating on developing a project plan to guide the overall work objectives. The Phase 2 effort is being organized around the committee's adaptive management Strategy Document. Technical teams including the hydroclimate team, the plan formulation team, the impact assessment team made up of sub-teams related to shoreline impacts, ecosystem impacts, commercial navigation impacts, and hydropower impacts, as well as decision support team, have all been active in the planning process. A virtual workshop was held June 21 and 22, 2022 to ensure immediate priorities were identified for Phase 2 as well as to seek agreement on a base modelling framework for assessing performance of alternative outflow management strategies. The committee will be using outcomes from the planning activities to develop a new work plan for Fiscal Year 23 early in the next reporting period.

Table 1: Provisional Monthly Mean Supplies to Lake Ontario

Month	Inflow from Lake Erie				Local Net Basin Supplies			Total Supplies			
	m^3/s	tcfs	Exceed. Prob.(1)	% of LTA (1)	m^3/s	tcfs	Exceed. Prob. (1)	m^3/s	tcfs	Exceed. Prob. (1)	% of LTA (1)
Mar 22	6920	244	9	119	2690	95	17	9610	339	7	123
Apr 22	7090	250	11	117	2030	72	74	9120	322	36	105
May 22	7120	251	15	112	1380	49	64	8500	300	32	106
Jun 22	6950	245	19	110	1070	38	55	8020	283	29	107
Jul 22	6830	241	20	109	430	15	71	7260	256	34	105
Aug 22	6620	234	24	108	70	2	68	6690	236	35	105
6-month Average	6920	244	14	112	1280	45	60	8200	290	23	109

(1) Based on period of record 1900-2021

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

Week Ending 2022	Adjusted Rule Curve Flow		Plan Flow		App. Rule/ Limit	Actual Flow		Operational Adjustments &/or Plan Limitations		Deviations						Type	Details
										Weekly		Accumulated		Cumulative effect on L. Ontario			
	m^3/s	tcfs	m^3/s	tcfs		m^3/s	tcfs	m^3/s	tcfs	m^3/s	tcfs	m^3/s-wks	tcfs-wks	cm	in.		
4-Mar	8520	301	8520	301	RC	8520	301	0	0	0	0	--	0.0	0.0	0.0	--	Plan (Rule Curve)
11-Mar	8600	304	8550	302	I	8550	302	-50	-2	0	0	--	0.0	0.0	0.0	--	Maintain Lake St. Lawrence (Long Sault Dam) I-Limit threshold of 71.8 m; Operational adjustment to Rule Curve
18-Mar	8660	306	8660	306	RC	8660	306	0	0	0	0	--	0.0	0.0	0.0	--	Plan (Rule Curve)
25-Mar	8700	307	8300	293	F/L	8300	293	-400	-14	0	0	--	0.0	0.0	0.0	--	Plan (Rule Curve); Operational adjustments for F Limit (Maintain L. St. Louis ≤ 22.1 m while L. Ont <75.3 m) and L Limit (applicable L limit = 8620 m^3/s)
1-Apr	8940	316	8490	300	F/L	8490	300	-450	-16	0	0	--	0.0	0.0	0.0	--	Operational adjustments for F Limit (Maintain L. St. Louis ≤ 22.1 m while L. Ont <75.3 m) and L Limit (applicable L limit = 8690 m^3/s)
8-Apr	8990	317	8640	305	L/F	8640	305	-350	-12	0	0	--	0.0	0.0	0.0	--	Maximum L Limit (8730 m^3/s) and operational adjustments for F Limit (Maintain L. St. Louis ≤ 22.1 m while L. Ont <75.3 m)
15-Apr	8940	316	8180	289	F	7970	281	-970	-35	-210	-7.4	-210	-7.4	0.7	0.3	Minor	Operational adjustments for F Limit (Maintain L. St. Louis ≤ 22.1 m while L. Ont <75.3 m); Minor deviation to allow Hydro-Québec to install safety booms
22-Apr	9060	320	8030	284	F	7980	282	-1080	-38	-50	-1.8	-260	-9.2	0.8	0.3	Minor	
29-Apr	9140	323	8340	295	F	8340	295	-800	-28	0	0	-260	-9.2	0.8	0.3	--	Operational adjustments for F Limit (Maintain L. St. Louis ≤ 22.1 m while L. Ont <75.3 m)
6-May	9180	324	8560	302	F	8560	302	-620	-22	0	0	-260	-9.2	0.8	0.3	--	
13-May	9160	323	8940	316	F/L	8840	312	-320	-11	-100	-3.5	-360	-12.7	1.1	0.4	Minor	Operational adjustments for F Limit (Maintain L. St. Louis ≤ 22.1 m while L. Ont <75.3 m); Offsetting minor deviation (outflow set to L limit based on actual EOW L. Ont. level); Minor deviation to allow NYPA to install positive restraint barrier at Long Sault Dam
20-May	9100	321	8930	315	L	8800	311	-300	-10	-130	-4.6	-490	-17.3	1.5	0.6	Minor	Minor deviation to allow NYPA to install positive restraint barrier at Long Sault Dam

Week Ending 2022	Adjusted Rule Curve Flow		Plan Flow		App. Rule/ Limit	Actual Flow		Operational Adjustments &/or Plan Limitations		Deviations						Type	Details
										Weekly		Accumulated		Cumulative effect on L. Ontario			
	m^3/s	tcfs	m^3/s	tcfs		m^3/s	tcfs	m^3/s	tcfs	m^3/s	tcfs	m^3/s-wks	tcfs-wks	cm	in.		
27-May	9020	319	8820	311	L	8870	313	-150	-6	50	1.8	-440	-15.5	1.4	0.6	Minor	Minor deviation to allow NYPA to install positive restraint barrier at Long Sault Dam; Offsetting minor deviation (outflow set to L limit based on actual EOW L. Ont. level)
3-Jun	9040	319	8710	308	L/F	8730	308	-310	-11	20	0.7	-420	-14.8	1.3	0.5	Minor	Offsetting minor deviation (outflow set to L limit based on actual EOW L. Ont. level); Operational adjustments for F Limit (Maintain L. St. Louis ≤ 22.1 m while L. Ont <75.3 m)
10-Jun	9100	321	8850	313	L	8890	314	-210	-7	40	1.4	-380	-13.4	1.2	0.5	Minor	Offsetting minor deviations (outflow set to L limit based on actual EOW L. Ont. level)
17-Jun	9090	321	8820	311	L	8850	313	-240	-8	30	1.1	-350	-12.4	1.1	0.4	Minor	
24-Jun	9080	321	8780	310	L	8820	311	-260	-10	40	1.4	-310	-10.9	1.0	0.4	Minor	
1-Jul	8960	316	8740	309	L	8750	309	-210	-7	10	0.4	-300	-10.6	0.9	0.4	Minor	
8-Jul	8840	312	8700	307	L	8710	308	-130	-4	10	0.4	-290	-10.2	0.9	0.4	Minor	
15-Jul	8700	307	8650	305	L	8660	306	-40	-1	10	0.4	-280	-9.9	0.9	0.4	Minor	
22-Jul	8520	301	8520	301	RC	8600	304	80	3	80	2.8	-200	-7.1	0.6	0.2	Minor	
29-Jul	8510	301	8510	301	RC	8580	303	70	2	70	2.5	-130	-4.6	0.4	0.2	Minor	
5-Aug	8450	298	8450	298	RC	8520	301	70	3	70	2.5	-60	-2.1	0.2	0.1	Minor	Offsetting minor deviations
12-Aug	8320	294	8320	294	RC	8380	296	60	2	60	2.1	0	0.0	0.0	0.0	Minor	
19-Aug	8180	289	8180	289	RC	8180	289	0	0	0	0	--	0.0	0.0	0.0	--	Plan (Rule Curve)
26-Aug	7960	281	7960	281	RC	7960	281	0	0	0	0	--	0.0	0.0	0.0	--	
2-Sep	7960	281	7960	281	RC	7960	281	0	0	0	0	--	0.0.	0.0	0.0	--	

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

Table 2b: Summary of Flow Changes

Week Ending 2022	Flow Changes								Details
	Day	Hr	(m^3/s)		(tcfs)		Reason	App. Rule/ Limit	
			From	To	From	To			
04-Mar	26-Feb	0001	8180	8520	288.9	300.9	Plan	RC	Plan (Rule Curve)
11-Mar	9-Mar	1201	8520	8600	300.9	303.7	OA	RC	Operational adjustment (OA) to Rule Curve
18-Mar	12-Mar	0001	8600	8660	303.7	305.8	Plan	RC	Plan (Rule Curve)
25-Mar	19-Mar	0001	8660	8700	305.8	307.2	Plan	RC	
	20-Mar	1401	8700	8000	307.2	282.5	OA	F	OAs to max F Limit (Maintain L. St. Louis ≤22.1 m while L. Ont <75.3 m)
	22-Mar	1101	8000	8300	282.5	293.1	OA	F	
	23-Mar	1101	8300	8620	293.1	304.4	OA	L	OA to max L Limit (Seaway navigation season opened March 22)
	24-Mar	1401	8620	8000	304.4	282.5	OA	F	OAs to max F Limit (Maintain L. St. Louis ≤22.1 m while L. Ont <75.3 m)
1-Apr	26-Mar	1801	8000	8100	282.5	286.0	OA	F	
	27-Mar	1101	8100	8300	286.0	293.1	OA	F	
	28-Mar	1101	8300	8600	293.1	303.7	OA	F	
	29-Mar	1101	8600	8690	303.7	306.9	OA	L	OA to max L Limit
8-Apr	2-Apr	0001	8690	8730	306.9	308.3	Plan	L	Plan (maximum L Limit)
	8-Apr	0901	8730	7900	308.3	279.0	OA	F	OAs to max F Limit (Maintain L. St. Louis ≤22.1 m while L. Ont <75.3 m)
	8-Apr	1501	7900	7700	279.0	271.9	OA	F	
15-Apr	9-Apr	1201	7700	7550	271.9	266.6	OA	F	
	10-Apr	1201	7550	7900	266.6	279.0	OA	F	
	11-Apr	1201	7900	8100	279.0	286.0	OA	F	
	12-Apr	0001	--	--	--	--	Dev	Minor	Minor deviation to allow Hydro-Québec to install safety booms
22-Apr	--	--	--	--	--	--	Dev	Minor	
	20-Apr	1101	8100	7600	286.0	268.4	OA	F	OA to max F Limit (Maintain L. St. Louis ≤22.1 m while L. Ont <75.3 m)
	21-Apr	1601	7600	7900	268.4	279.0	OA	F	
	22-Apr	1701	7900	8100	279.0	286.0	OA	F	
29-Apr	24-Apr	1101	8100	8300	286.0	293.1	OA	F	
	27-Apr	1201	8300	8450	293.1	298.4	OA	F	
	28-Apr	1201	8450	8550	298.4	301.9	OA	F	
6-May	6-May	1201	8550	8650	301.9	305.5	OA	F	
13-May	7-May	1101	8650	8800	305.5	310.8	OA	F	
	8-May	1201	8800	8950	310.8	316.1	OA	F	
	9-May	1201	8950	9040	316.1	319.2	Dev	Minor	Offsetting minor deviation (outflow set to L limit based on actual EOW L. Ont. level)
	10-May	0501	9040	8800	319.2	310.8	Dev	Minor	Minor deviation to allow New York Power Authority to install permanent positive restraint barrier at Long Sault Dam
20-May	--	--	--	--	--	--	Dev	Minor	
27-May	--	--	--	--	--	--	Dev	Minor	
	22-May	1301	8800	8890	310.8	313.9	Dev	Minor	Offsetting minor deviation (outflow set to L limit based on actual EOW L. Ont. level)
3-Jun	28-May	0001	8890	8850	313.9	312.5	Dev	Minor	
	29-May	1101	8850	8600	312.5	303.7	OA	F	OA to max F Limit (Maintain L. St. Louis ≤22.1 m while L. Ont <75.3 m)
	1-Jun	1201	8600	8750	303.7	309.0	OA	F	
	2-Jun	1201	8750	8850	309.0	312.5	Dev	Minor	Offsetting minor deviations (outflow set to L limit based on actual EOW L. Ont. level)

Table 2b (continued): Summary of Flow Changes

Week Ending 2022	Flow Changes								Details
	Day	Hr	(m^3/s)		(tcfs)		Reason	App. Rule/ Limit	
			From	To	From	To			
10-Jun	4-Jun	0001	8850	8890	312.5	313.9	Dev	Minor	Offsetting minor deviations (outflow set to L limit based on actual EOW L. Ont. level)
17-Jun	11-Jun	0001	8890	8850	313.9	312.5	Dev	Minor	
24-Jun	18-Jun	0001	8850	8820	312.5	311.5	Dev	Minor	
1-Jul	25-Jun	0001	8820	8750	311.5	309.0	Dev	Minor	
8-Jul	2-Jul	0001	8750	8710	309.0	307.6	Dev	Minor	
15-Jul	9-Jul	0001	8710	8660	307.6	305.8	Dev	Minor	
22-Jul	16-Jul	0001	8660	8600	305.8	303.7	Dev	Minor	
29-Jul	23-Jul	0001	8600	8580	303.7	303.0	Dev	Minor	
5-Aug	30-Jul	0001	8580	8520	303.0	300.9	Dev	Minor	Offsetting minor deviations
12-Aug	6-Aug	0001	8520	8380	300.9	295.9	Dev	Minor	
19-Aug	13-Aug	0001	8380	8180	295.9	288.9	Plan	RC	Plan (Rule Curve)
26-Aug	20-Aug	0001	8180	7960	288.9	281.1	Plan	RC	
2-Sep	--	--	--	--	--	--	Plan	RC	

Table 3: Lake Ontario Recorded and Preproject Levels and Outflows

Month	Lake Ontario Monthly Mean Water Levels (IGLD 1985) - meters (feet)			Lake Ontario Monthly Mean Outflow m^3/s (tcfs)		
	Recorded	Preproject	Diff.	Recorded	Preproject	Diff.
Mar 22	74.99 (246.03)	75.69 (248.32)	-0.70 (-2.29)	8500 (300)	8320 (294)	180 (6)
Apr 22	75.13 (246.49)	75.79 (248.65)	-0.66 (-2.16)	8260 (292)	8710 (308)	-450 (-16)
May 22	75.17 (246.62)	75.80 (248.68)	-0.63 (-2.06)	8760 (309)	8720 (308)	40 (1)
Jun 22	75.13 (246.49)	75.78 (248.62)	-0.65 (-2.13)	8830 (312)	8680 (307)	150 (5)
Jul 22	74.95 (245.90)	75.63 (248.13)	-0.68 (-2.23)	8630 (305)	8370 (296)	260 (9)
Aug 22	74.74 (245.21)	75.46 (247.57)	-0.72 (-2.36)	8190 (289)	8010 (283)	180 (6)

Table 4: Attendance at Meetings

Member	MAR 18 Call	June 28 Call	Aug 8 Call
Mr. S. Durrett[1]	-		
BG K. Peeples[1a]		-	X
Mr. K. McCune[2]	X	X	X
Mr. D. Harper[3]	X	X	X
Mr. T. Brown	X	X	X
Ms. P. Clavet	X	X	X
Mr. A. David	X	X	X
Ms. J. Frain	X	-	X

Notes:

1. US Co-Chair through June 1, 2022

1a. US Co-Chair from June 1, 2022 through end of reporting period

2. US Alternate Co-Chair

3. Canadian Co-Chair

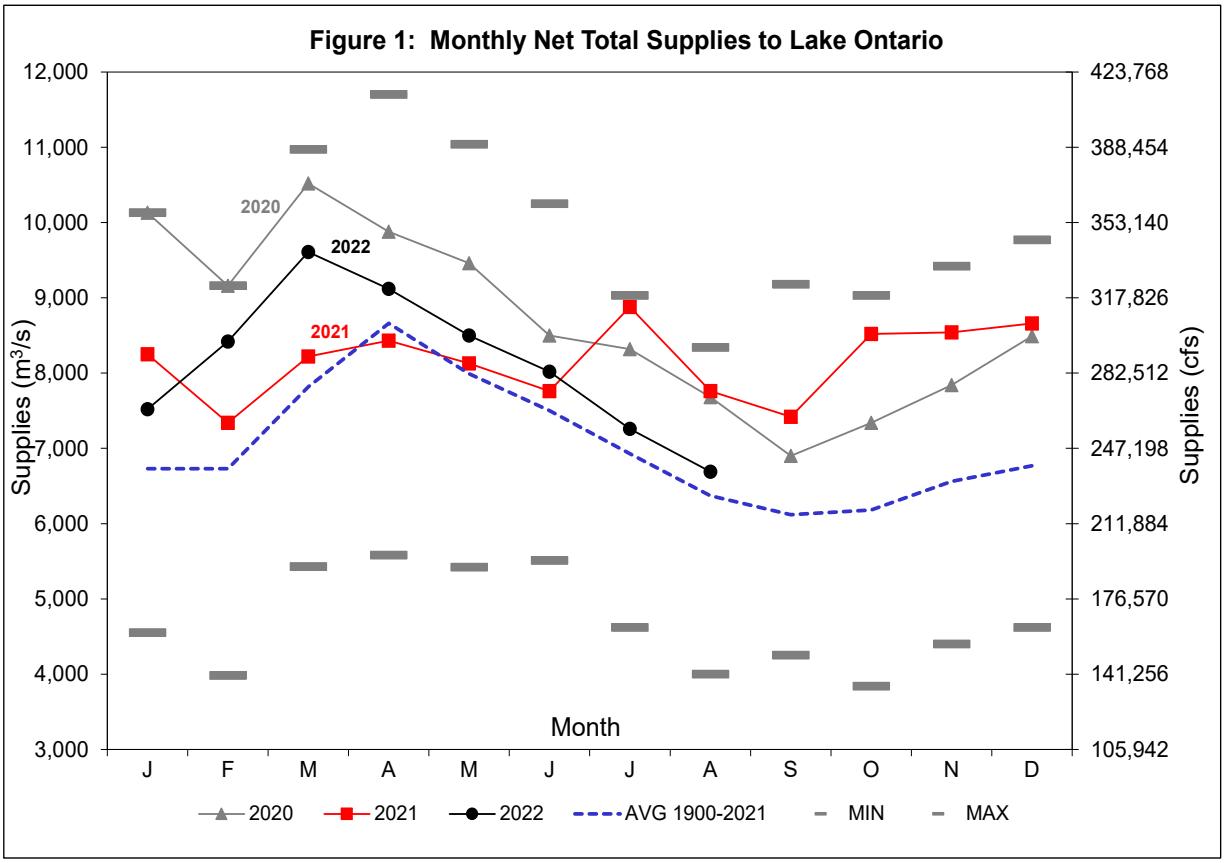


Figure 1: Monthly Net Total Supplies to Lake Ontario
Supplies (m³/s)
Supplies (cfs)
12,000
11,000
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
423,768
388,454
353,140
317,826
282,512
247,198
211,884
176,570
141,256
105,942
2020
2022
2021
Month
J F M A M J J A S O N D
2020 2021 2022 AVG 1900-2021 MIN MAX

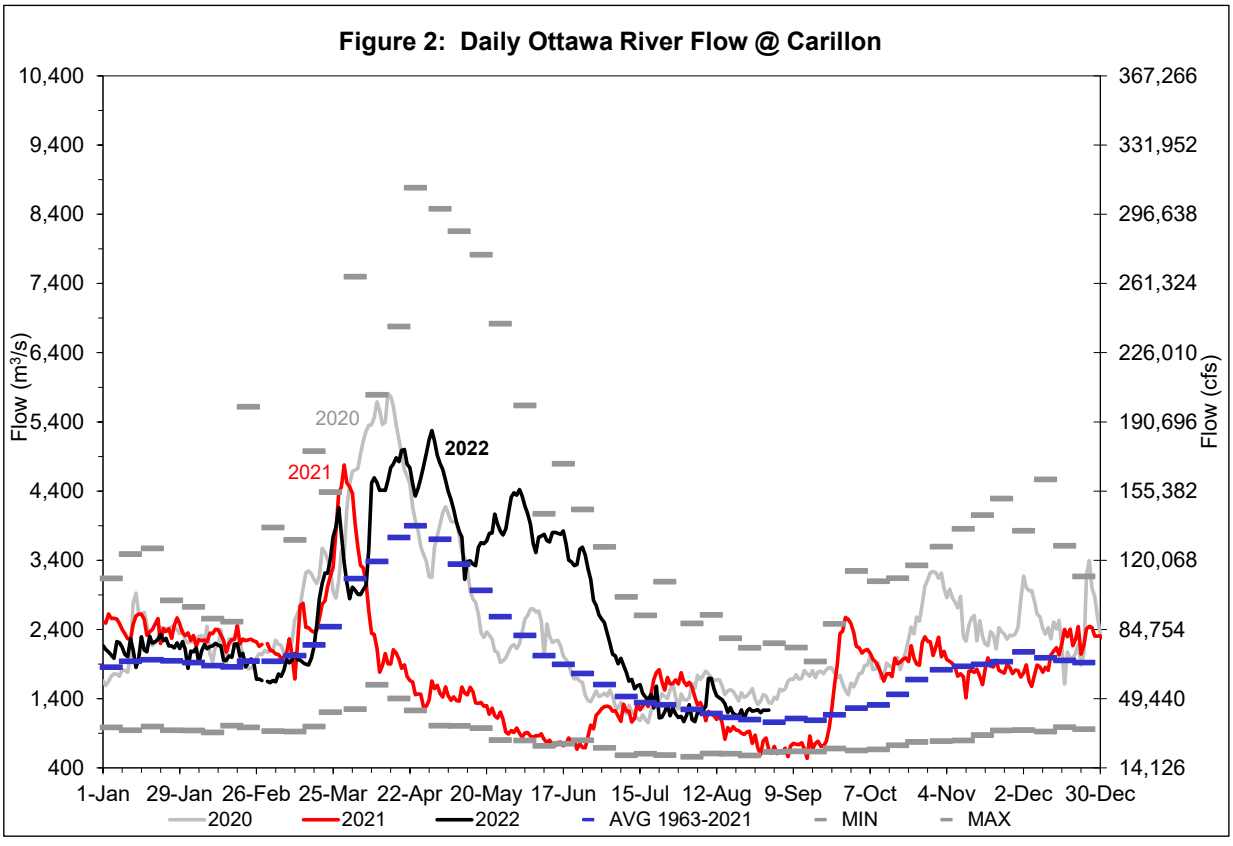


Figure 2: Daily Ottawa River Flow @ Carillon
Flow (m³/s)
Flow (cfs)
10,400
9,400
8,400
7,400
6,400
5,400
4,400
3,400
2,400
1,400
400
367,266
331,952
296,638
261,324
226,010
190,696
155,382
120,068
84,754
49,440
14,126
2020
2021
2022
1-Jan 29-Jan 26-Feb 25-Mar 22-Apr 20-May 17-Jun 15-Jul 12-Aug 9-Sep 7-Oct 4-Nov 2-Dec 30-Dec
2020 2021 2022 AVG 1963-2021 MIN MAX

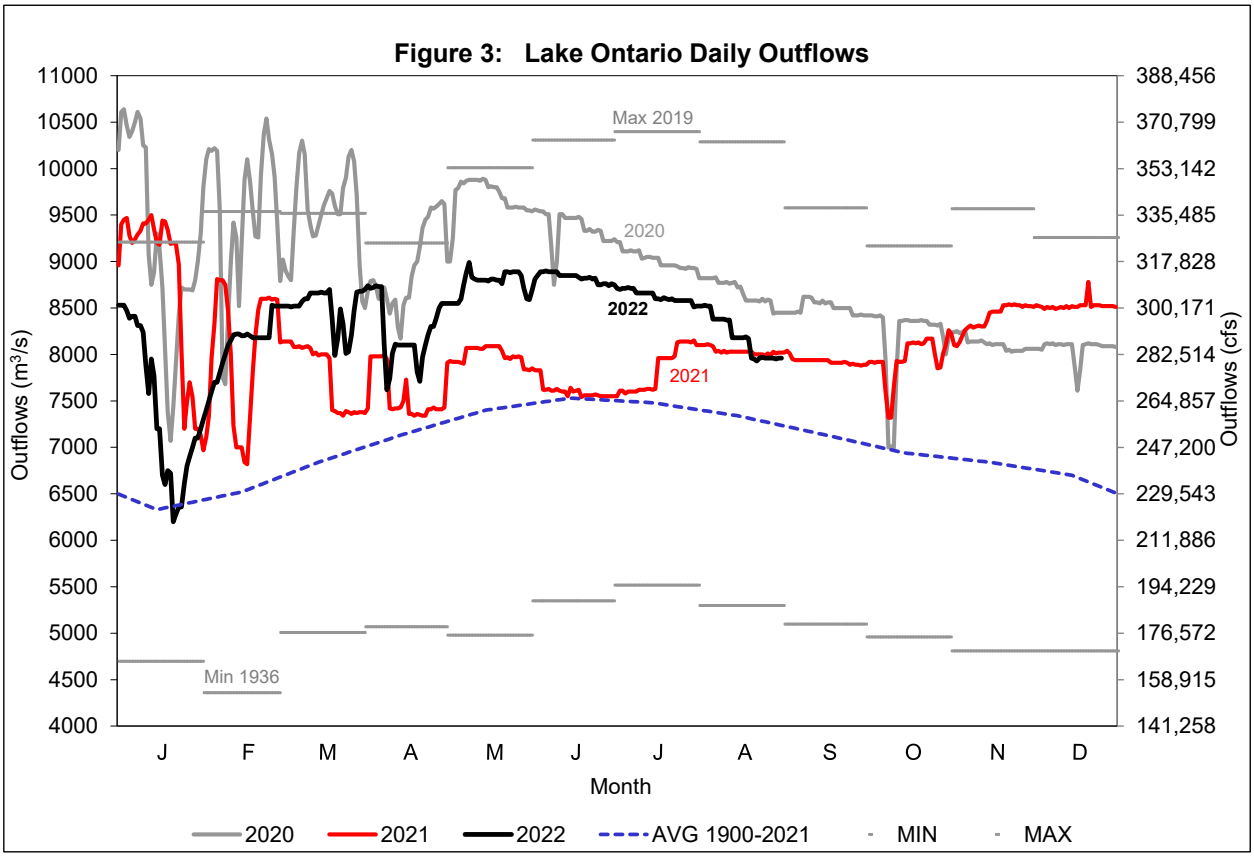


Figure 3: Lake Ontario Daily Outflows
Outflows (m³/s)
Outflows (cfs)
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
388,456
370,799
353,142
335,485
317,828
300,171
282,514
264,857
247,200
229,543
211,886
194,229
176,572
158,915
141,258
Max 2019
2020
2022
2021
Min 1936
J F M A M J J A S O N D
Month
2020 2021 2022 AVG 1900-2021 MIN MAX

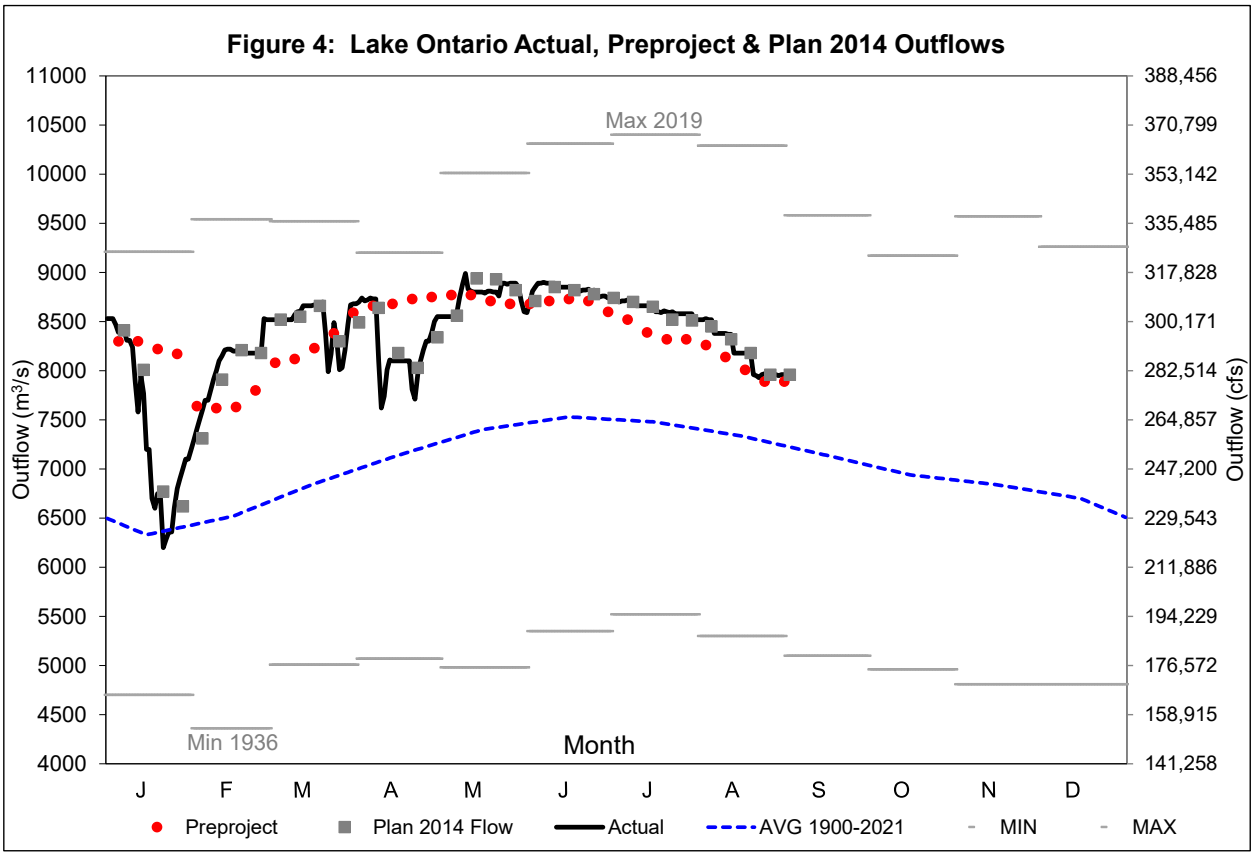


Figure 4: Lake Ontario Actual, Preproject & Plan 2014 Outflows
Outflow (m³/s)
Outflow (cfs)
11000
10500
10000
9500
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
388,456
370,799
353,142
335,485
317,828
300,171
282,514
264,857
247,200
229,543
211,886
194,229
176,572
158,915
141,258
Max 2019
Min 1936
Month
J F M A M J J A S O N D
Preproject Plan 2014 Flow Actual AVG 1900-2021 MIN MAX

Figure 5: Daily Lake Ontario Water Levels

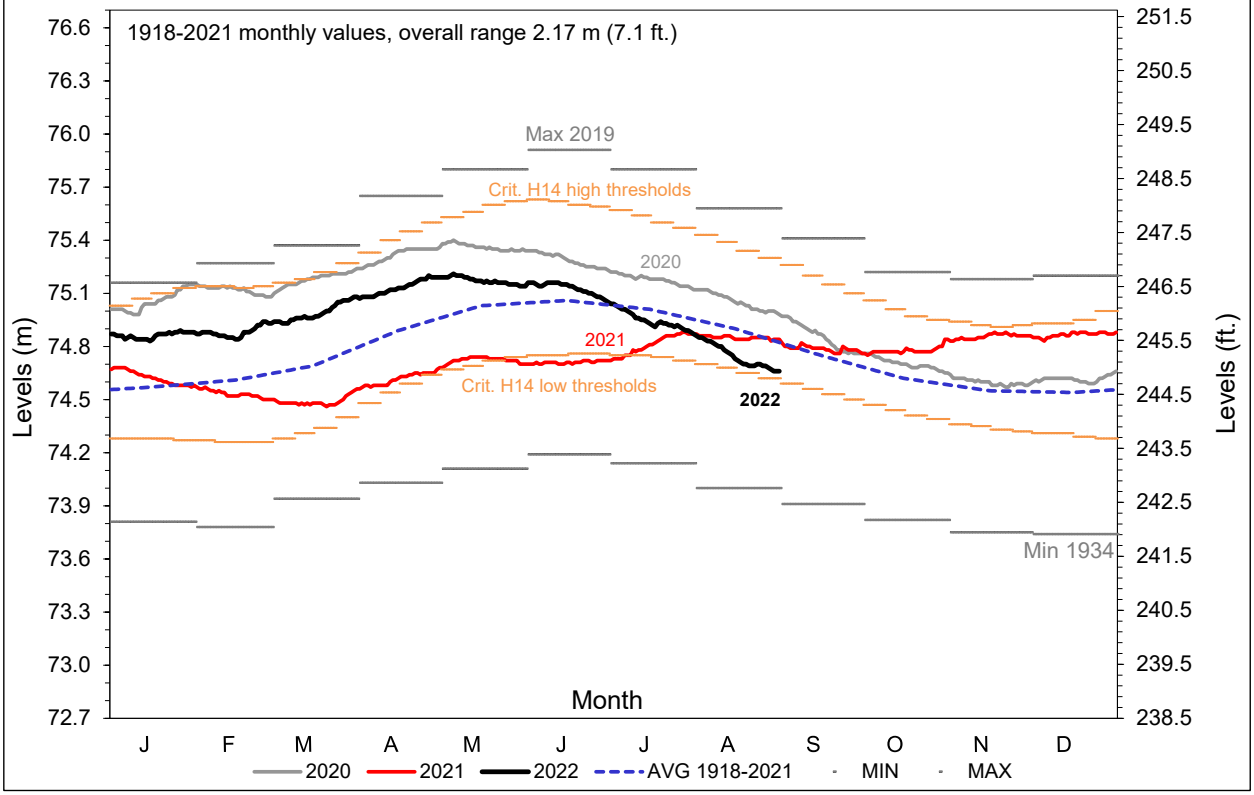


Figure 6: Lake Ontario Actual, Preproject & Plan 2014 Levels

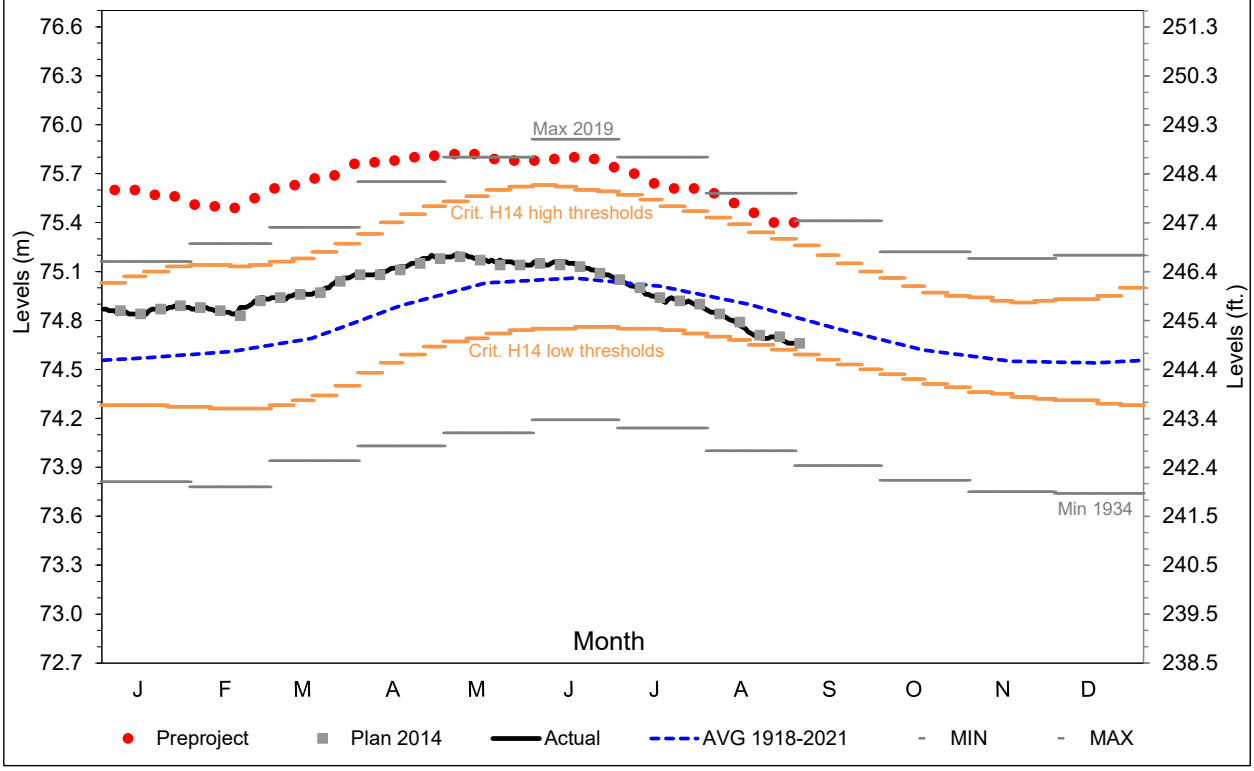


Figure 7: Daily Lake St. Lawrence Levels @ Long Sault Dam

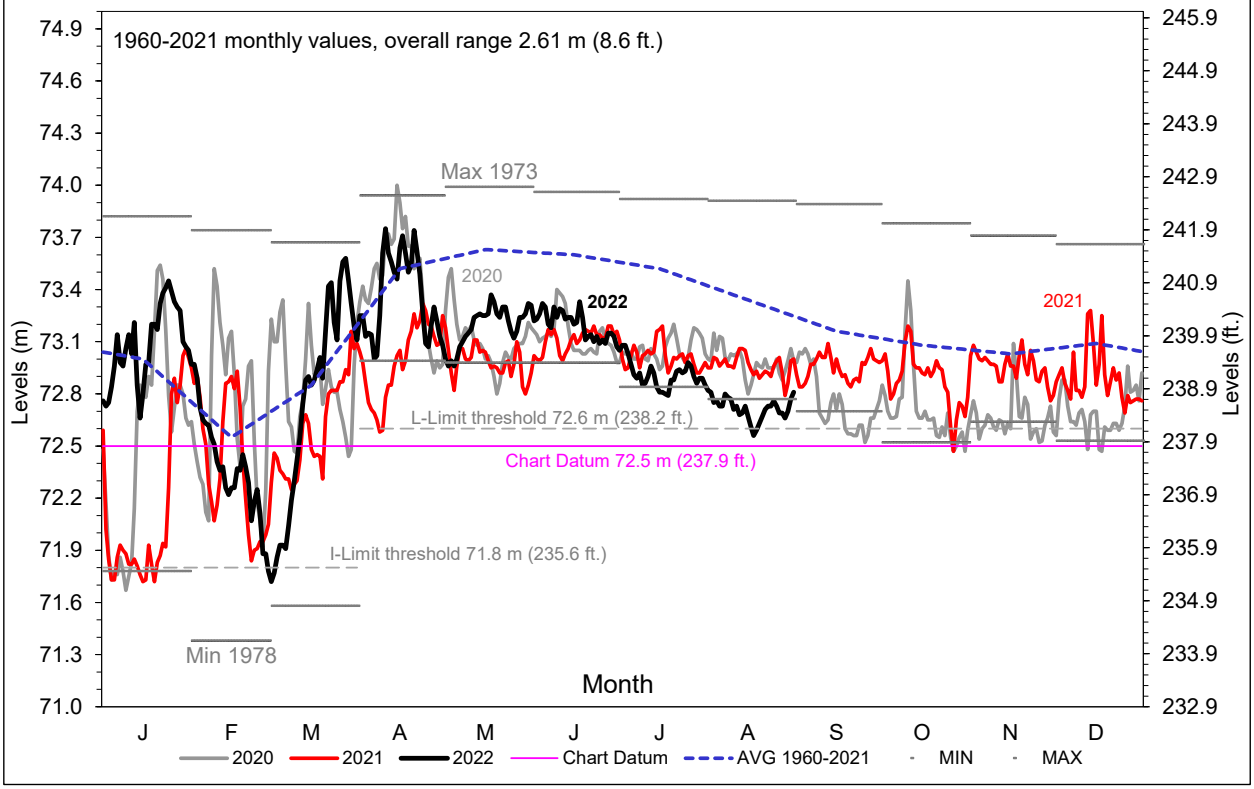


Figure 8: Daily Lake St. Louis Levels @ Pointe-Claire

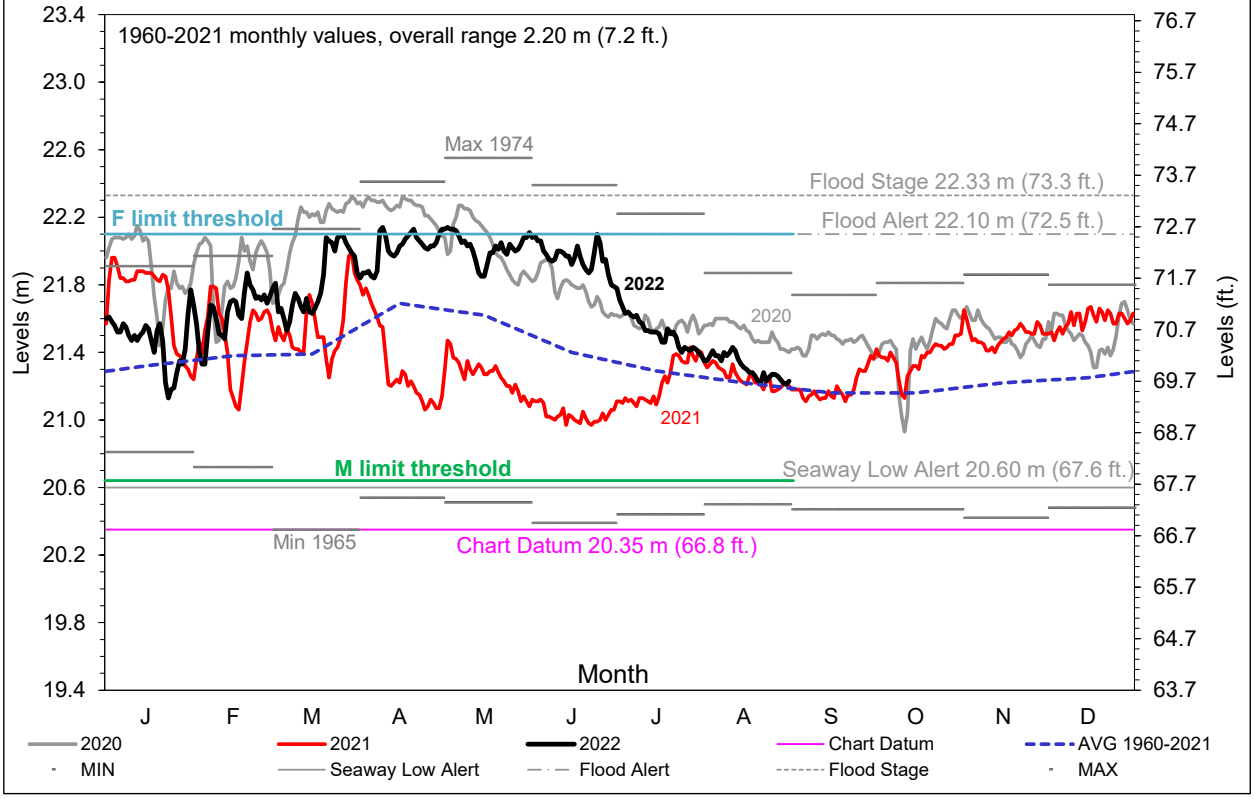


Figure 9: Daily Port of Montreal Levels @ Jetty #1

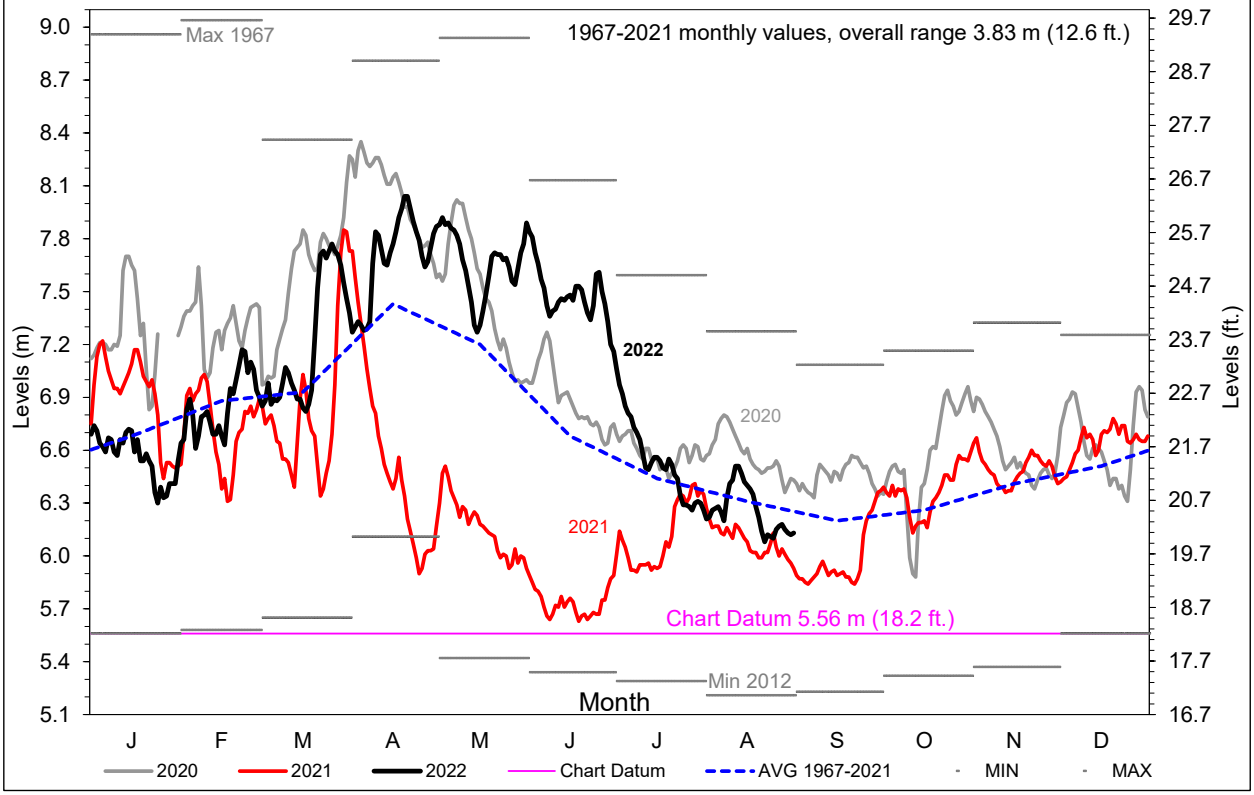
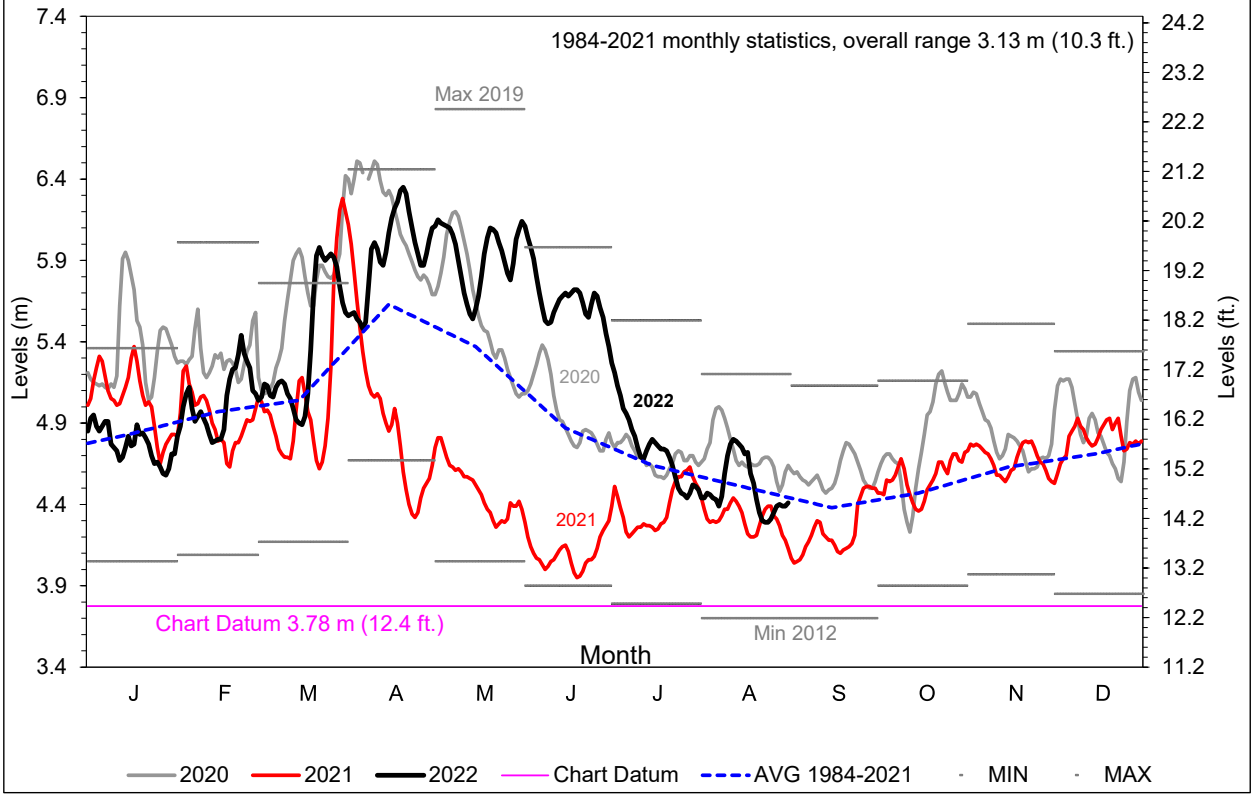


Figure 10: Daily Lake St. Peter Levels @ Sorel



APPENDIX A: ADDITIONAL OUTREACH ACTIVITIES

The Communications Committee held five meetings via teleconference. A smaller sub-section of the committee met bi-weekly to discuss pressing communications issues. The Committee continued to engage in initiatives and develop products to accomplish five strategic communication goals:

1. Inform: Increase general public awareness of the IJC and the ILOSLRB.
2. Reputation: Communicate accurately and in a timely fashion about the actions of the ILOSLRB and the reasons for those actions.
3. Communicate the Narrative: Continually reinforce the message that natural factors overwhelmingly affect water levels (high and low), trends and flows. By contrast, regulation of outflows has minimal effect on Lake Ontario water levels.
4. Education: Increase understanding of the need to expect and prepare for fluctuations in levels and flows in this era of increasingly changing climate. Encourage resiliency as a best practice.
5. Consultation: Consistently seek out, consider and respond to the views and concerns of all interested parties, elected officials and stakeholders through two-way communications, where applicable.

Board Members and Secretaries provided a number of interviews with a wide variety of news agencies in the US and Canada throughout the reporting period. Interviews were provided to print, radio and TV agencies, and generally focused on what outflow management strategies the Board was implementing and the water supply conditions and water levels observed throughout the system. Some of the agencies that conducted interviews with Board Associates were: Spectrum News, North County Public Radio, WHAM TV in Rochester, the Palladium Times, and the Lockport Journal, the Brockville Recorder & Times and the Cornwall Standard-Freeholder.

In addition to the media engagement, Board members, IAG members, Secretaries, Regulation Representatives and other support staff were very busy with personal engagement. Dozens of email replies were sent to concerned individuals through the Board's webpage contact form.

A professional videographer from US Army Corps of Engineers Headquarters is leading the production of eight short, informative videos on topics related to the Board's operations that will be featured on the Board's website in the near future.