

ONE HUNDRED AND NINETEENTH PROGRESS REPORT
to the
INTERNATIONAL JOINT COMMISSION
by the
INTERNATIONAL ST. LAWRENCE RIVER BOARD OF CONTROL
Covering the Period
SEPTEMBER 20, 2012 THROUGH MARCH 21, 2013



MARCH 21, 2013

EXECUTIVE SUMMARY

REGULATION STRATEGY AND RESULTS

The total water supplies were below average each month of the six-month reporting period, except for January and February. The supplies received were within the range of those used in the design of the regulation plan, Plan 1958-D.

Lake Ontario levels began the reporting period about 23 cm (9.4 in) below average, and were at their seasonal low of 74.24 m (243.57 ft) from November 30 to December 8. Levels fluctuated well below average until mid January, before rising to near average by early February. At the end of the reporting period the water level was at 74.59 m (244.72 ft) which, with no accumulated deviations, is the plan-specified level. Water levels on Lake Ontario and in the St. Lawrence River were maintained within the criteria specified in the 1956 Supplementary Orders of Approval. Water levels at the Port of Montreal set a record low in September (1967 – 2012 period of record).

The Board's general regulation strategy during the first half of the reporting period was to overdischarge as needed to maintain sufficient navigation levels on Lac St. Louis. Thereafter, underdischarges restored the water to Lake Ontario. The Board then released outflows in accordance with the regulation plan, while providing for short-term deviations to meet critical needs and assist in ice formation. The Board adjusted outflows to assist in boat haulout in Lake Saint-Louis in October and for ice management purposes in the international section of the river in February. By the end of January an ice cover had formed in the Beauharnois Canal.

COMMUNICATION ACTIVITIES

The Board did not hold a public teleconference during the reporting period. The last teleconference was on September 18, 2012, and the next one will be March 26, 2013, with meeting sites in Rochester and Dorval. The joint Board-Commission Communications Committee continues to provide advice and assistance on a variety of issues. The Board's website is hosted by the IJC. The Board's Facebook page has been operational for about 15 months and continues to grow in "likes". Board Members and staff responded to a number of public inquiries and requests for information, primarily concerns about low water levels.

BOARD ACTIVITIES

The Board met twice in person during the reporting period, and once by teleconference to conduct business, assess conditions, and affirm its outflow strategy. The Regulation Representatives continued to provide the Board with weekly information on conditions in the system, monthly assessments of hydrologic conditions and forecasts, and a risk assessments prior to each meeting and teleconference. The Operations Advisory Group continued its weekly teleconference to apprise the Regulation Representatives of operational requirements and constraints. The Gauging Committee performed their annual inspection of the water level gauges and flow computations from October 11 to 24, 2012.

COVER PHOTO: Shore ice and evaporation during a cold morning in late January 2013 on the St. Lawrence River in Cornwall, Ontario (photo credit: J. Bruxer, Environment Canada)

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1 HYDROLOGICAL CONDITIONS

1.1 Lake Ontario Basin - Net Basin Supply

The local net basin supplies (NBS) to Lake Ontario were above average each month of the six-month reporting period, except for September and November. The six-month average NBS would be expected to be exceeded 41 % of the time. Monthly NBS values for the reporting period are provided in Table 1.

1.2 Precipitation

Monthly precipitation amounts for the Lake Ontario basin are provided in Table 2. Precipitation was above average each month of the reporting period except for November (much below average) and January (slightly below average). The total amount of precipitation in the six-month reporting period was 478 mm (18.8 in), which was 107 % of average and has been exceeded 30 % of the time. Total precipitation for the entire Great Lakes basin for the six-month period was 372 mm (14.6 in), which was 95 % of average and has been exceeded 63 % of the time.

1.3 Snow-pack on the Lake Ontario Basin

Much of the snow accumulation on the Lake Ontario basin in December and January melted during thaws in January. With the passage of several cold fronts in February and early March snowfall was again received. The snowpack at the end of the reporting period was reported to be slightly below average.

1.4 Supply from Lake Erie

The inflows to Lake Ontario from Lake Erie during the reporting period are provided in Table 1. With Lake Erie's level well below average during the reporting period, its flow to Lake Ontario was also below average. The six-month average outflow would be expected to be exceeded 74 % of the time.

1.5 Lake Ontario – Net Total Supply

The monthly net total supplies (NTS) to the lake 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 2011 and the supplies for this reporting period. Also shown, for comparison purposes, are the monthly NTS for 2011 and 2012. The horizontal bars above and below the curves on the graph are the long-term monthly net total supplies maxima and minima. The six-month NTS values for the past ten years are provided in Table 3 for comparison purposes. The monthly NTS values were below average each month of the reporting period, except for January and February. Overall, the total supply was 95 % of average during this reporting period and has been exceeded 64 % of the time.

1.6 Ottawa River Basin

Ottawa River outflows (as shown in Figure 2) started the reporting period near the record low of September, rising above normal in November. Outflows continued to fluctuate around average through January, then

approached record highs for the first week of February, before returning to near normal values. Snow pack on the Ottawa River basin in early March was generally above average.

2 REGULATION OF FLOWS & LEVELS

2.1 Board's Regulation Strategies and Resulting Actions

In order to be responsive to conditions and the needs of interests, the Board assessed conditions via one conference call and two meetings to review conditions in the Great Lakes-St. Lawrence River system and develop outflow strategies. The strategies for the reporting period, and their rationale, were posted on the Board's Website. In summary, the Board strategy was to release outflows in accordance with the regulation plan, while providing for short-term deviations to meet critical needs. During the first half of the reporting period, the Board released flows above those specified by the regulation plan in order to maintain sufficient depths for navigation at Lac St. Louis. This water was restored by early January. The Board strategy was then to release flows in accordance with the regulation plan, while providing for critical needs and ice management. Figure 3 shows the Lake Ontario outflows during the reporting period, and Figure 4 shows the Lake Ontario actual, weekly computed Plan 1958-D and preproject conditions levels during the reporting period.

2.2 Deviations from Regulation Plan 1958-D

Table 4 summarizes the Board's deviations during the reporting period. On September 15, there were 4.7 cm (1.9 in) accumulated deviations on Lake Ontario. Outflows were above the Plan 1958-D specified rate from the beginning of the reporting period until October 19, and again from November 26 to December 4, to maintain sufficient depths for navigation at Lac St. Louis. Some of this water was restored with flow less than the Plan 1958-D specified rate from October 20 to November 23; the balance was restored from December 5 to January 11. This completed restoration of Lake Ontario to its Plan-prescribed level. Several small flow reductions were made in February to assist in managing critical ice conditions in the upper St. Lawrence River. This water was restored by March 1, bringing Lake Ontario again back to its plan-specified level. Plan 1958-D specified outflows were released the remainder of the reporting period, thus there were no deviations at the end of the reporting period.

At the Board's March 21 meeting, it was decided to store water on Lake Ontario should the level at Pte. Claire rise to within 30 cm (1 ft) of the flood alert level. Up to 5 cm storage was authorized for this purpose. The Board recognized that additional storage might be required should the Ottawa River freshet cause the level at Pte. Claire to rise to the flood alert level. The disposition of the stored water will be discussed at the April Board meeting. At that time, the need for retaining the water for possibly supplementing flow in the late summer and early autumn will be determined. The Board also noted that completion of this action could assist in fish spawning in the wetlands and increase levels for recreation boating on Lake Ontario and the upper St. Lawrence River.

2.3 Ice Management

Ice booms were placed in the international section of the St. Lawrence River by the Power Entities, beginning on November 17. Following passage of the last commercial vessel, the "John B. Aird", on December 29, the last booms that cross the navigation waterway were closed on December 31.

Ice cover formation first began in the Beauharnois Canal on January 2, but by January 14 the cover had melted due to mild weather. Ice once again began to form January 20 and was essentially complete on January 25. With unusually warm weather occurring in late February and early March, the ice cover began to thaw and, as of March 21, about 4 km (2.5 mi) of ice remained on the Beauharnois Canal.

Ice began forming on Lake St. Lawrence on January 24. Ice formation progressed slowly upstream to approximately Morrisburg, but variable weather patterns precluded the formation of a stable ice cover in the International Section of the river this winter. Outflows had to be reduced below Plan flow from February 9 to 14 to help alleviate concerns resulting from a strong winter storm experienced February 8 and 9 that caused heavy ice accumulation in the Ogden Channel upstream of Morrisburg and ice bridging at Iroquois Dam. Once conditions had stabilized, flows were increased to above Plan during the period from February 15 to 28 to pay back the accumulated deviations. Likewise, with the warm weather occurring in late February and early March, the ice cover on the St. Lawrence River began to melt. The date of last ice in the international section of the river was March 11.

The opening of the Montreal-Lake Ontario section of the Seaway will be March 22. This was preceded by removal of the A and G Booms (the two booms that cross the navigation channel) on March 19. The remaining booms are still in the process of removal.

2.4 Iroquois Dam Operations

It was not necessary to manipulate the gates at Iroquois Dam for ice formation this winter. Ice prematurely bridged at the Iroquois Dam in February, such that gate movements were unnecessary.

2.5 Results of Regulation

2.5.1 Upstream

Lake Ontario

The effects of Regulation Plan 1958-D and the Board's outflow strategies on the flows of Lake Ontario are shown in Figure 3. For comparison purposes, the daily flows of 2011, 2012 and 2013 to the end of the reporting period are shown.

A comparison of Lake Ontario's actual monthly levels and outflows to those that would have been obtained under pre-project conditions is given in Table 5. This shows that Lake Ontario was about 12 to 17 cm (0.4 to 0.55 ft.) lower during the reporting period than it would have been without regulation. Figure 4 shows the actual, per-project, and Plan levels for Lake Ontario. A comparison of the daily levels to long-term average, and 2011 and 2012 levels is shown in Figure 5.

At the start of the reporting period, the level was 24 cm (9.4 in) below long-term average. The level was well below average from the beginning of the reporting period to mid-December. Levels then rose slowly due to increased inflows from Lake Erie, rainfall and melting of accumulated snow. The slow rise has continued and

as of the end of this reporting period levels were at 74.59 m (244.72 ft). This level is 9 cm (3.5 in) below the March long-term average.

Lake St. Lawrence

The water level of Lake St. Lawrence (shown in Figure 6) started the reporting period near average, and was generally above average until the end of the reporting period.

2.5.2 Downstream

Lake St. Francis

The daily water level at Summerstown on Lake St. Francis (shown in Figure 7) was generally below average with near-record lows in much of January. The level was above the Seaway Low Alert level of 46.58 m (152.8 ft) throughout the reporting period, except for two days in November.

Lake St. Louis

During the reporting period, the level of Lake St. Louis was maintained near the Seaway low alert level of 20.60 m (67.6 ft) until mid-December (see Table 4). Levels generally improved thereafter, but daily water levels (shown on Figure 8) were below average (based on the period 1960 through 2011) throughout the reporting period. The Board provided additional water the weekend of October 13-14 to assist in boat haulout.

Port of Montreal

The daily water levels at the Port of Montreal (shown in Figure 9) were below average throughout the reporting period, with September setting a new monthly record low (1967 – 2012 period of record). Levels were below chart datum from the start of the reporting period to mid-October, were above datum for about a month, then below datum for about a month (to mid-December), and were above datum the remainder of the reporting period. The Port level remained below average at the end of the reporting period.

3 BOARD ACTIVITIES

3.1 Board Meetings & Conference Calls

The Board continued to carry out the Orders of Approval for regulating flows 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 Regulation Representatives provided the Board with weekly regulation data, monthly reviews of the hydrological conditions, periodic risk analyses using water level outlooks, and, advised the Board on regulation strategy options and their potential impacts on water levels and interests throughout the system. 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 Board continued to assess conditions in the basin and adjust or affirm its regulation strategy accordingly. During the reporting period, the Board held meetings on October 15 in Ottawa, Ontario, and March 21 in Chicago, Illinois. The Board also conducted a conference call on December 12 to assess regulation strategy. For the months in between the meetings and teleconference, the Board received assessments of conditions and periodic risk analyses as required from the Regulation Representatives. Table 6 provides a list of Board Members in attendance at these meetings and on the teleconference.

3.2 Meetings with the Public and Input from the Public

The Board did not hold a public teleconference during the reporting period. The last was on September 18, 2012, and the next is scheduled for March 26, 2013, with meeting sites in Rochester and Dorval

During the reporting period, the Communications Committee, individual Board Members and the Secretaries were actively engaged in outreach, information exchange and liaison with stakeholders throughout the Lake Ontario-St. Lawrence River system. Board Members and staff responded to numerous inquiries and requests for interviews from the media and the general public concerning water level conditions and the effectiveness of the Board's strategies. Many of these were from Lake Ontario riparians concerned about the below average lake levels and potential for low levels in the upcoming boating season. Board Member Tom Brown met with and gave a presentation to the Cape Vincent Lions Club on November 12, 2012 and met with officers of the International Water Levels Coalition.

4 COMMUNICATIONS COMMITTEE REPORT

The Board continued to work with the International Joint Commission through the Communications Committee, to seek opportunities to improve communications with the public. Work is being done, despite limited resources, by Board staff to enhance the Board web site. The Canadian Section of the Board was provided communications assistance from Environment Canada. The Corps of Engineers provided a part-time communications specialist during the reporting period.

The Committee, with the assistance of the Board and Regulation Representatives, developed and posted responses to questions frequently asked of the Board (FAQs). The Board added several questions and answers as a result of the recent low water levels. The Committee examined the possibility of using webinars to supplement or replace some Board meetings with the public. The Board discussed this at its March meeting and will discuss it further with the Commission at the Appearances. The Board's Facebook page has been operational for about 15 months and continues to build its number of "likes". This is a convenient means of rapidly informing the public on changing water levels conditions and outflows, as well as providing a forum for dialogue among the stakeholders. The Board's website and Facebook pages are hosted by the IJC.

Other communication activities during the reporting period included:

- Preparation of media releases: The Board issued media releases after each Board regulation decision, to provide the public with recent information on water level conditions and regulation strategies with their rationale;

- Operation of the Board's 1-800 numbers: The Board continued to post weekly updates of levels and flows (In the U.S., the number is 1-800-833-6390, and in Canada the numbers are 1-800-215-8794 (English) and 1-800-215-9173 (French));
- Operation of the Board's Web Site on the internet <http://www.ijc.org/boards/islrbc/> The Site includes:
 - Weekly updates on water levels and outflows;
 - General information about the Board, its activities and its structure;
 - Announcements about the Board's outflow strategies and "related media" releases.
 - Posting of the Board's meeting minutes and teleconference summaries.
 - The Board's next annual meeting with the public and public teleconferences.
- Operation of the Board's Facebook page, with updates at least weekly, and numerous responses to comments and questions

The Board's Regulation Representatives sent weekly updates, on Lake Ontario regulation and water level and outflow conditions, to over 300 e-mail subscribers. Stakeholders are encouraged to subscribe to this free service.

5 RIVER GAUGING ITEMS

5.1 Gauging Committee Annual Report

The 73rd (2011) report was accepted by the Board at its March 21 meeting.

5.2 Raisin River

The Raisin River Diversion was used on September 20 and 21 to augment flows in the headwaters of the South Branch of the Raisin River. The diverted outflow was about 0.1 m³/s (3.5 cfs).

5.3 Water Level Gauges

The Gauging Committee performed an annual inspection of the water level gauging network on the St. Lawrence River from October 9 to 23, 2012. The 2012 data audit is being prepared and will be forwarded to NOAA and Environment Canada shortly.

5.4 Turbine Upgrades

Unit 20 of the Moses plant was taken out for upgrade on April 9, 2012 and returned to service on December 17, 2012. A performance test was conducted on Unit 19 from November 13 - 29, 2012. The consultant's report was being finalized at the end of the reporting period prior to being submitted to the Board.

6 ST. LAWRENCE SEAWAY REPORT

Navigation ceased in the Montreal-Lake Ontario Section with the passage of the last upbound commercial vessel, the "John B. Aird", through Iroquois Lock on December 29.

The Seaway navigation season will open on March 22 at 8:00 am.

7 HYDROPOWER PEAKING AND PONDING

By letter dated 13 October 1983, the Commission authorized Ontario Power Generation and the New York Power Authority to continue to carry out peaking and ponding operations at the St. Lawrence Project. The conditions governing peaking and ponding operations are specified in Addendum No. 3 to the Operational Guides for Regulation Plan 1958-D. On November 28, 2011, the IJC renewed the approval for a 5-year period to November 30, 2016.

Peaking operations were conducted throughout the reporting period. No ponding operations were conducted.

8 ICE SLUICES

On May 11, 2011, the New York Power Authority and Ontario Power Generation (Power Entities) sent a letter to the IJC to request removing from service the six ice gates at the Moses-Saunders Power Dam which are not used. The IJC provided a preliminary response on July 27 and requested the Board's review and recommendation. The Board's technical staff analyzed the consultant's report upon which the request was based. The Board discussed the report, and its staff input, and informed the IJC by letter of September 15, 2011 that it recommended the removal of the six ice gates. The Board foresees no operational problems with removing the ice sluices from service. There will be no significant changes to the operation of the project. Experience over the past 50 years has shown that the use of Iroquois Dam, placement of ice booms, and other measures, are sufficient to handle ice formation issues. The IJC provided an update to the Power Entities on November 28, 2012 noting that it was reviewing how Appendix A, part (c) of the 1952 Order of Approval could be amended.

9 BOARD AND COMMITTEE MEMBERSHIP CHANGES

In November, Board Members Tom Brown and Joan Frain had their appointments renewed through the end of 2013, or until the Commission makes changes pursuant to the Lake Ontario St. Lawrence River decision process (whichever comes first). There remains a vacancy on the Canadian Section of the Board.

Table 1
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⁾
Sep 12	5330	188	83	90	-30	-1	62	5300	187	85	88
Oct 12	5180	183	86	89	380	13	33	5560	196	70	92
Nov 12	5380	190	78	92	-50	-2	88	5330	188	88	83
Dec 12	5300	187	81	90	1150	41	30	6450	228	55	97
Jan 13	5630	199	52	99	1380	49	24	7010	248	36	105
Feb 13	5490	194	55	98	1350	48	28	6840	242	42	103

⁽¹⁾ Based on period of record 1900-2012

Table 2
PROVISIONAL PRECIPITATION OVER GREAT LAKES AND LAKE ONTARIO BASINS

Month	Great Lakes Basin			Lake Ontario Basin		
	mm (inches) ⁽¹⁾	% of LTA ⁽²⁾	Exceed. Prob. ⁽³⁾	mm (inches) ⁽¹⁾	% of LTA ⁽²⁾	Exceed. Prob. ⁽³⁾
Sep 12	67 (2.64)	77	81	97 (3.82)	117	30
Oct 12	104 (4.09)	141	11	111 (4.37)	141	14
Nov 12	29 (1.14)	42	98	26 (1.02)	33	99
Dec 12	55 (2.17)	92	62	107 (4.21)	143	8
Jan 13	71 (2.80)	127	18	66 (2.60)	96	54
Feb 13	46 (1.81)	102	45	71 (2.80)	118	28

⁽¹⁾ Provisional

⁽²⁾ Based on period of record 1900-2012

⁽³⁾ Based on period of record 1900-2008

**Table 3
AVERAGE AND RECORDED SIX-MONTH NET TOTAL SUPPLIES (Sep-Feb)**

	Long-Term Average ⁽¹⁾		Recorded			Recorded Below (-) or Above Average (+)		
	(m ³ /s)	(tcfs)	(m ³ /s)	(tcfs)	Exceed. Prob. ⁽¹⁾	(m ³ /s)	(tcfs)	Percent
Sep 03 - Feb 04	6430	227	6620	234	40	190	7	3
Sep 04 – Feb 05	6430	227	7240	256	18	810	29	13
Sep 05 – Feb 06	6430	227	7000	247	25	570	20	9
Sep 06 – Feb 07	6430	227	7590	268	10	1160	41	18
Sep 07 – Feb 08	6430	227	6540	231	43	110	4	2
Sep 08 - Feb 09	6430	227	6910	244	28	480	17	7
Sep 09 - Feb 10	6430	227	6500	230	45	70	2	1
Sep 10 – Feb 11	6430	227	6270	221	56	-160	-6	-2
Sep 11 – Feb 12	6430	227	7540	266	10	1110	39	17
Sep 12 - Feb 13	6430	227	6080	215	64	-350	-12	-5

⁽¹⁾ Based on period of record 1900-2012

**Table 4
Summary of Outflow Deviations from Regulation Plan 1958-D Flow**

Date 2012-2013	Deviation (cms)	Dev. (cms-wks)	Acc. Dev. rounded (cms-wks)	Cum. Effect on Lake Ont. rounded (cm)	Reason for Deviation
Sep 20			1530	-4.7	
Sep 20-21	180 for 48 hrs	51	1580	-4.9	To maintain Lake St. Louis levels above 20.6 m
Sep 22-28	120 for 168 hrs	120	1700	-5.3	To maintain Lake St. Louis levels above 20.6 m
Sep 29-Oct 2	130 for 84 hrs	65	1760	-5.5	To maintain Lake St. Louis levels above 20.6 m
Oct 12	350 for 12 hrs	25	1790	-5.5	To aid Lake St. Lawrence boaters with haul-out
Oct 13	360 for 12 hrs	26			To aid Lake St. Lawrence boaters with haul-out
Oct 13-19	40 for 156 hrs	37	1850	-5.7	To maintain Lake St. Louis levels above 20.6 m
Oct 20	-60 for 14 hrs	-5			To restore water
Oct 20-22	-260 for 48 hrs	-74			To restore water
Oct 22-26	-160 for 82 hrs	-78			To restore water
Oct 26	-260 for 24 hrs	-37	1650	-5.1	To restore water
Oct 27-31	-230 for 120 hrs	-164			To restore water
Nov 1	-330 for 16 hrs	-31			To restore water
Nov 1-2	-430 for 32 hrs	-82	1370	-4.2	To restore water
Nov 3-9	-430 for 168 hrs	-430	940	-2.9	To restore water
Nov 10-14	-430 for 120 hrs	-307			To restore water
Nov 15-16	-280 for 48 hrs	-80	550	-1.7	To restore water
Nov 17-23	-180 for 162 hrs	-174			To restore water
Nov 23	20 for 6 hrs	1	380	-1.2	Port of Montreal request
Nov 24	60 for 6 hrs	2			Port of Montreal request
Nov 24-25	-40 for 42 hrs	-10			To restore water
Nov 26-27	110 for 36 hrs	24			To maintain Lake St. Louis levels above 20.6 m
Nov 27-29	260 for 60 hrs	93			To maintain Lake St. Louis levels above 20.6 m
Nov 30	160 for 24 hrs	23	510	-1.6	To maintain Lake St. Louis levels above 20.6 m
Dec 1	180 for 13 hrs	14			To maintain Lake St. Louis levels above 20.6 m
Dec 1-4	80 for 83 hrs	40			To maintain Lake St. Louis levels above 20.6 m
Dec 5	-20 for 24 hrs	-3			To restore water
Dec 6	-110 for 24 hrs	-16	510	-1.6	To restore water
Dec 7	-270 for 24 hrs	-39			To restore water
Dec 8-12	-250 for 112 hrs	-167			To restore water
Dec 12-13	-350 for 32 hrs	-67			To restore water
Dec 14	-250 for 24 hrs	-36	240	-0.7	To restore water
Dec 15-16	-200 for 38 hrs	-45			To restore water
Dec 16-17	100 for 22 hrs	13			To maintain Lake St. Louis levels above 20.6 m
Dec 17-18	-100 for 26 hrs	-15			To restore water
Dec 18-21	-300 for 82 hrs	-146	50	-0.2	To restore water
Dec 22-23	-300 for 28 hrs	-50			To restore water
Dec 24-29	10 for 140 hrs	8	10	-0.03	Unintentional – minor operational deviation
Jan 5-11	-10 for 168 hrs	-10	0	0	To restore water
Feb 9-13	-200 for 70 hrs	-83			Ice Bridged upstream of Morrisburg
Feb 12-13	-150 for 20 hrs	-18			Rough ice conditions-unstable ice cover
Feb 13-14	-50 for 24 hrs	-7			Rough ice conditions-unstable ice cover
Feb 14-15	50 for 36 hrs	11	-100	0.3	Reduce stored water
Feb 16-19	-40 for 86 hrs	-20			Ice Bridge at Iroquois Dam, Ogden Chan. obstruction
Feb 22	50 for 24 hrs	7	-110	0.3	Reduce stored water
Feb 23-25	90 for 72 hrs	39			Reduce stored water
Feb 26-Mar 1	120 for 96 hrs	69	0	0	Reduce stored water

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Table 5
LAKE ONTARIO RECORDED AND PRE-PROJECT LEVELS AND OUTFLOWS

Month	Lake Ontario Monthly Mean Water Levels (IGLD 1985) - meters (feet)			Lake Ontario Monthly Mean Outflow m ³ /s (tcs)		
	Recorded	Pre-project	Diff.	Recorded	Pre-project	Diff.
Sep 12	74.50 (244.42)	74.67 (244.98)	-0.17 (-0.56)	6490 (229)	6430 (227)	60 (2)
Oct 12	74.34 (243.89)	74.51 (244.45)	-0.17 (-0.56)	6220 (220)	6140 (217)	80 (3)
Nov 12	74.29 (243.73)	74.46 (244.29)	-0.17 (-0.56)	5890 (208)	6030 (213)	-140 (-5)
Dec 12	74.28 (243.70)	74.43 (244.19)	-0.15 (-0.49)	5860 (207)	5980 (211)	-120 (-4)
Jan 13	74.38 (244.03)	74.51 (244.45)	-0.13 (-0.42)	5950 (210)	6120 (216)	-170 (-6)
Feb 13	74.52 (244.49)	74.63 (244.85)	-0.11 (-0.36)	6220 (220)	6080 (215)	140 (5)

Table 6
Attendance at Meetings and Teleconferences

Board Member	Country	Oct. 15	Dec 12 teleconf	Mar 21
BG M. Burcham ¹ COL J. Peterson ²	U.S.	X X	- X	X
Mr. P. Morel ³	Can.	X	X	X
Mr. J. Bernier	U.S.	X	X	X
Mr. T. Brown	U.S.	X	X	X
Mr. A. Carpentier	Can.	X	X	X
Ms. J. Frain	Can.	X	X	X
Dr. T. Hullar	U.S.	X	X	X
Dr. F. Sciremammano, Jr.	U.S.	X	X	X
Mr. P. Yeomans	Can.	X	X	

Notes: 1. U.S. Co-Chair; 2. Alt. U.S. Co-Chair ; 3. Canadian Co-Chair

Location of Meetings:
October 18, 2012, Ottawa
March 21, 2013, Chicago

Figure 1: Monthly Net Total Supplies to Lake Ontario

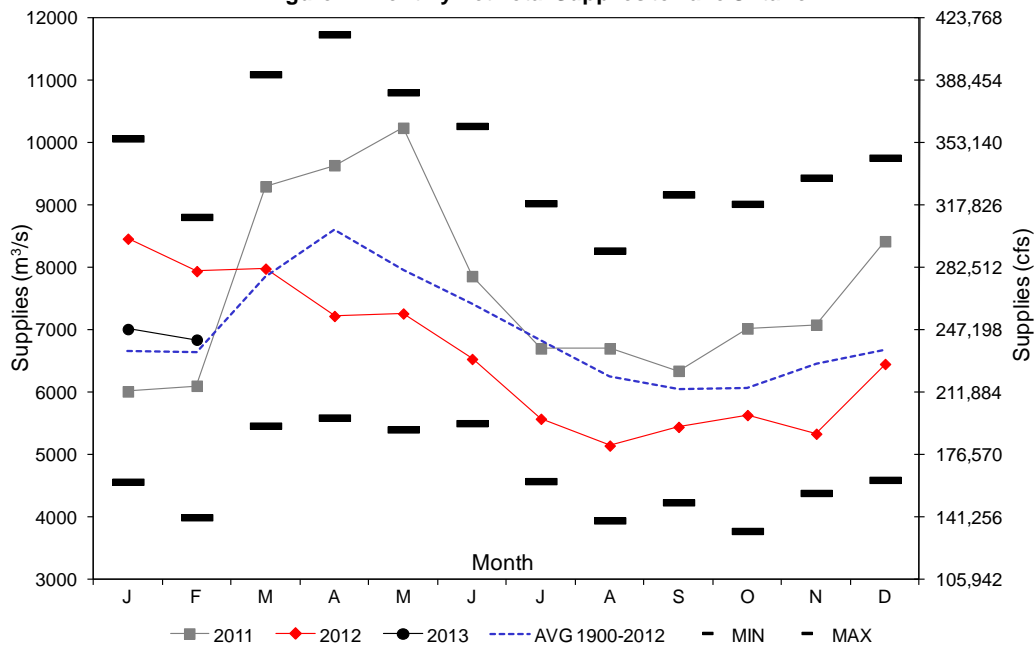


Figure 2: Daily Ottawa River Flow @ Carillon

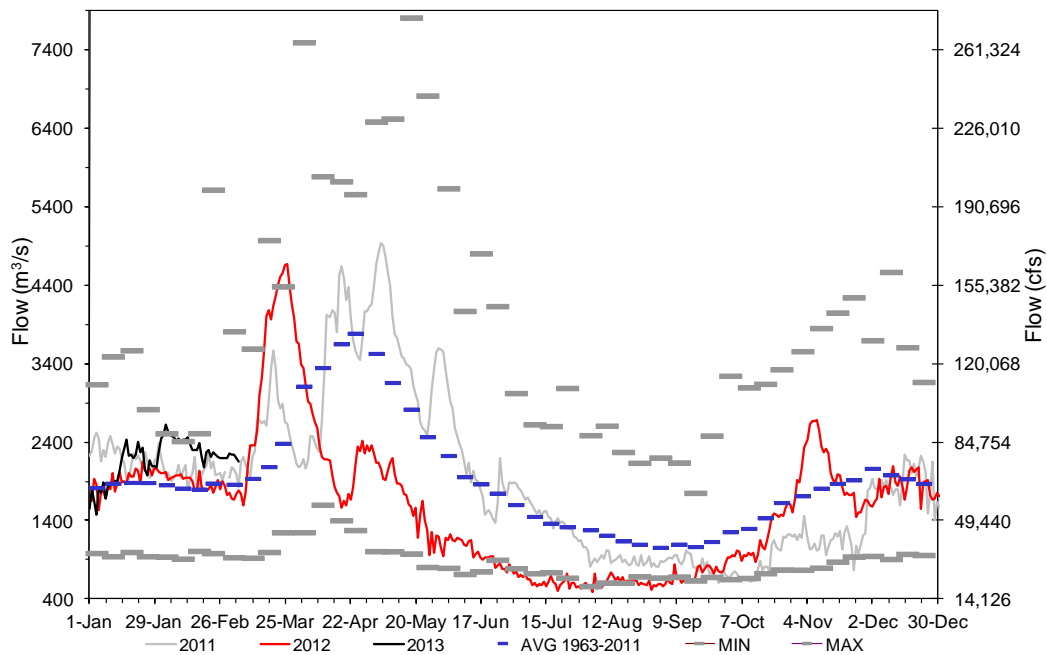


Figure 3: Lake Ontario Daily Outflows

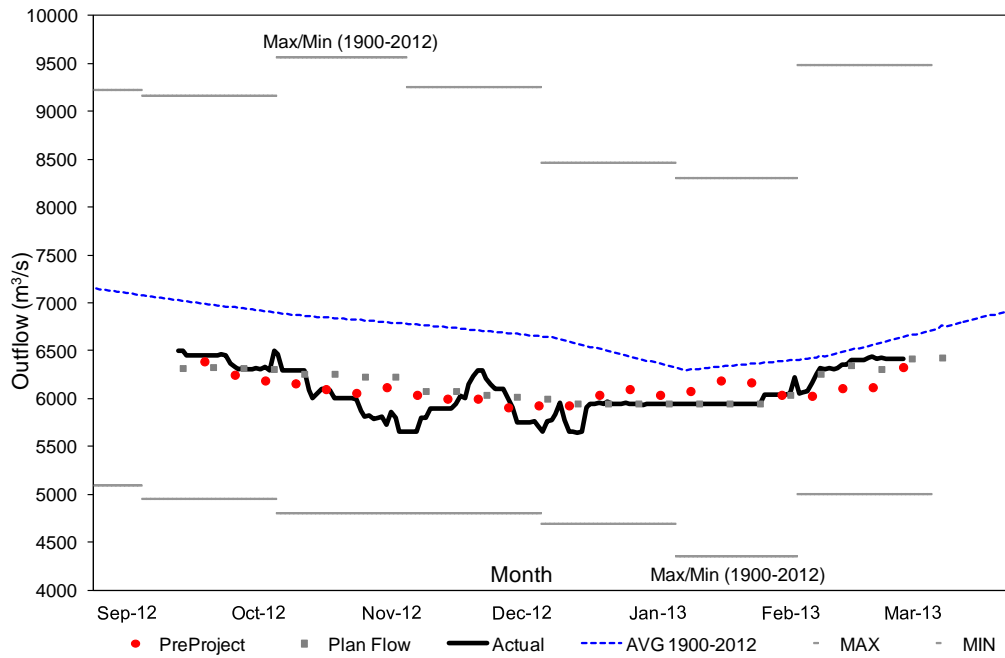


Figure 4: Lake Ontario Actual, Preproject & Plan Levels

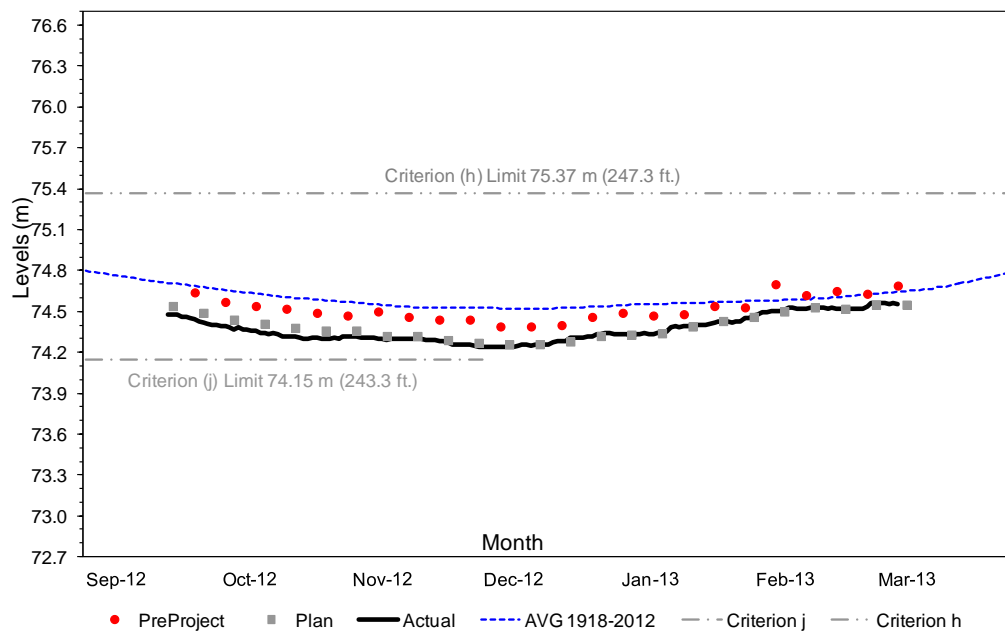


Figure 5: Daily Lake Ontario Water Levels

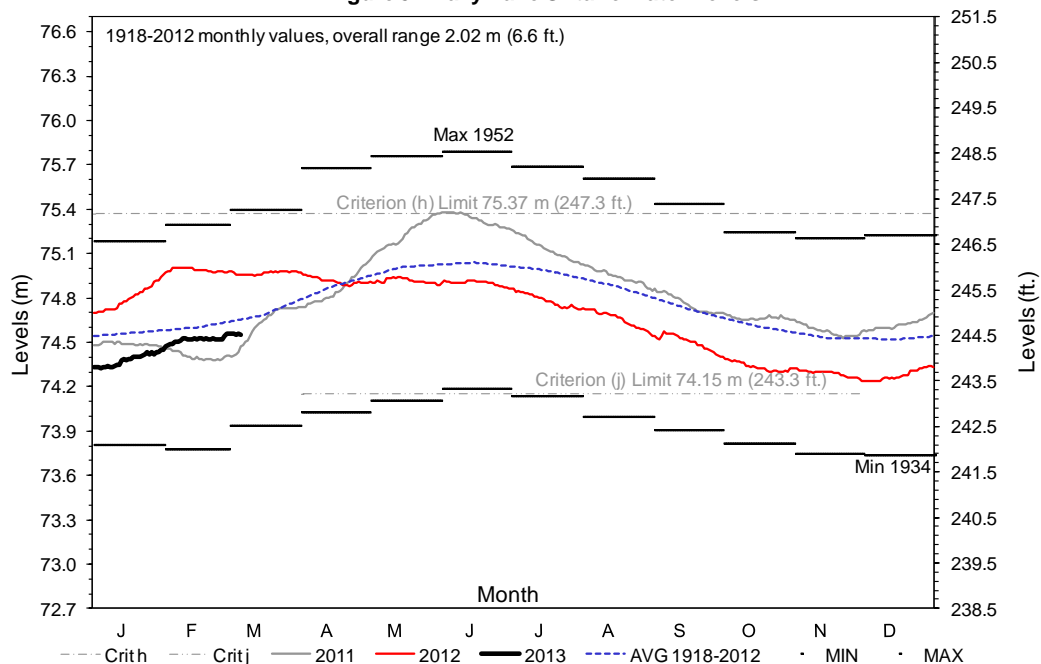


Figure 6: Daily Lake St. Lawrence Levels @ Long Sault Dam

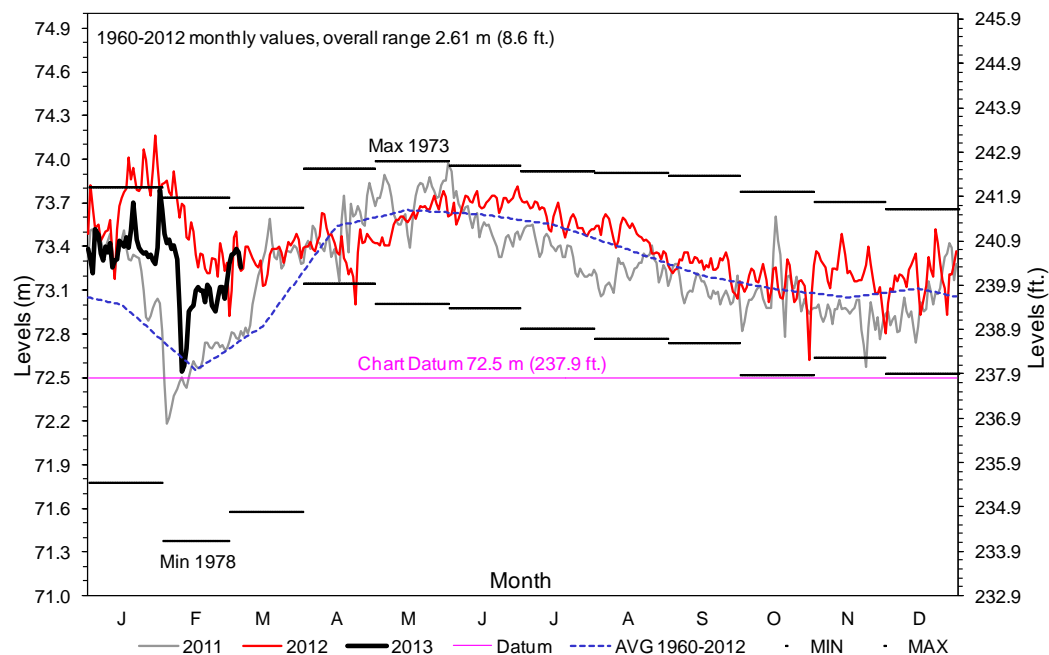


Figure 7: Daily Lake St. Francis Levels @ Summerstown

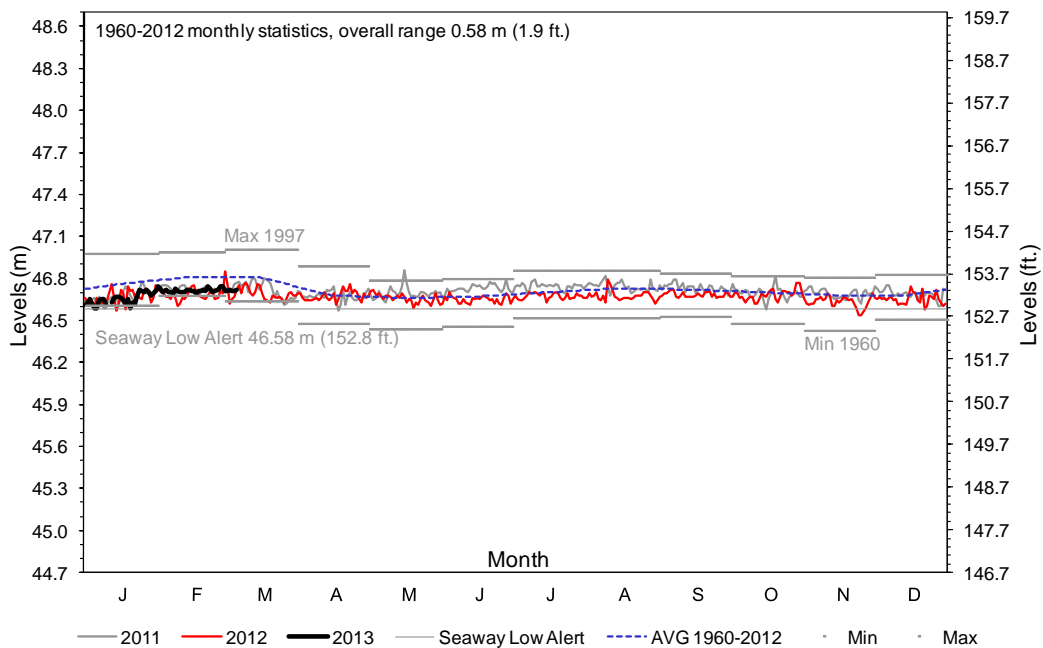


Figure 8: Daily Lake St. Louis Levels @ Pointe-Claire

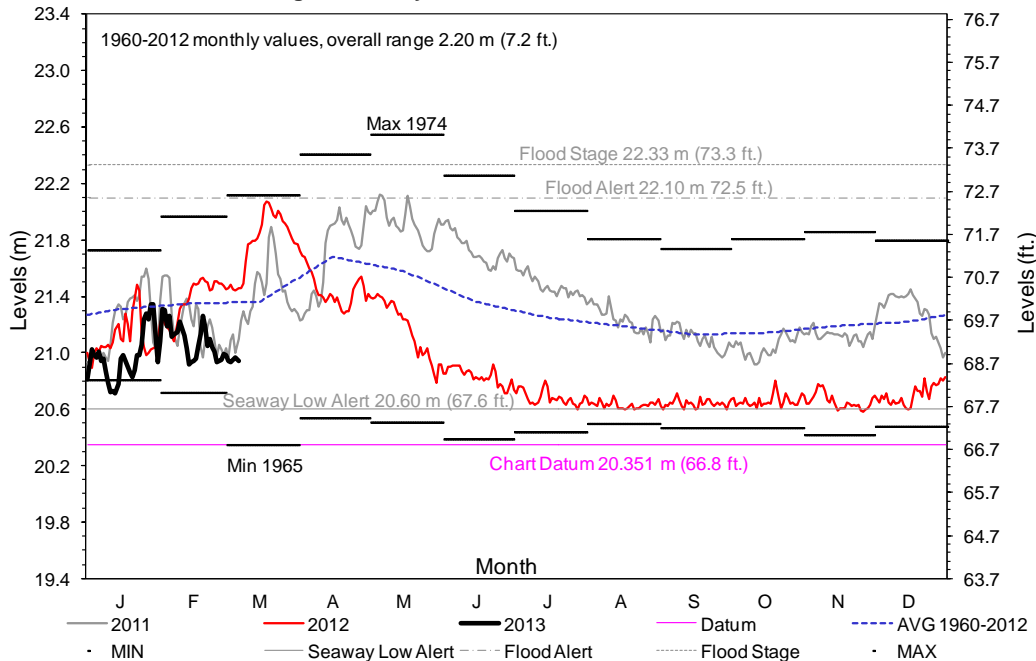


Figure 9: Daily Port of Montreal Levels @ Jetty #1

