

**ONE HUNDRED AND TWENTY FIRST PROGRESS REPORT**  
**to the**  
**INTERNATIONAL JOINT COMMISSION**  
**by the**  
**INTERNATIONAL ST. LAWRENCE RIVER BOARD OF CONTROL**  
**Covering the Period**  
**SEPTEMBER 19, 2013 THROUGH MARCH 26, 2014**



**MARCH 26, 2014**

## EXECUTIVE SUMMARY

### REGULATION STRATEGY AND RESULTS

The total water supplies were above average three months of the reporting period. The supplies received over the 6-month period were about 1% above average, within the range of those used in the design of the regulation plan, Plan 1958-D.

Lake Ontario levels began the reporting period 1 cm (0.4 in) above long-term average. The levels were near average throughout the reporting period, falling slowly from above average to below average from mid-January to the end of March. At the end of the reporting period the water level was at 74.54 m (244.55 ft), which is 3 mm (0.1 in) below 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.

The Board's general regulation strategy during the reporting period was to eliminate the water stored earlier in 2013. Additional deviations were incurred when the Board adjusted outflows for ice management purposes in the international section of the river in December and January. By early January an ice cover had formed in the Beauharnois Canal. Restoration of all deviations was completed on February 21. The Board then released outflows in accordance with the regulation plan until March 20, when small over-discharges were used to assist vessels entering Montreal Harbour. The Board's strategy is to provide for short-term deviations to meet critical needs and assist in ice management.

### COMMUNICATION ACTIVITIES

The Board held a public teleconference with in-person meeting sites at Oswego and Cornwall on September 24, 2013. A webinar and teleconference were held on March 18, 2014; no face-to-face meetings were held at that time. 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 over two years 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 twice by teleconference. 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.

**COVER PHOTO: M. André Carpentier receiving a certificate of appreciation for his many years of service to the Board from Commissioner Bouchard of the International Joint Commission.**

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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 for each month of the reporting period, except for September and February. The six-month average NBS has been exceeded 36 % of the time. Monthly NBS values for the reporting period are provided in Table 1.

### **1.2 Precipitation**

Monthly precipitation amounts for the Great Lakes and Lake Ontario basins are provided in Table 2. Lake Ontario's basin precipitation was below average in each month of the reporting period except for October (much above average). The total amount of precipitation in the six-month reporting period was 378 mm (14.9 in), which was 85 % of average and has been exceeded 84 % of the time. Total precipitation for the entire Great Lakes basin for the six-month period was 353 mm (13.9 in), which was 91 % of average and has been exceeded 74 % of the time.

### **1.3 Snow-pack on the Lake Ontario Basin**

Much of the snow accumulation on the Lake Ontario basin during the winter was retained until late March. At the peak of the snow pack, the snow water equivalent was estimated to be above average. The snowpack at the end of the reporting period was reported to be above average, with portions of the basin having no snow cover.

### **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 near average during the reporting period, its flow to Lake Ontario was also near average. The six-month average outflow was about 1% less than the long-term average.

### **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 2013 and the supplies for this reporting period. Also shown, for comparison purposes, are the monthly NTS for 2012 and 2013. 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 above average for three months of the reporting period. Overall, the total supply was 101 % of average during this reporting period and has been exceeded 45 % of the time.

### **1.6 Ottawa River Basin**

Ottawa River outflows (as shown in Figure 2) started the reporting period near the September average, rising above normal in November. Outflows then continued to fluctuate around average through the end of February, then increased in the middle of March in response to a brief warm spell that caused some snowmelt. Snow pack on the Ottawa River basin at the end of the reporting period was generally near average.

## **2 REGULATION OF FLOWS & LEVELS**

### **2.1 Board's Regulation Strategies and Resulting Actions**

In order to be responsive to conditions and to the needs of interests, the Board assessed conditions via one conference call and two meetings to develop outflow strategies for the Lake Ontario-St. Lawrence system. The resulting strategies, and their rationale, were posted on the Board's Website. In summary, the Board strategy was to release the water stored on Lake Ontario during the previous reporting period. This restoration to Plan level began in early November but was briefly halted during the ice formation process. Restoration resumed in mid-January and was completed February 21. Flows thereafter were generally in accordance with Plan 1958-D, while providing for short-term deviations to meet critical needs and for ice management. Small overdischarges were released on March 20, 21, and 22 to assist vessels entering the Port of Montreal. 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 19, there were 2.7 cm (1.1 in) of accumulated deviations on Lake Ontario. Outflows were above the Plan 1958-D specified rate from November 2 to December 16, to reduce the stored water. Deviations for ice formation were incurred from December 17 to January 10. Discharges were then set to reduce the stored water from January 11 to January 31. Additional deviations for ice management were incurred through February 14. The restoration was completed on February 21, bringing Lake Ontario again back to its plan-specified level. Plan 1958-D specified outflows were released until March 20. Small overdischarges were needed on March 20, 21, and 22 to assist vessels entering Montreal Harbour. At the end of the reporting period the level of Lake Ontario was 3 mm (0.1 in) lower than specified by the regulation plan.

At the Board's March 26 meeting, it was decided to continue releasing flows in accordance with the regulation plan, while allowing for under- or over-discharges that may be necessary to address unforeseen critical conditions in the river. The Board recognized that some storage might be required should the Ottawa River freshet cause the level at Pte. Claire to rise to the flood alert level. The extra water released for the March 20-22 assistance will be retored as opportunities arise. If this does not occur before the Ottawa River freshet the Board expects the restoration to be finished during the freshet.

### **2.3 Ice Management**

Ice booms were placed in the international section of the St. Lawrence River by the Power Entities, beginning on November 13. The last booms that cross the navigation waterway were closed on January 8 and January 15 under difficult conditions. The last commercial vessel through the Seaway, the "Orsula", passed downbound on January 1.

Ice cover formation first began in the Beauharnois Canal on December 15 and was completed January 1. With unusually cold weather occurring in February and early March, the ice cover was heavier than usual. As of March 26, the river and Beauharnois Canal were almost entirely ice covered.

Ice began forming on Lake St. Lawrence on December 25. Severely cold weather, with strong winds, produced some frazil ice in the river near Cardinal. Reduced outflows helped preclude the formation of an ice

blockage. Thereafter, a stable ice cover formed in the International Section of the river. Less than Plan-specified outflows were released during the first half of February to cause a smooth transition to higher flows; this was done to avoid stressing the ice cover. With the continued cold weather in March, the ice cover on the St. Lawrence River was more extensive and thicker than usual at the end of the reporting period.

The opening of the Montreal-Lake Ontario section of the Seaway is scheduled for March 31. This was preceded by the partial opening of the A and G Booms (the two booms that cross the navigation channel) on March 26. The remainder of the A and G Booms, as well as the remaining booms, will be removed later.

## **2.4 Iroquois Dam Operations**

It was not necessary to manipulate the gates at Iroquois Dam for ice formation this winter.

## **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 levels of Lake Ontario are shown in Figure 5. For comparison purposes, the daily levels of 2012, 2013 and 2014 to the end of the reporting period are shown. At the start of the reporting period, the level was 1 cm (0.4 in) above long-term average. The levels were near average throughout the reporting period, falling slowly from above average to below average from mid-January to the end of March. As of the end of this reporting period, the level was at 74.54 m (244.55 ft). This level is 18 cm (7.1 in) below the March long-term average. A comparison of the daily levels to long-term average, and 2012 and 2013 levels is also shown in Figure 5.

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 6 to 25 cm (2 to 10 in.) lower during the reporting period than it would have been without regulation.

#### Lake St. Lawrence

The water level of Lake St. Lawrence (shown in Figure 6) started the reporting period near average, rose to well-above average for brief times in October and December, fell well below average in February, and ended the reporting period below average.

### **2.5.2 Downstream**

#### Lake St. Francis

The daily water level at Summerstown on Lake St. Francis (shown in Figure 7) was generally very near average throughout the reporting period. The level was above the Seaway Low Alert level of 46.58 m (152.8 ft) throughout the reporting period, except for one day in October.

#### Lake St. Louis

During the reporting period, the daily level of Lake St. Louis was well above the Seaway low alert level of 20.60 m (67.6 ft). Levels generally fluctuated within about 25 cm of average throughout the reporting period (Figure 8).

## Port of Montreal

The daily water levels at the Port of Montreal (shown in Figure 9) were generally below average throughout the reporting period. Water levels from the beginning of the reporting period to the end of October were slightly above chart datum. Thereafter, levels rose to, and generally fluctuated near, the long-term average. The levels rose briefly to well-above average in early January, but dropped and stayed below long-term average from late January to 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 December 10 in Ottawa, Ontario, and March 26 in Detroit, Michigan. The Board also conducted two conference calls: on October 23 to discuss regulation strategy and on March 12 to prepare for the March 18 webinar/teleconference. For each month the Board received assessments of conditions and risks from the Regulation Representatives. Table 6 provides a list of Board Members in attendance at these meetings and on the teleconferences.

#### **3.2 Meetings with the Public and Input from the Public**

The Board held a public teleconference with in-person meeting sites at Oswego and Cornwall on September 24, 2013. 13 members of the public participated by phone and 10 participated in person. The Board heard concerns about low levels on Lakes Ontario and Michigan-Huron, and response to major precipitation events, such as Hurricane Sandy. The next event was a webinar and teleconference (only) on March 18, 2014, without a face-to-face component. About 18 members of the public directly participated in the March event. In addition to its usual presentation on basin conditions, the Board demonstrated one of its learning modules. The primary issues identified by the public was a concern about shore damage caused by vessel wakes when there is ice in the river, and the potential for low levels. The Board relayed the vessel wakes concern to the Seaway.

The Board has developed and posted 7 learning modules to its web page to help educate the public. The modules are:

Module 1: Overview

Module 2: Lake Ontario-Upper St. Lawrence River Levels and Outflows

Module 3: Peaking & Ponding

Module 4: Iroquois Dam

Module 5: Ice Formation



Module 6: Wind Effects on the upper St. Lawrence River

Module 7: Lower St. Lawrence River Impacts

The Board's website is hosted by the IJC. The Board reorganized its web page to make it easier for the public to use. The Board's Facebook page has been operational for over two years and continues to grow in "likes".

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.

#### **4 COMMUNICATIONS COMMITTEE REPORT**

The joint Board-Commission Communications Committee continues to provide advice and assistance on a variety of issues and seeks opportunities to improve communications with the public. Work is being done primarily 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 a few additional responses to questions frequently asked of the Board (FAQs). The Committee led the development of using webinars to supplement or replace some face-to-face Board meetings with the public. The first use of this was on March 18, as discussed previously. The Board's Facebook page has been operational for over two years and continues to build its number of "likes", now at over 200. 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 Facebook page is hosted by the IJC.

Other communication activities include:

- Preparation of media releases: The Board issues 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/en/\\_islrbc](http://www.ijc.org/en/_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.
  - Learning modules.
- 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 2012 report was accepted by the Board at its March 26 meeting.

### **5.2 Raisin River**

The Raisin River Diversion was not used in the reporting period to augment flows in the headwaters of the South Branch of the Raisin River.

### **5.3 Water Level Gauges**

The Gauging Committee did not perform an annual inspection of the water level gauging network on the St. Lawrence River during the Fall of 2013, due to the shutdown of much of the U.S. Government and a lack of funding to support the inspections on the part of the National Oceanic and Atmospheric Administration. The next inspection is planned for late this spring.

### **5.4 Turbine Upgrades**

No turbine units were upgraded during this reporting period. Previously (December 17, 2012), New York Power Authority (NYPA) returned to service its eighth and final unit upgraded to an Alstom turbine (formerly Allis-Chalmers (AC) Unit 20). Interim rating tables NYPA-HPPE-D4H-2007-0001 Rev 00, dated July 29, 2007, currently apply to Units 19, 20, 23, 24, 27, 28, 31 and 32. The July 29, 2007 interim rating tables were established from Alstom model test results in 2005. In November 2008, current meter tests were performed on Unit 27 which confirmed the interim rating tables issued July 29, 2007 were satisfactory. In November 2012, additional performance (current meter) tests were performed on Unit 19, furthering the process of ultimately issuing final rating tables for the eight upgraded Allis-Chalmers units. NYPA's consultant's report is under review by Ontario Power Generation (OPG). OPG has asked for, and are awaiting, additional information from the testing consultant. Once the review by OPG is satisfactorily completed, final rating tables will be submitted by NYPA to the Board for their approval, and subsequent implementation.

## **6 ST. LAWRENCE SEAWAY REPORT**

For the Lake Ontario-St. Lawrence River system, commercial navigation ceased by the beginning of the new year 2014. The last upbound ship passed through the St. Lawrence system on December 31 and the last downbound vessel (the "Orsula") passed through St. Lambert Lock on January 1.

The Seaway navigation season is scheduled to open on March 31 at 8:00 am. The Welland Canal is scheduled to open March 28.

## **7 HYDROPOWER PEAKING AND PONDING**

By letter dated October 13, 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.

## **9 BOARD MEMBERSHIP CHANGES**

There remains a vacancy on the Canadian Section of the Board.

Respectfully submitted,

**MEMBERS FOR THE UNITED STATES**

**MEMBERS FOR CANADA**

\_\_\_\_\_  
**BG M. W. BURCHAM, CHAIR**

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**P. MOREL, CHAIR**

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**J. BERNIER**

\_\_\_\_\_  
**P. CLAVET**

\_\_\_\_\_  
**T. BROWN**

\_\_\_\_\_  
**J. FRAIN**

\_\_\_\_\_  
**T. HULLAR**

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**P. YEOMANS**

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**F. SCIREMAMMANO, Jr.**

**Table 1**  
**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 13	5670	200	66	95	-50	-2	64	5620	198	71	93
Oct 13	5920	209	45	101	500	18	25	6420	227	32	106
Nov 13	5970	211	42	102	850	30	32	6820	241	34	106
Dec 13	5850	207	49	100	1230	43	27	7080	250	34	106
Jan 14	5530	195	58	97	1090	38	39	6620	234	49	99
Feb 14	5520	195	54	99	870	31	60	6390	226	59	96
6-month Average	5740	203	53	99	750	26	36	6490	229	45	101

<sup>(1)</sup> Based on period of record 1900-2013

**Table 2**  
**PROVISIONAL PRECIPITATION OVER GREAT LAKES AND LAKE ONTARIO BASINS**

Month	Great Lakes Basin			Lake Ontario Basin		
	mm (inches) <sup>(1)</sup>	% of LTA <sup>(2)</sup>	Exceed. Prob. <sup>(3)</sup>	mm (inches) <sup>(1)</sup>	% of LTA <sup>(2)</sup>	Exceed. Prob. <sup>(3)</sup>
Sep 13	71 (2.80)	83	74	73 (2.87)	88	60
Oct 13	103 (4.06)	139	12	115 (4.53)	144	12
Nov 13	66 (2.60)	96	56	58 (2.28)	72	80
Dec 13	46 (1.81)	77	82	50 (1.97)	67	88
Jan 14	37 (1.46)	66	88	41 (1.61)	59	92
Feb 14	30 (1.18)	67	86	41 (1.61)	68	83

<sup>(1)</sup> Provisional

<sup>(2)</sup> Based on period of record 1900-2013

<sup>(3)</sup> Based on period of record 1900-2010

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

	Long-Term Average <sup>(1)</sup>		Recorded			Recorded Below (-) or Above Average (+)		
	(m <sup>3</sup> /s)	(tcfs)	(m <sup>3</sup> /s)	(tcfs)	Exceed.	(m <sup>3</sup> /s)	(tcfs)	Percent
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	6130	216	62	-300	-11	-5
Sep 13 - Feb 14	6430	227	6490	229	45	60	2	1

(1) Based on period of record 1900-2013

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

Date 2013-2014	Deviation (cms)	Dev. (cms-wks)	Acc.Dev. rounded (cms-wks)	Cum. Effect on Lake Ont. rounded (cm)	Reason for Deviation
Sep 19			<b>-870</b>	<b>2.7</b>	
Nov 2-8	150 for 168 hrs	<b>150</b>			Reduce stored water
Nov 2-8	10 for 168 hrs	<b>10</b>	<b>-710</b>	<b>2.2</b>	Unintentional – minor operational deviation
Nov 9-15	150 for 168 hrs	<b>150</b>	<b>-560</b>	<b>1.7</b>	Reduce stored water
Nov 16-22	150 for 168 hrs	<b>150</b>	<b>-410</b>	<b>1.3</b>	Reduce stored water
Nov 23-29	150 for 168 hrs	<b>150</b>	<b>-260</b>	<b>0.8</b>	Reduce stored water
Dec 14-16	380 for 72 hrs	<b>163</b>			Reduce stored water/Port of Montreal request
Dec 17-20	-220 for 96 hrs	<b>-126</b>	<b>-220</b>	<b>0.7</b>	Assist in Ice Formation in Beauharnois Canal
Dec 21-27	-180 for 168 hrs	<b>-180</b>	<b>-400</b>	<b>1.2</b>	Assist in Ice Formation in Beauharnois Canal
Dec 28-Jan 3	170 for 168 hrs	<b>170</b>	<b>-230</b>	<b>0.7</b>	Ice Management
Jan 8	-530 for 12 hrs	<b>-38</b>			Assist in Ice Formation in International Reach
Jan 8-9	-1130 for 26 hrs	<b>-175</b>			Assist in Ice Formation in International Reach
Jan 9-10	-730 for 22 hrs	<b>-96</b>			Assist in Ice Formation in International Reach
Jan 10	-330 for 12 hrs	<b>-24</b>	<b>-560</b>	<b>1.7</b>	Assist in Ice Formation in International Reach
Jan 11-13	70 for 60 hrs	<b>25</b>			Reduce stored water
Jan 13-17	200 for 108 hrs	<b>129</b>	<b>-410</b>	<b>1.3</b>	Reduce stored water
Jan 18-24	200 for 168 hrs	<b>200</b>	<b>-210</b>	<b>0.7</b>	Reduce stored water
Jan 25-31	400 for 168 hrs	<b>400</b>	<b>190</b>	<b>-0.6</b>	Reduce stored water/Ice Management (smooth outflow)
Feb 8-9	-190 for 36 hrs	<b>-41</b>			Ice Management (smooth outflows)
Feb 9-10	60 for 24 hrs	<b>9</b>			Port of Montreal request
Feb 10-14	-190 for 108 hrs	<b>-122</b>	<b>40</b>	<b>-0.1</b>	Ice Management (smooth outflows)
Feb 15-21	-40 for 168 hrs	<b>-40</b>	<b>0</b>	<b>0</b>	To restore water

Mar 20	30 for 24 hrs	<b>4</b>			Unintentional – minor operational deviation
Mar 21	300 for 12 hrs	<b>21</b>			Port of Montreal request
Mar 21	30 for 12 hrs	<b>2</b>	<b>30</b>	<b>-0.1</b>	Unintentional – minor operational deviation
Mar 22	600 for 24 hrs	<b>86</b>			Port of Montreal request
Mar 22	-40 for 24 hrs	<b>-6</b>	<b>110</b>	<b>-0.3</b>	Unintentional – minor operational deviation

**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 <sup>3</sup> /s (tcfs)		
	Recorded	Pre-project	Diff.	Recorded	Pre-project	Diff.
Sep 13	74.79 (245.37)	74.85 (245.57)	-0.06 (-0.20)	7330 (259)	6800 (240)	530 (19)
Oct 13	74.64 (244.88)	74.75 (245.24)	-0.11 (-0.36)	6890 (243)	6610 (233)	280 (10)
Nov 13	74.60 (244.75)	74.78 (245.34)	-0.18 (-0.59)	7290 (257)	6650 (235)	640 (23)
Dec 13	74.53 (244.52)	74.78 (245.34)	-0.25 (-0.82)	6720 (237)	6660 (235)	60 (2)
Jan 14	74.64 (244.88)	74.84 (245.54)	-0.20 (-0.66)	6320 (223)	6660 (235)	-340 (-12)
Feb 14	74.61 (244.78)	74.83 (245.50)	-0.22 (-0.72)	6960 (246)	6350 (224)	610 (22)

**Table 6**  
**Attendance at Meetings and Teleconferences**

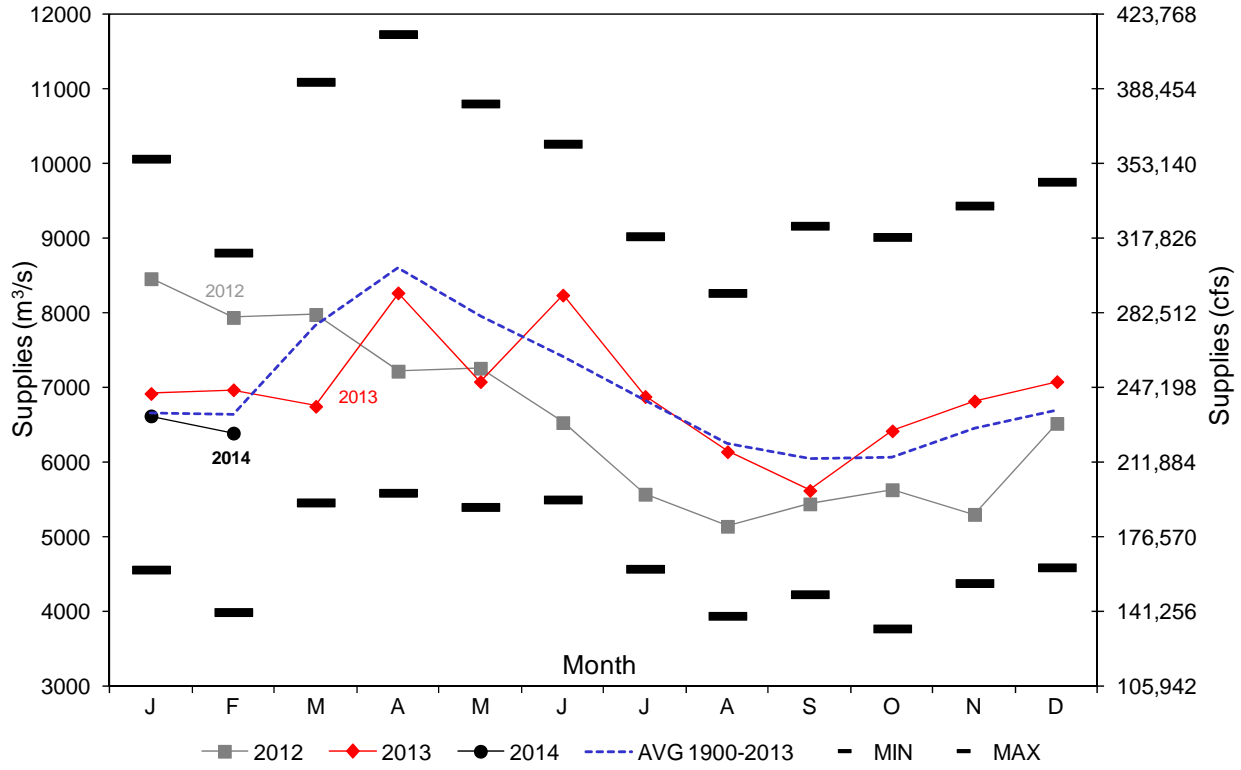
Board Member	Country	Oct 23 teleconf	Dec 10	Mar 12 teleconf	Mar 26
BG M. Burcham <sup>1</sup> COL R. Peterson <sup>2</sup>	U.S.	X	X	- X	- X
Mr. P. Morel <sup>3</sup>	Can.	X	X	X	X
Mr. J. Bernier	U.S.	X	X		X
Mr. T. Brown	U.S.	X	X	X	X
Ms. P. Clavet <sup>4</sup>	Can.	X	X	X	X
Ms. J. Frain	Can.	X	X	X	X
Dr. T. Hullar	U.S.		-	-	*
Dr. F. Sciremammano, Jr.	U.S.	X	X	X	-
Mr. P. Yeomans	Can.	X	X	X	**

Notes: 1. U.S. Co-Chair; 2. Alt. U.S. Co-Chair ; 3. Canadian Co-Chair  
4. M.A. Carpentier acted since January 27 on behalf of Ms. Clavet, recovering from surgery  
\* joined by phone; recovering from knee surgery \*\* joined by phone

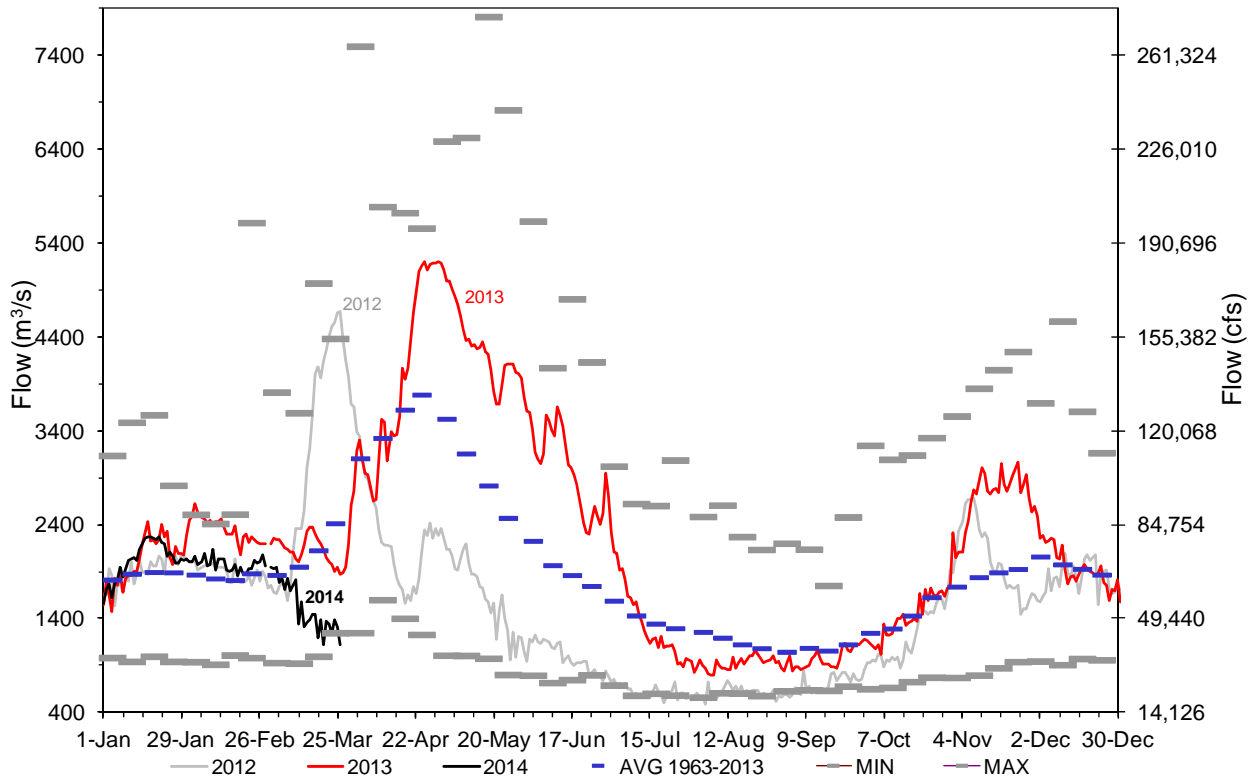
**Location of Meetings:**

December 10, 2013, Ottawa  
March 26, 2014, Detroit

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

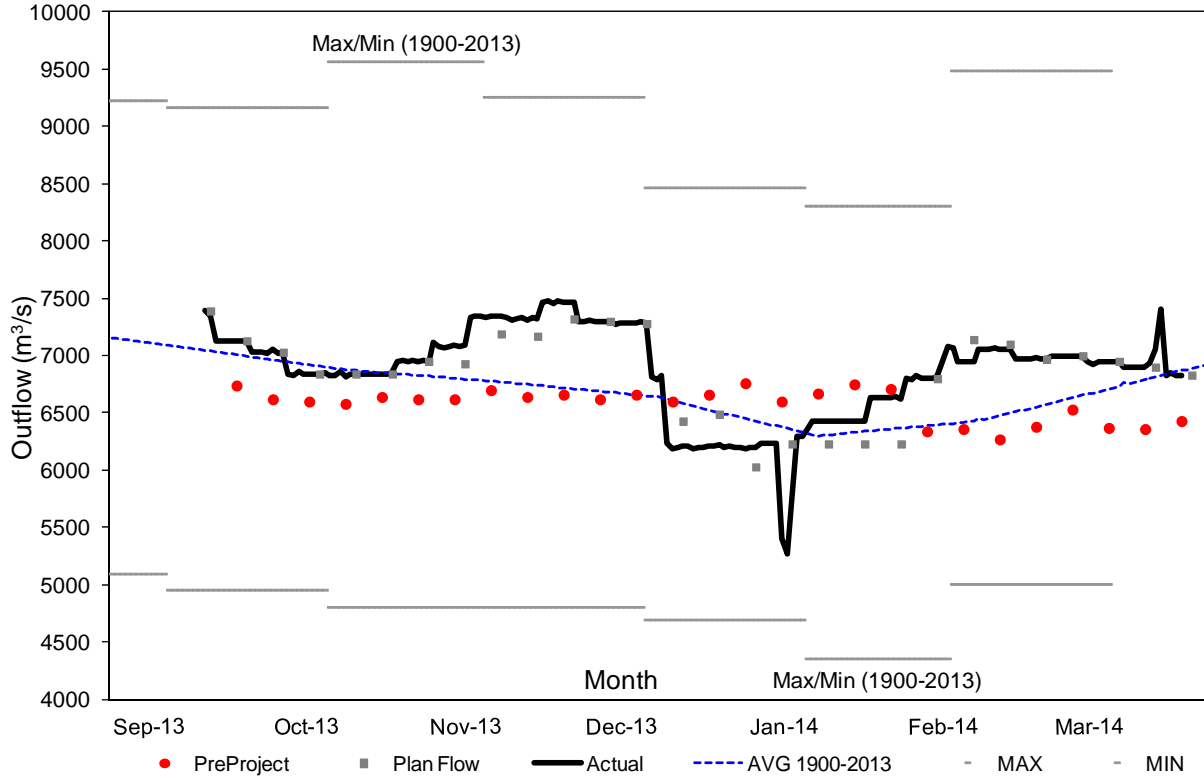


**Figure 2: Daily Ottawa River Flow @ Carillon**

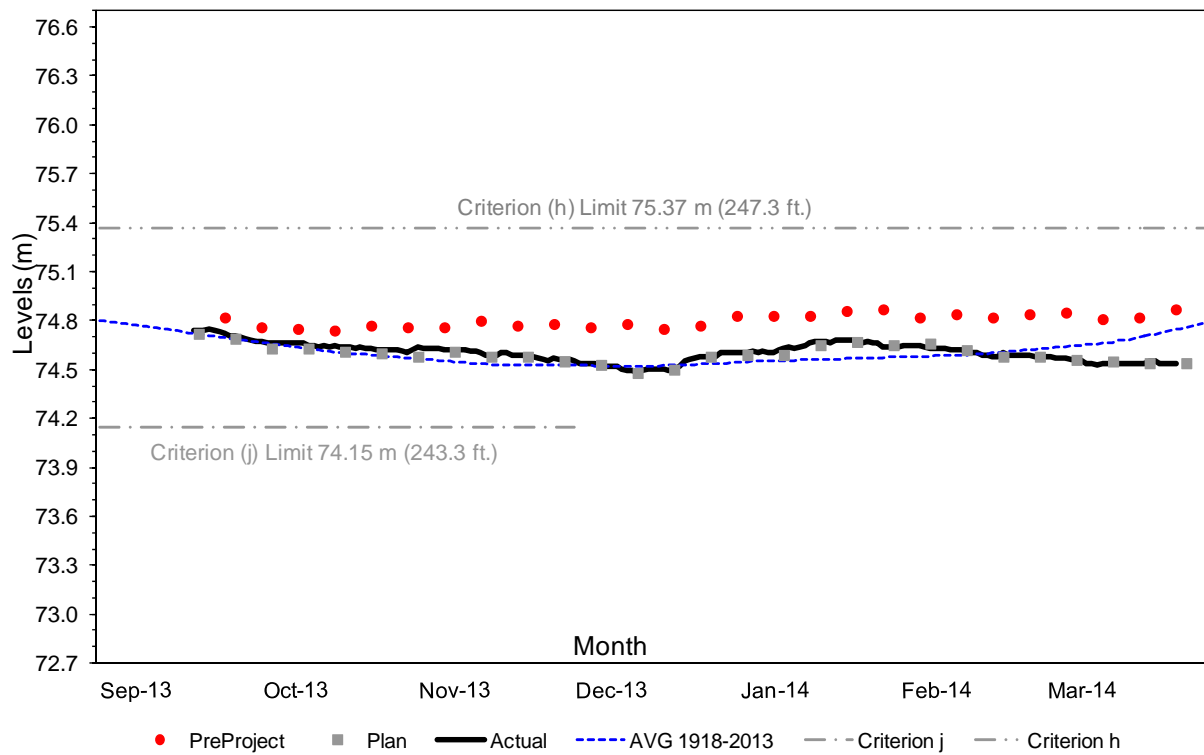




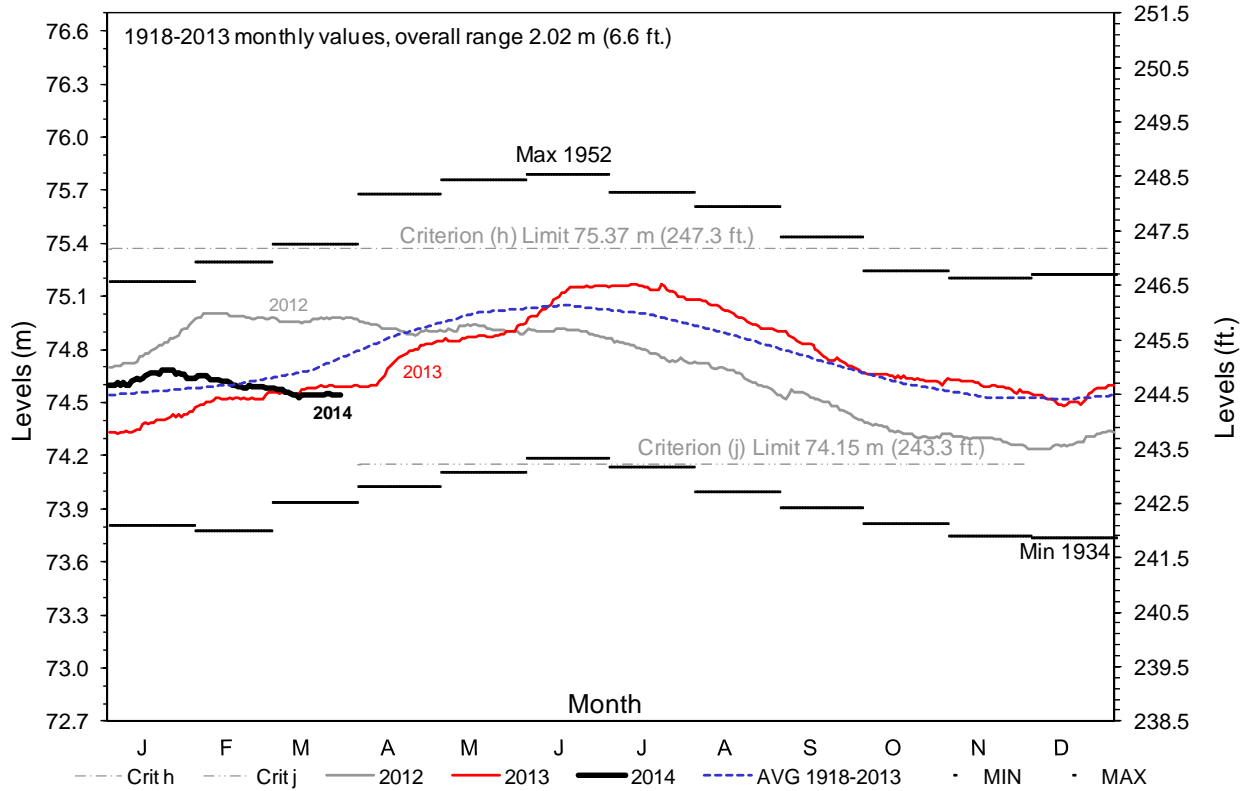
**Figure 3: Lake Ontario Daily Outflows**



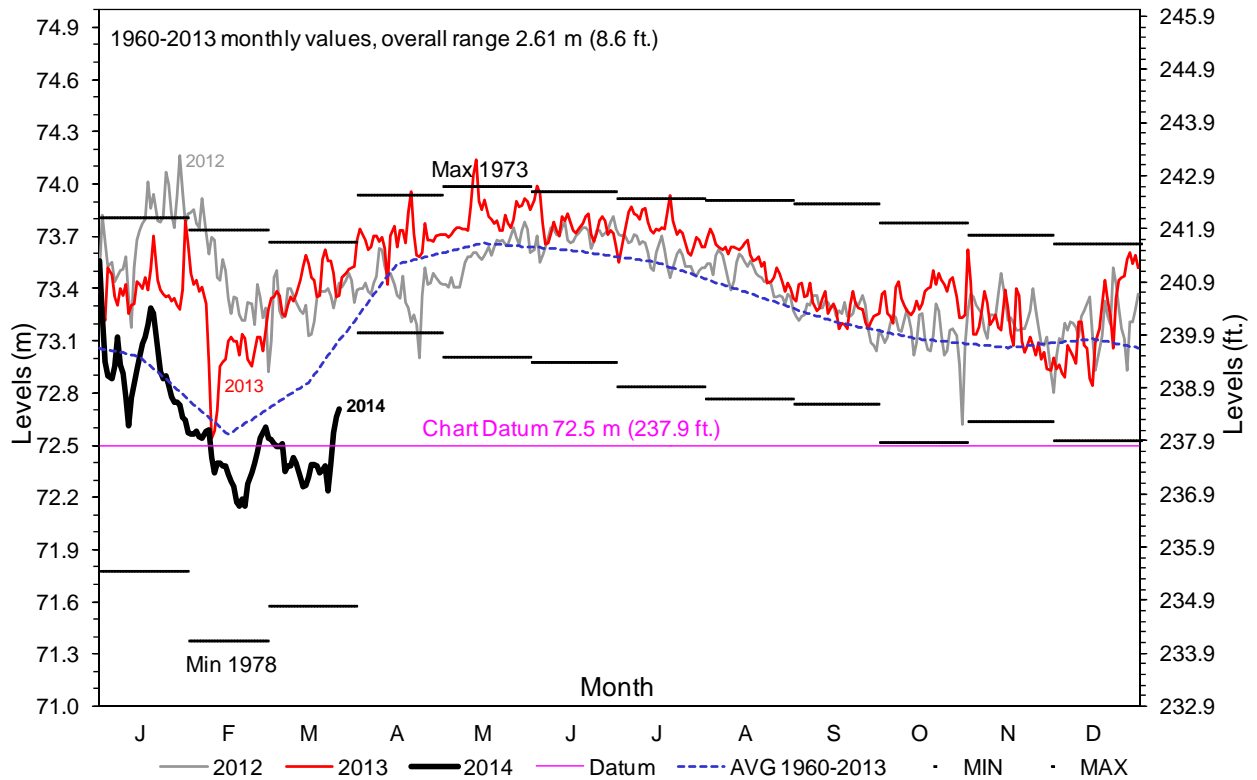
**Figure 4: Lake Ontario Actual, Preproject & Plan Levels**



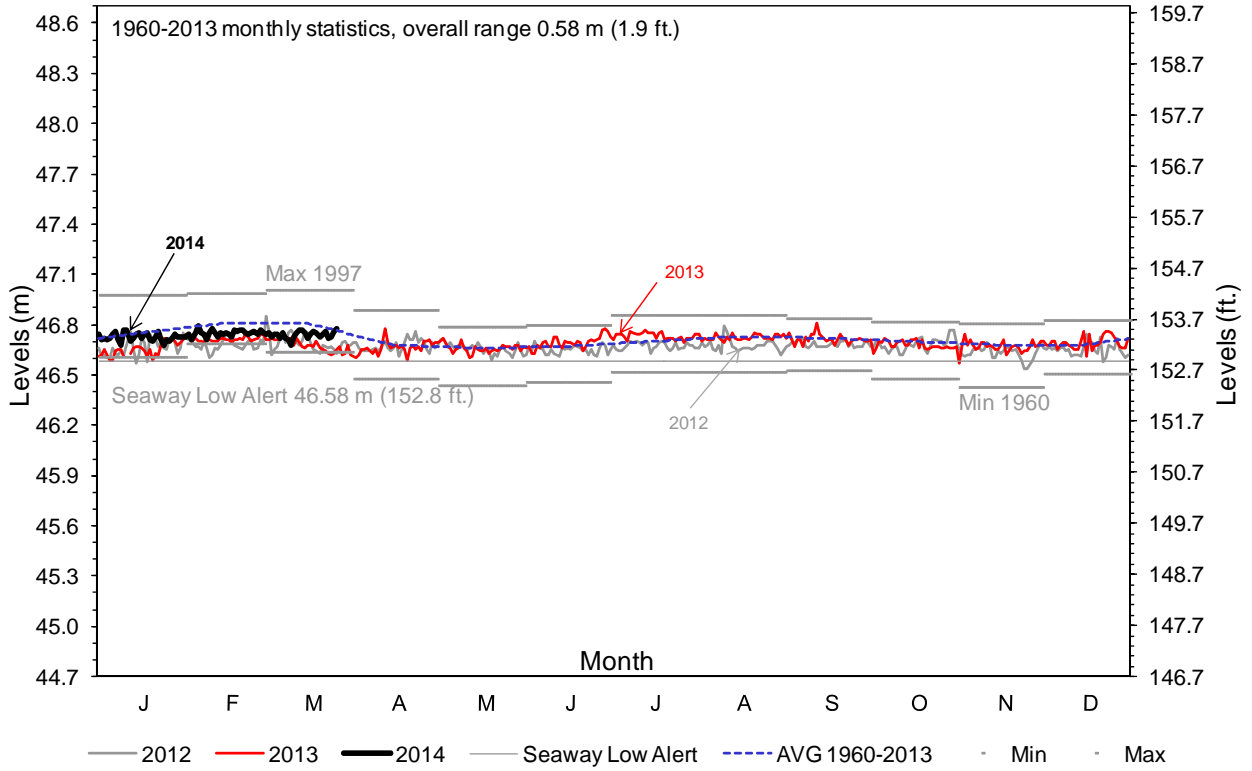
**Figure 5: Daily Lake Ontario Water Levels**



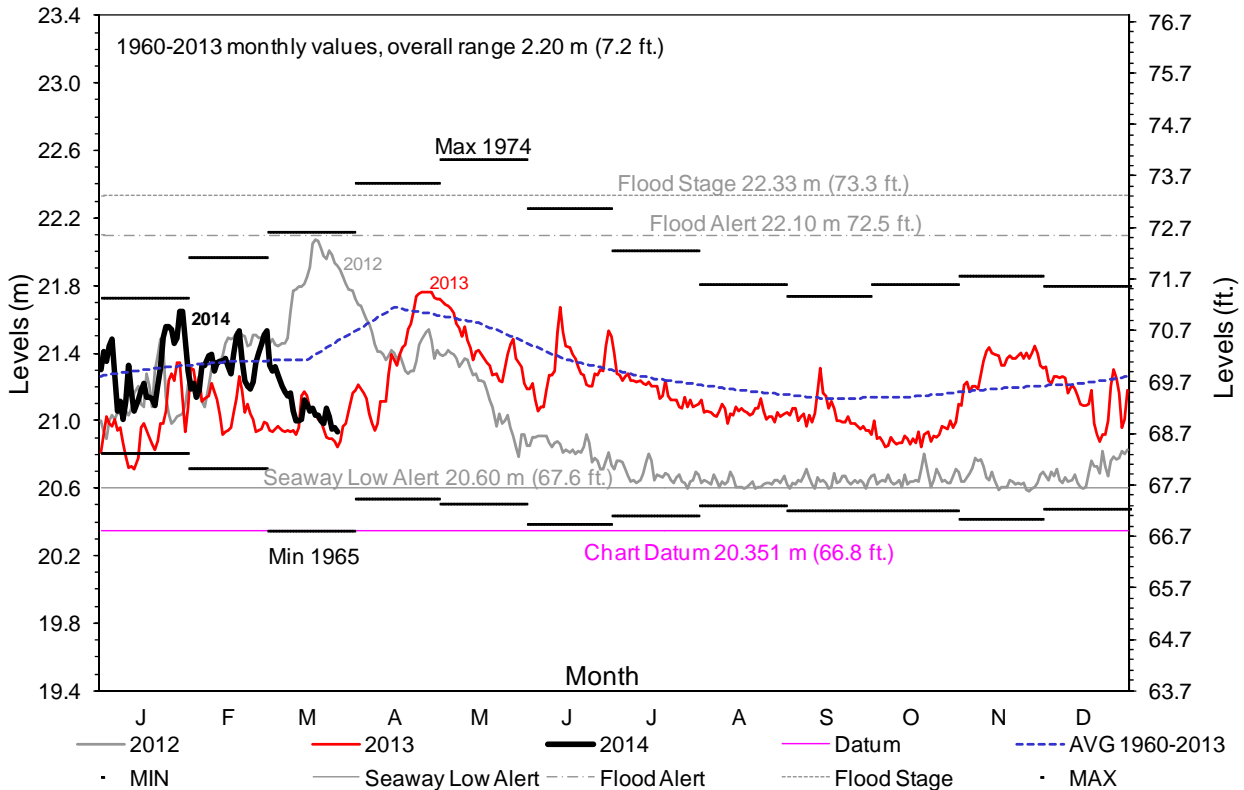
**Figure 6: Daily Lake St. Lawrence Levels @ Long Sault Dam**



**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**

