

ONE HUNDRED AND SIXTH PROGRESS REPORT
to the
INTERNATIONAL JOINT COMMISSION
by the
INTERNATIONAL ST. LAWRENCE RIVER BOARD OF CONTROL
Covering the Period
MARCH 30, 2006 THROUGH SEPTEMBER 27, 2006

SEPTEMBER 27, 2006

EXECUTIVE SUMMARY

REGULATION STRATEGY AND RESULTS

The net total supply of water to Lake Ontario for the March through August 2006 period was 94 percent of average and had an exceedence probability of 69 percent. The monthly net total supplies were below average for all months except July which was near record highs due to well above average precipitation that month. The inflow from Lake Erie remained near-to-below average for the entire period.

Plan 1958-D handled the prevailing conditions effectively and, as a result, the Board remained on Plan flow for the entire period except for two weeks in May when the flow was reduced to moderate the abrupt drop in Plan outflow caused by adjusting from the winter supply indicator adjustment to the normal indicator adjustment and a 28-hour flow increase in August to reduce high levels on Lake St. Lawrence. The May deviation consisted of a week of under-discharge followed by a week of equal compensatory over-discharge. Both deviations were successful in achieving their objectives. Part of the strategy of remaining on Plan flows was to retain a small reserve of water on the Lake (about 4.6 cm (1.8 in.)) to assist interests with critical needs later in the year. In total, the Board deviated from Plan flow about 8 percent of the time during the reporting period, over 90 percent of which was to smooth the outflow transition in the spring. To aid in decision making, the Board continued to analyze the risk of exceeding the criteria of the Orders and other water level indicators developed by the Board through experience.

The level of Lake Ontario had declined gradually over March, from about 20 cm (7.9 in.) above average at the beginning of March to near average by the end of the month, due in part to higher than average outflows prescribed by Plan 1958-D. The levels remained about 15 -18 cm (about 6 – 7 in.) below average for most of May and June then gradually rose again to above average by mid July. The highest level for the season was recorded on August 3-5 at 8 cm (3.1 in.) above average. The level remained slightly above average for the remainder of the reporting period and was 7 cm (2.8 in.) above average on September 25, including the 4.6 cm (1.8 in.) reserve.

High levels on Lake St. Lawrence were a concern during several periods in June and July. The gates of Iroquois Dam were used through much of July to reduce the levels and there was a short term over-discharge on August 3 to reduce a second period of high levels. Levels in the Montreal area were below average throughout the reporting period except for three days in early August when heavy rains caused a temporary rise in the levels. The levels remained well above the Seaway Low Alert and the levels in Montreal Harbour were above chart datum most of the time except for a week at the end of June when daily levels were near or below datum.

The strategy of maintaining a reserve of water on the Lake to assist with critical needs later in the season continued to receive some public support. The Board continues to feel that this strategy should be considered in the future whenever conditions warrant.

BOARD ACTIVITIES

The Board continued to assess conditions in the basin and adjust its regulation strategy monthly through meetings, conference calls or e-mails. During the reporting period, the Board met twice face-to-face and once by teleconference.

The Regulation Representatives continued to provide the Board with weekly information on conditions in the system, monthly assessments of hydrologic conditions, forecasts and risk assessments, prior to each meeting and teleconference. The Operations Advisory Group continued its weekly teleconferences to apprise the Regulation Representatives of operational requirements and constraints. The Board engaged in discussions with the River Gauging Committee and the Power Entities regarding the timeliness of receipt of the Committee's annual reports. The Committee is charged with monitoring and reporting annually on the operation and maintenance of the gauges required by the Board to carry out its duties and to ensure the accuracy of flow and water level measurements and computational methods.

The Board remained interested in IJC activities related to the Lake Ontario-St. Lawrence River Study and offered to provide information and advice to the Commission on request.

COMMUNICATION ACTIVITIES

The Board held its annual meeting with the public in Alexandria Bay, N.Y. on June 20, 2006 and a semi-annual teleconference with the public on September 19, 2006.

The Board continued to issue news releases on its strategies and rationale following each major regulation decision.

The Communication Committee continued to provide advice and assistance to the Board in planning and carrying out its communication activities. Key activities included work on a 5-year plan of action to ensure effective communications with the public during the upcoming transition years, development of fixed schedules and venues for future public events, a major expansion of the Board's stakeholder database based on the work of the Lake Ontario-St. Lawrence River Study Board, work on the development of updated and improved communication products and development of weekly graphs of water supplies, levels and outflows in the Lake Ontario-St. Lawrence River system for posting on the Board's website in response to public requests.

The Board recommends that its public outreach program and the Commission's related public communication and education efforts continue at their current level of activity, if not at an elevated level, in order to increase the level of knowledge and support of the regulation process and to ensure the expectations expressed by the public are realistic. The Board continued to focus on efforts to understand and respond to the issues and concerns of stakeholders in ways that are consistently understandable, positive and helpful.

The Board wrote to the Commission on August 28 to request the Commission to regularize its financial support for the Board's communications program and continue its temporary communications support with the unexpended funds resulting from the early departure of the previous Communication Specialist, until permanent support can be authorized and funded. Current and other products and communications improvements that have been identified will require the dedicated support of a qualified, experienced communications professional if future communications are to be sufficient. The Board has asked that the temporary communications position be re-filled through the end of the contract term and that a permanent communications position be authorized, fully-funded, and filled to start as soon as possible after that.

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Figure 2. Map of Lake Ontario-St. Lawrence River System

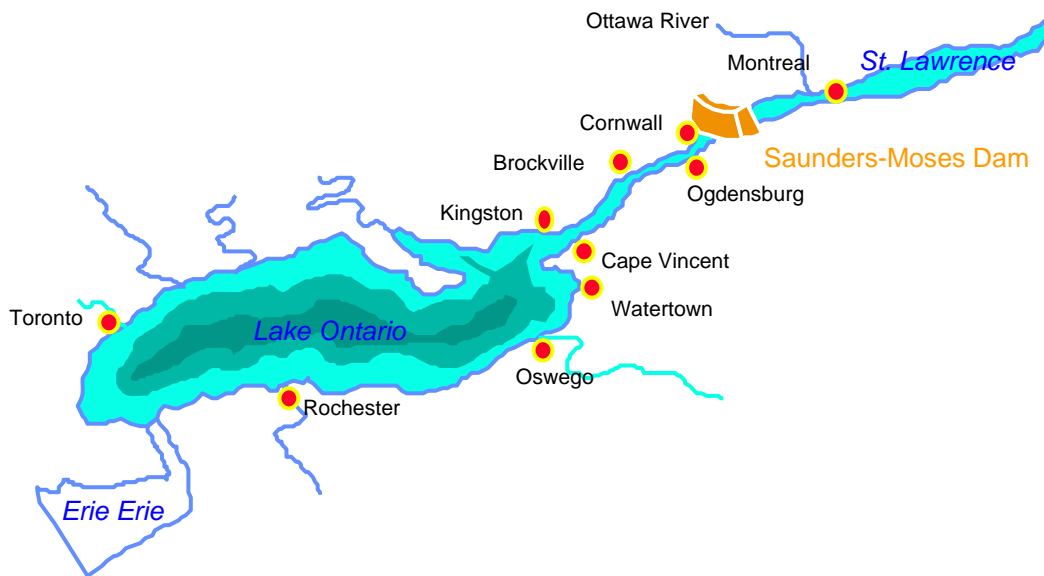


Figure 3. Map of Upper St. Lawrence River Control Structures

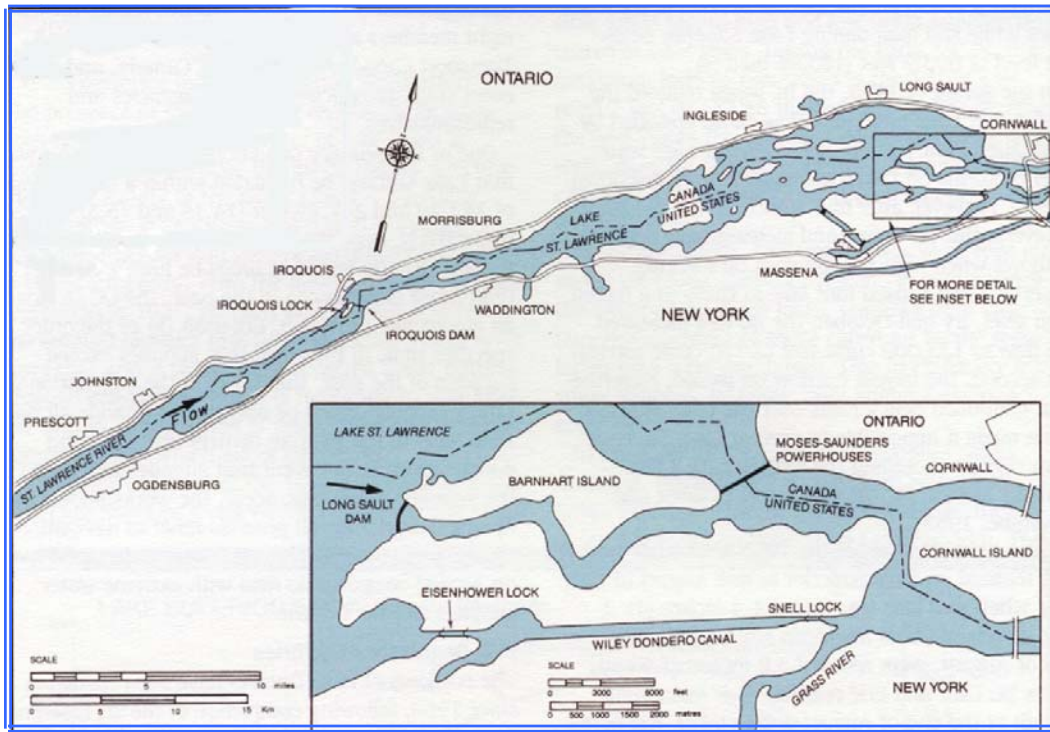
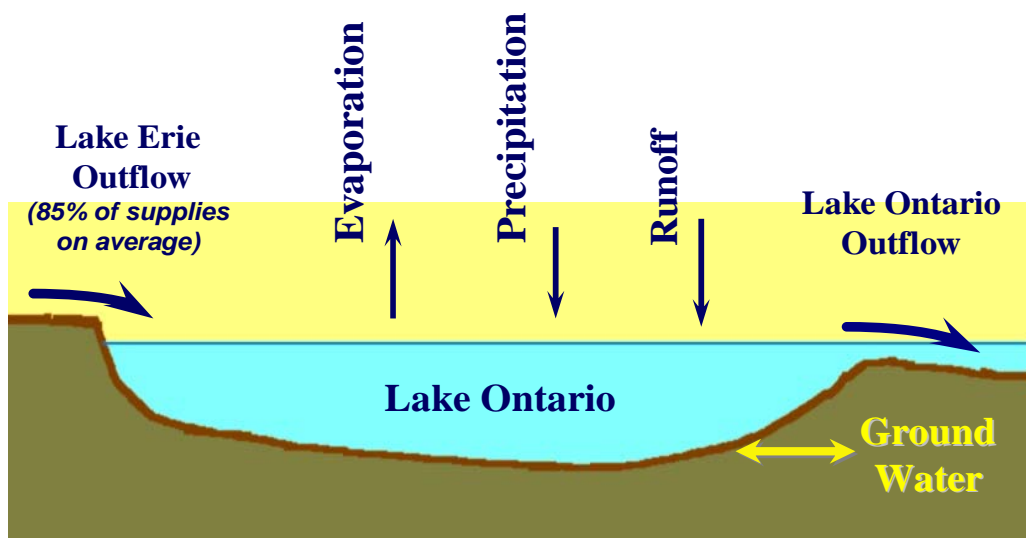


Figure 4. Factors Affecting the Level of Lake Ontario



1 HYDROLOGICAL CONDITIONS

Lake Ontario is the furthest downstream of the five Great Lakes. It receives the outflow of Lakes Superior, Michigan, Huron and Erie (Figure 4). From a long-term perspective, about 85 percent of the water received by Lake Ontario comes from the upstream Great Lakes. Lake Ontario outflows are controlled at a location about 160 kilometres (100 miles) from the Lake (Figure 2), with almost all of the water going through the Saunders-Moses powerhouse. Prior to construction of the powerhouse and navigation locks (Figure 3), the flow out of Lake Ontario was controlled by a series of rapids that began about 110 kilometres (70 miles) downstream of the Lake, near the towns of Ogdensburg, New York and Prescott, Ontario.

Water supply to Lake Ontario is composed of four main factors (Figure 4): inflow from Lake Erie through the Niagara River and Welland Canal diversion, precipitation on the surface of the Lake, runoff from streams and groundwater flowing into the Lake and evaporation of water from the Lake. In addition, water for consumptive use is taken from the Lake.

In this report, supplies to Lake Ontario are reported in terms of Net Basin Supplies and Net Total Supplies. The definitions of these terms are as follows:

The Net Basin Supply is the net of the amount of precipitation over the Lake, runoff to the Lake, including groundwater, and evaporation and consumptive uses from the Lake's surface. Precipitation and runoff are estimated by measurements but it is not possible to accurately measure evaporation and consumptive uses. Therefore, the Net Basin Supply is estimated as the difference between the Lake's outflow down the St. Lawrence River and inflow from Lake Erie, plus any change in storage within the Lake itself as a result of a rise or fall in the Lake's level. An indicator of the amount of spring runoff that may be expected is obtained by monitoring the snow pack in the basin.

The Net Total Supply is obtained by adding to the Net Basin Supply the inflows from Lake Erie through the Niagara River and Welland Canal. The Niagara River flow is computed using a stage-discharge relationship for the Niagara River below Niagara Falls and adding the flow through the hydropower turbines located along the Niagara River.

1.1 Net Basin Supply to the Lake Ontario Basin

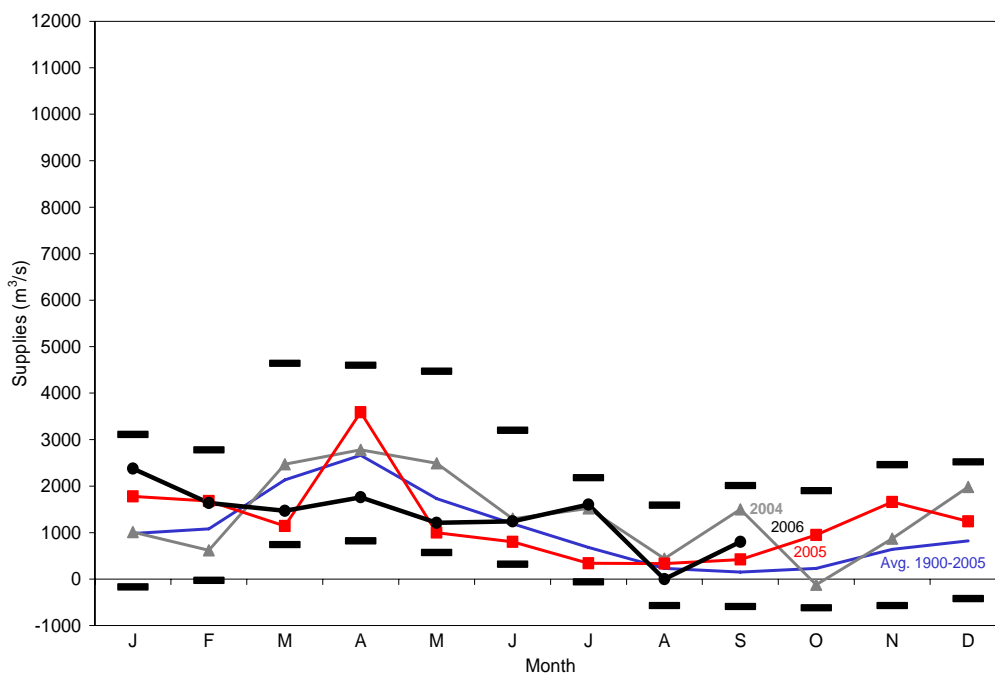
The monthly local net basin supplies for March through August 2006 are provided in Table 1. Figure 5 shows the monthly net basin supplies for the years 2004, 2005, and 2006 to date as well as the average monthly net basin supplies for the period 1900 to 2005. The horizontal bars above and below the curves are the recorded maximum and minimum long-term monthly net basin supplies. In 2006, the local net basin supplies were below average in March, April and May, near average in June, above average in July and below average again in August. The total net basin supply for the 6-month period was about 84 percent of average and had an exceedence probability of 69 percent.

Table 1. Monthly Mean Supplies to Lake Ontario

2006	Inflow from Lake Erie				Local Net Basin Supplies			Total Supplies			
	m ³ /s	tcfs	Exceed Prob. ⁽¹⁾	Percent of LTA ⁽¹⁾	m ³ /s	tcfs	Exceed Prob.	m ³ /s	tcfs	Exceed Prob. ⁽¹⁾	Percent of LTA ⁽¹⁾
Mar	5880	208	37	104	1460	52	81	7340	259	62	94
Apr	5860	207	52	98	1760	62	87	7620	269	79	88
May	5840	206	70	94	1210	43	78	7050	249	77	89
Jun	5560	196	84	89	1240	44	42	6800	240	73	92
Jul	6020	213	58	98	1600	57	3	7620	269	17	112
Aug	5790	204	65	96	0	0	74	5790	204	74	92

⁽¹⁾ Based on period of record 1900-2005

Figure 5. Net Basin Supply to Lake Ontario



1.1.1 Precipitation

The monthly precipitation amounts for the Lake Ontario basin and the entire Great Lakes basin for March through August 2006 are provided in Table 2. Figure 6 shows the precipitation over the Lake Ontario basin for the years 2004, 2005 and 2006 to date as well as the long term average, maxima and minima for 1900-2005. In 2006, precipitation over the Lake Ontario basin was below average in March, near average in April and below average again in May. It rose above average again in June and was near record highs for the month of July and nearly double the average amount for the month. August was much dryer. The total amount of precipitation received in the Lake Ontario basin during the 6-month period was 491 mm (19.3 in.), which was 107 percent of average and had an exceedence probability of 28 percent.

By comparison, 434 mm (17.1 in.) of precipitation fell in the entire Great Lakes basin, which was about 99 percent of average and had an exceedence probability of 56 percent.

Table 2. Precipitation over the Lake Ontario and Great Lakes Basins

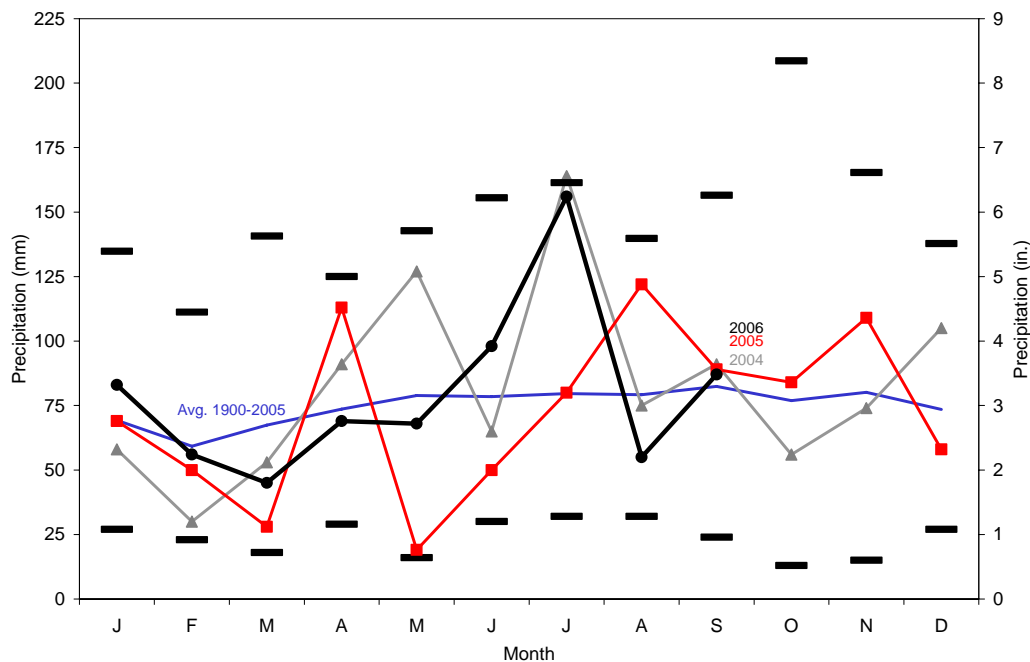
2006	Great Lakes Basin			Lake Ontario Basin		
	mm (inches) ⁽¹⁾	Percent of LTA ⁽²⁾	Exceed. Prob. ⁽³⁾	mm (inches) ⁽¹⁾	Percent of LTA ⁽²⁾	Exceed. Prob. ⁽³⁾
Mar	54 (2.13)	98	50	45 (1.79)	67	85
Apr	53 (2.08)	83	72	69 (2.70)	93	56
May	100 (3.92)	132	11	68 (2.68)	86	61
Jun	61 (2.40)	75	82	98 (3.84)	126	25
Jul	108 (4.24)	135	6	156 (6.13)	195	<1
Aug	58 (2.28)	73	86	55 (2.15)	70	86

⁽¹⁾ Provisional

⁽²⁾ Based on period of record 1900-2005

⁽³⁾ Based on period of record 1900-1999

Figure 6. Precipitation over Lake Ontario Basin



1.1.2 Snow-pack on the Lake Ontario Basin

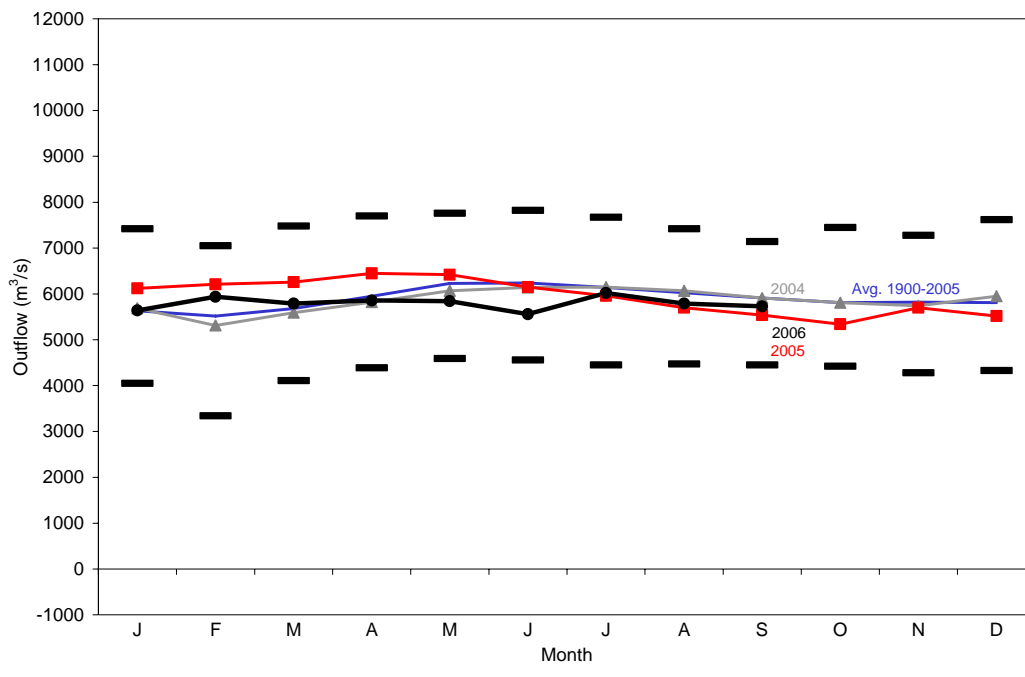
There was virtually no snow pack left on the Lake Ontario basin by the start of the reporting period on March 30, except at the extreme eastern end.

1.2 Supply from Lake Erie

The inflows to Lake Ontario from Lake Erie through the Niagara River during the March through August 2006 period are provided in Table 1. Figure 7 shows the supply from Lake Erie for the years 2004, 2005 and 2006 to date as well as the average, maxima and minima for 1900-2005.

Inflows from Lake Erie were below average in May and June and near average for the rest of the reporting period. The June inflows were the lowest compared to average during the period. The total inflow for the 6-month period was 96 percent of average and had an exceedence probability of 62 percent.

Figure 7. Supply from Lake Erie (Niagara River Flow)



1.3 Net Total Supply to Lake Ontario

The monthly net total supplies to Lake Ontario for the March through August 2006 period are provided in Table 1. Figure 8 shows the monthly net total supplies to Lake Ontario for the years 2004, 2005 and 2006 to date as well as the long term average, maxima and minima for 1900-2005. March through August net total supplies for the years 1997 through 2006 are provided in Table 3 and Figure 9 for comparison purposes. In 2006, the monthly net total supplies were below average for all months except July. The supplies were remarkably consistent from February through July. The net total supply for the entire 6-month period was 94 percent of average and had an exceedence probability of 69 percent. The 6-month supply was the third lowest in the last ten years.

1.4 Ottawa River Basin

Considerable snow pack remained on the Ottawa River basin at the beginning of the reporting period on March 30 but the spring runoff, which had begun early, was well underway. The spring runoff was essentially completed by early May. As a result, the Ottawa River outflows, which are measured at Carillon, which were above average for the month of April, were below average for the months of May and June. Outflows were generally near average for the rest of the reporting period. There were two flow peaks at Carillon during the spring runoff period: on April 5 at 4,587 m³/s (162,000 cfs), and on April 20 at 4,514 m³/s (159,400 cfs).

Figure 8. Net Total Supply to Lake Ontario

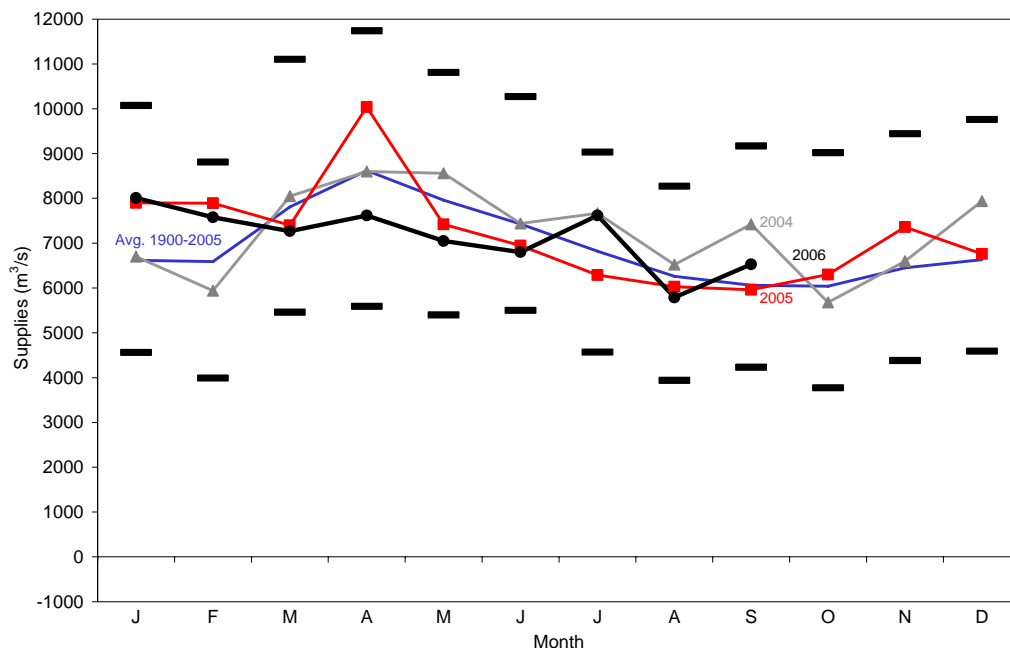
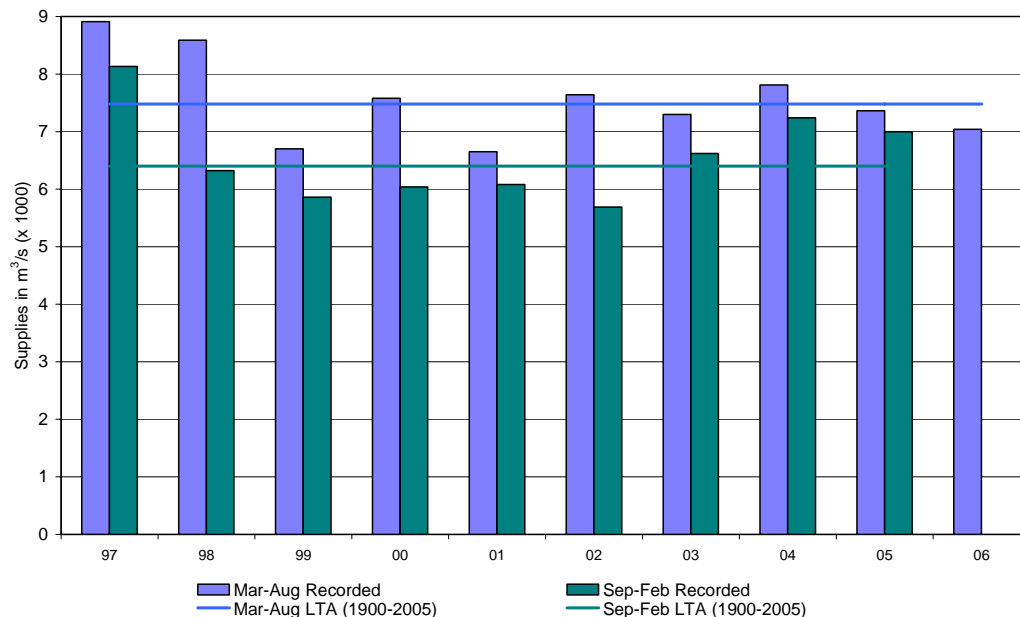


Table 3. Average and Recorded Six-Month Supplies (Mar-Aug)

	Long-Term Average ⁽¹⁾		Recorded			Recorded Below (-) or Above Average (+)		
	(m³/s)	(tcf/s)	(m³/s)	(tcf/s)	Exceed. Prob. ⁽¹⁾	(m³/s)	(tcf/s)	Percent
Mar-Aug 97	7480	264	8910	315	5	1430	50	19
Mar-Aug 98	7480	264	8590	303	10	1110	39	15
Mar-Aug 99	7480	264	6700	237	81	-780	-28	-10
Mar-Aug 00	7480	264	7580	268	45	100	4	1
Mar-Aug 01	7480	264	6650	235	83	-830	-29	-11
Mar-Aug 02	7480	264	7640	270	42	160	6	2
Mar-Aug 03	7480	264	7300	258	58	-180	-6	2
Mar-Aug 04	7480	264	7810	276	36	330	12	-2
Mar-Aug 05	7480	264	7360	260	55	-120	-4	4
Mar-Aug 06	7480	264	7040	249	69	-440	-16	-6

⁽¹⁾ Based on period of record 1900-2005

Figure 9. Lake Ontario Average & Recorded Net Total Six-Month Supplies

2 REGULATION OF FLOWS & LEVELS

2.1 Application of Regulation Plan 1958-D

The Board assures that the provisions of the Commission's Orders of Approval relating to Lake Ontario-St. Lawrence River outflows and levels are met. Control of the outflows and levels of Lake Ontario follows a regulation plan that was designed to satisfy the criteria set out in the Commission's Orders and other requirements that were established to balance the benefits of regulation among various interests. The current plan of regulation, Regulation Plan 1958-D, was adopted by the Commission in 1963.

In 1961, the Commission authorized the Board to deviate from the outflows specified by the regulation plan in order to provide additional benefits to interests when this could be done without appreciable adverse effects on other interests. Today, the Board reviews conditions in the Great Lakes and Lake Ontario-St. Lawrence River basins at least monthly and establishes outflow strategies for the coming weeks that may or may not include deviations from Plan flows.

The outflow from Lake Ontario is computed weekly by following the procedure laid out in the Board's July 1963 Report to the Commission on Regulation Plan 1958-D. The computational procedure includes the following steps (the reader is referred to the Board's 1963 Report for additional details and considerations):

- Calculation of a provisional flow based on present conditions in the system (e.g., recent supplies and current/computed levels);
- Checking the provisional outflow against operational limits designed to protect interests; and,
- Setting a final 'Plan' outflow.

The Plan outflow is then reviewed by the Board's Regulation Representatives and Operations Advisory Group (OAG) and assessed against the Board's current outflow strategy and the current operational requirements of domestic water supply, navigation, power and other interests in the system. If all are in agreement, the Regulation Representatives recommend on behalf of the Board an outflow for the week to the Government representatives responsible to direct the hydropower entities (who operate the structures that control the outflows) on the outflow for the coming week. If not all OAG members and Regulation Representatives agree on the flow for the coming week, the Board of Control is called upon to decide.

2.2 Board Regulation Strategies and Actions

In order to be responsive to potentially changing conditions and the needs of interests, the Board schedules monthly teleconferences to review conditions in the Great Lakes-St. Lawrence River system and develop outflow strategies to respond to conditions and ensure that the Board is able to offer assistance to interests in times of critical need. The outflow strategies are designed to enhance the benefits provided by Regulation Plan 1958-D while not significantly adversely impacting any interest. The strategy decisions made during the reporting period and their rationales are provided on pages 20 to 23. In summary, the Board maintained a single strategy throughout the reporting period, that is, maintaining outflows in accordance with Plan 1958-D except for short-term discretionary deviations to mitigate the risk of flooding in the Montreal area, meet critical hydropower demand, maintain the levels on Lake St. Louis at Pointe Claire above 20.6 m (the Seaway Low Alert level) or allow incoming vessels to reach the Port of Montreal. By adopting this strategy, the Board maintained a reserve of water that had been previously built up on Lake Ontario, for use in meeting the critical needs of interests later in the year. Figure 10 shows the actual Lake Ontario outflows for 2006 to date and demonstrates how Plan 1958-D and the Board's strategies responded to the varying supply conditions described in Section 1.

2.2.1 Deviations from Regulation Plan 1958-D

Discretionary outflow deviations made during the reporting period are given in Table 4. The effect of the deviations on lake levels is shown in Figure 12. The effectiveness of the deviations in meeting urgent situations and critical needs is reviewed in Section 2.3.

During the reporting period the Board deviated from Plan flow twice, for a total of 365 hours which was approximately 8 percent of the time. The reasons for the deviations are as follows:

- Under-discharged for 168 hours from May 6 and May 12 and over-discharged an equal amount for 168 hours from May 13 through May 19 to moderate the abrupt drop in Plan outflow due the change from the winter supply indicator adjustment to the normal supply indicator adjustment because a smooth transition was thought to be preferred by all interests (As seen in Figure 12, the cumulative impact on Lake level was negligible);
- Over-discharged for 28 hours on August 3-4 to reduce high levels on Lake St. Lawrence to provide relief to concerned residents on the lake.

The net result of these deviations was to reduce the amount of water conserved on Lake Ontario from 4.7 cm (1.9 in.) on March 30 to 4.6 cm (1.8 in.) on September 27.

Figure 10. Lake Ontario Daily Outflows for 2006

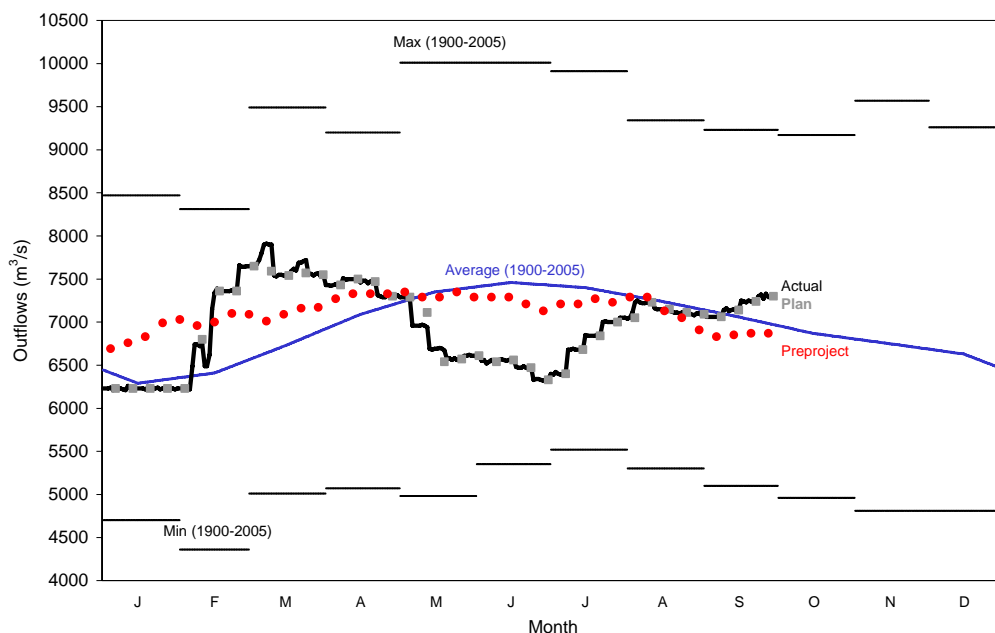


Table 4. Summary of Outflow Deviations from Regulation Plan 1958-D Outflow

2006	Deviation	Deviation (cms-weeks)	Accumulated Deviation rounded (cms-weeks)	Cumulative Effect on Lake Ontario Rounded (cm)	Reason for Deviation
March 30			-1530	4.7	
May 6-12	-150 cms for 168 hrs	-150	-1680	5.2	To smooth the transition in flows
May 13-19	+150 cms for 168 hrs	+150	-1530	4.7	To smooth the transition in flows
August 3-4	+180 cms for 29 hrs	31	-1500	4.6	High Lake St. Lawrence level

2.2.2 Ice Management

The hydropower entities install a series of ice booms each winter in the international section of the River to aid the formation of an ice cover and stabilize the ice cover. The booms are normally removed as the ice deteriorates locally. This year, all booms were removed by March 24 without incident or problem.

2.2.3 Iroquois Dam Operations

Under the conditions of paragraph (j) of the Commission’s Order of Approval dated 29 October 1952, the power entities are permitted to operate Iroquois Dam with Board approval. The gates

of the dam can be lowered into the water to assist in ice formation and to reduce the level of Lake St. Lawrence when there are low outflows. Boaters must use the Iroquois lock to bypass the dam when the dam gates are in use.

The gates were partially lowered on July 5 to prevent very high levels on Lake St. Lawrence resulting from relatively low Plan outflows. The gates remained partially closed until July 28 when the return to higher outflows reduced levels on Lake St. Lawrence below the threshold. The NYPA received a number of complaints from area boaters while the gates were closed.

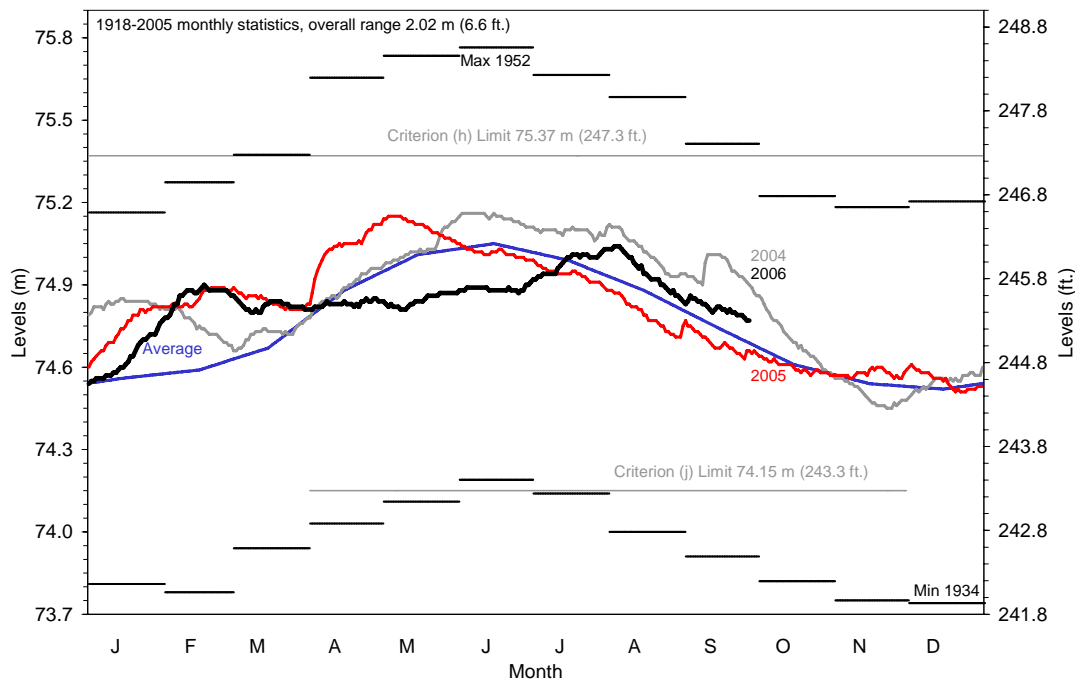
2.3 Results of Regulation

2.3.1 Upstream

Lake Ontario

The daily water levels on Lake Ontario for 2004, 2005 and 2006 to date are shown in Figure 11. The very consistent supplies from February through July resulted in relatively constant Lake levels for several months. At the beginning of March 2006 the level of Lake Ontario was about 20 cm (8 in.) above the long-term average. Higher outflows prescribed by Plan 1958-D in March and April and below-average supplies helped to gradually bring the level to below average by April 7. The levels were about 15 to 18 cm (6 to 7 in.) below average for most of May and June and then gradually rose again to above average by July 14. The level remained slightly above average for the rest of the reporting period. The wet conditions in July resulted in a late seasonal peak this summer and the highest level for the season was recorded on August 3-5 at 8 cm (3.1 in.) above average.

Figure 11. Water Level on Lake Ontario

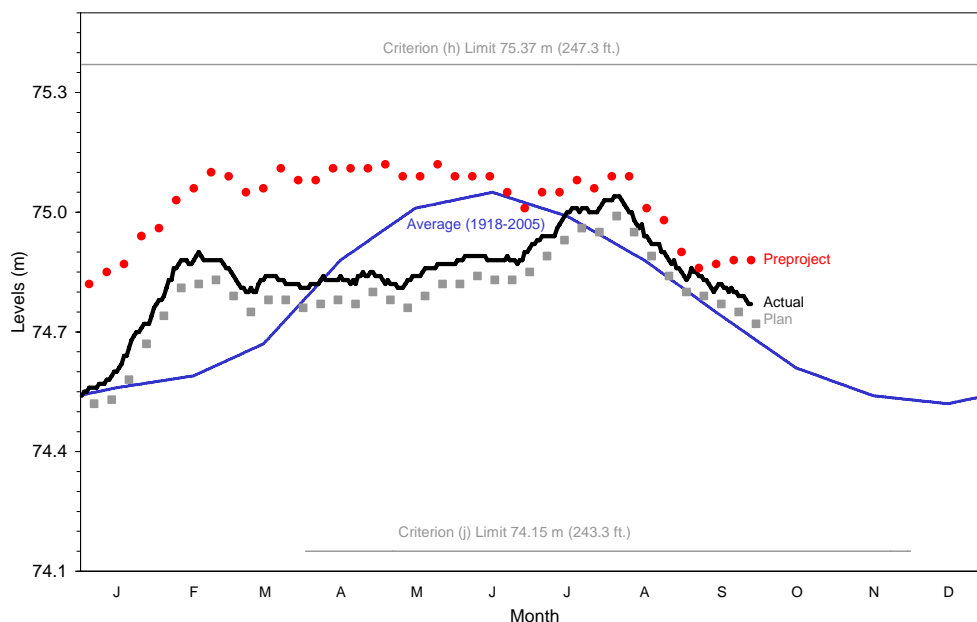


As a means of informing the Commission on the impacts of regulation activities on levels and outflows, the Board provides the Commission with a comparison of Lake Ontario’s actual monthly levels and outflows to those that would have been obtained under pre-project conditions (that is, the levels and outflows that would have occurred had regulation not been undertaken – Appendix 1). A summary of this comparison for the reporting period is provided in Table 5. Figure 12 provides a comparison of the daily levels with the long-term average, weekly computed Plan 1958-D and pre-project levels. Lake Ontario levels ranged from 28 cm (0.9 foot) (April) to 5 cm (0.2 feet) (September) lower than they would have been without regulation (i.e., the pre-project level).

Table 5. Lake Ontario Recorded and Pre-Project Levels and Outflows

2006	Monthly Mean Lake Ontario Water Levels (IGLD 1985)			Monthly Mean Lake Ontario Outflow		
	Recorded (metres (feet))	Pre-project (metres (feet))	Diff. (cm (inches))	Recorded (m ³ /s (t cfs))	Pre-project (m ³ /s (t cfs))	Diff. (m ³ /s (t cfs))
Mar	74.82 (245.47)	75.08 (246.32)	-26 (-10.2)	7650 (270)	7120 (251)	530 (19)
Apr	74.83 (245.50)	75.11 (246.42)	-28 (-11.0)	7420 (262)	7330 (259)	90 (3)
May	74.84 (245.54)	75.09 (246.36)	-25 (-9.8)	6810 (240)	7310 (258)	-500 (-18)
Jun	74.89 (245.70)	75.05 (246.22)	-16 (-6.2)	6490 (229)	7230 (255)	-740 (-26)
Jul	74.98 (245.99)	75.06 (246.26)	-8 (-3.2)	6760 (239)	7240 (256)	-480 (-17)
Aug	74.95 (245.90)	75.00 (246.06)	-5 (-1.9)	7140 (252)	7100 (251)	40 (1)

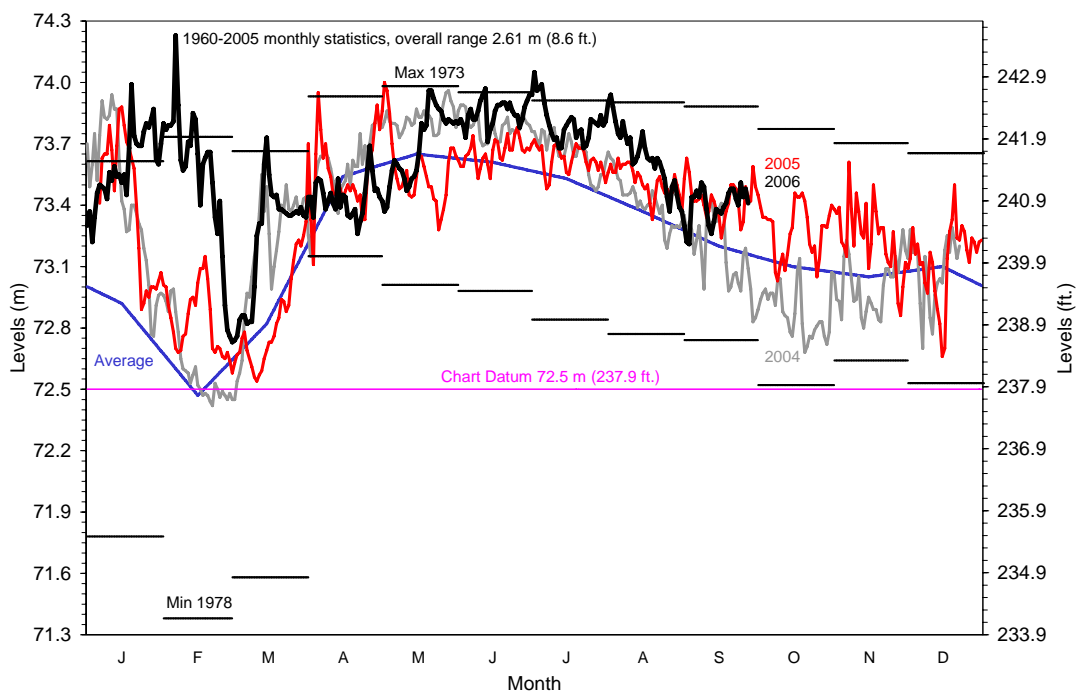
Figure 12. Lake Ontario Actual, Pre-Project and Plan Levels



Lake St. Lawrence

The daily levels on Lake St. Lawrence at Long Sault Dam for 2004, 2005 and 2006 to date are shown in Figure 13. The levels were well above average for much of March but declined to slightly below average by mid April. In mid May, the relatively low Plan outflows caused the levels to rise rapidly to about 20 cm (8 in.) above average where they generally remained for the rest of the reporting period. On July 5, the level at Long Sault Dam had risen to 73.99 m (242.75 ft.) and the gates of Iroquois Dam were operated from July 5 through July 28 to help suppress a period of very high levels (Section 2.2.3). A short term over-discharge on August 3 was also successful in keeping the levels below the alert (Section 2.2.1).

Figure 13. Water Level on Lake St. Lawrence (at Long Sault Dam)

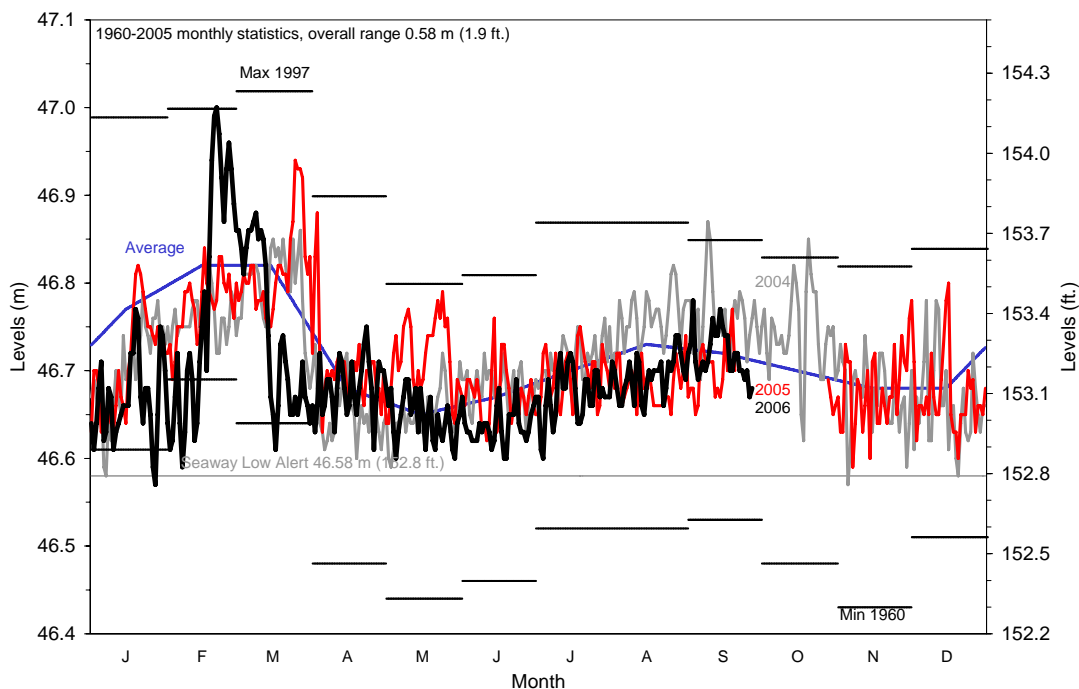


2.3.2 Downstream

Lake St. Francis

The regulation of Lake Ontario outflows has a limited effect on the levels of Lake St. Francis, as the lake level is regulated by hydropower plant operations at Beauharnois and Les Cedres, Quebec. The historic range of monthly mean levels on Lake St. Francis since completion of the Saunders-Moses project is about one-fifth that of Lake St. Lawrence.

The daily levels on Lake St. Francis at Summerstown for 2004, 2005 and 2006 to date are shown in Figure 14. The levels were below average in March but rose to near average in April and May. They fell somewhat below average again in June and remained generally below average in July and August. Daily fluctuations in the level caused by shifting winds and operations were within the normal ranges and the daily mean levels remained above the Seaway Low Alert level throughout the reporting period.

Figure 14. Water Level on Lake St. Francis (at Summerstown)

Lake St. Louis

Lake St. Louis water levels are influenced by the discharges from both the St. Lawrence and Ottawa Rivers. The daily water levels on Lake St. Louis at Pointe-Claire for 2004, 2005 and 2006 to date are shown in Figure 15. The levels were slightly above average during the Ottawa River runoff period from late March through April and the daily mean level did not exceed the alert threshold. The highest daily mean level of 21.88 m (71.77 ft.) occurred on April 5 and again on April 28. The lake levels declined to somewhat below average for the rest of the reporting period except for three days in early August. Levels remained well above the Seaway Low Alert level.

Port of Montreal

Water levels in Montreal Harbour are influenced by the discharges from the St. Lawrence and Ottawa Rivers, winds and, to a small extent, the tide.

The daily water levels in Montreal Harbour for 2004, 2005 and 2006 to date are shown in Figure 16. The spring Harbour levels followed a similar pattern to those on Lake St. Louis and after the April runoff period the levels in the Harbour also remained below average except for three days in early August. The levels were well above chart datum for most of the time during the reporting period except for a week at the end of June when daily levels were near the datum and fell below datum once, on June 27.

Figure 15. Water Level on Lake St. Louis (at Pointe-Claire)

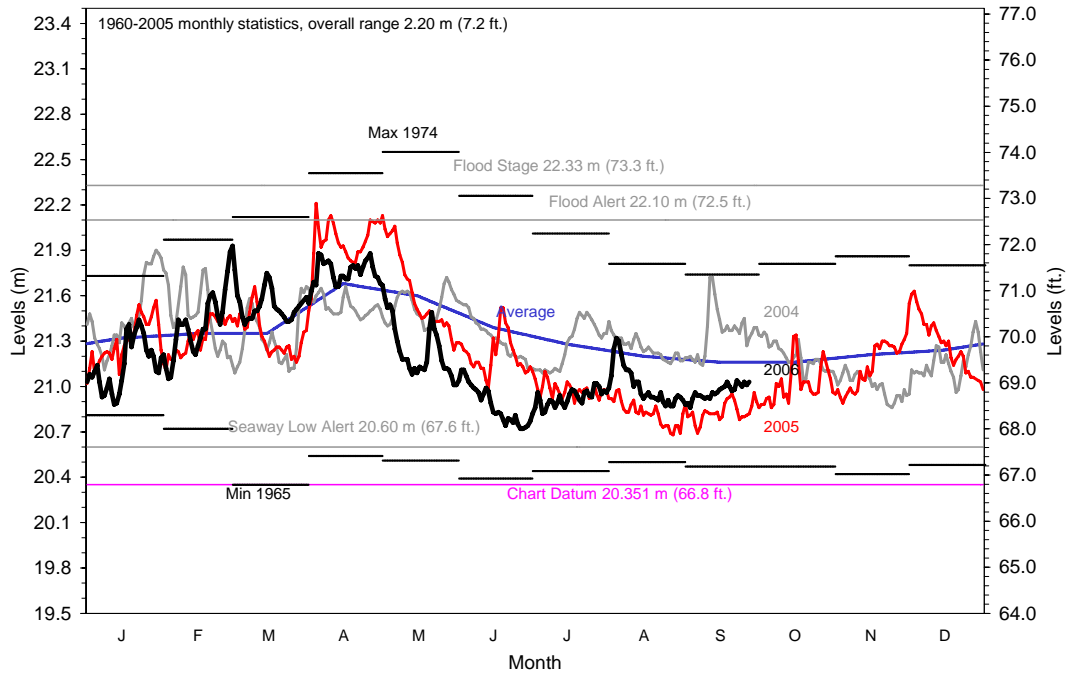
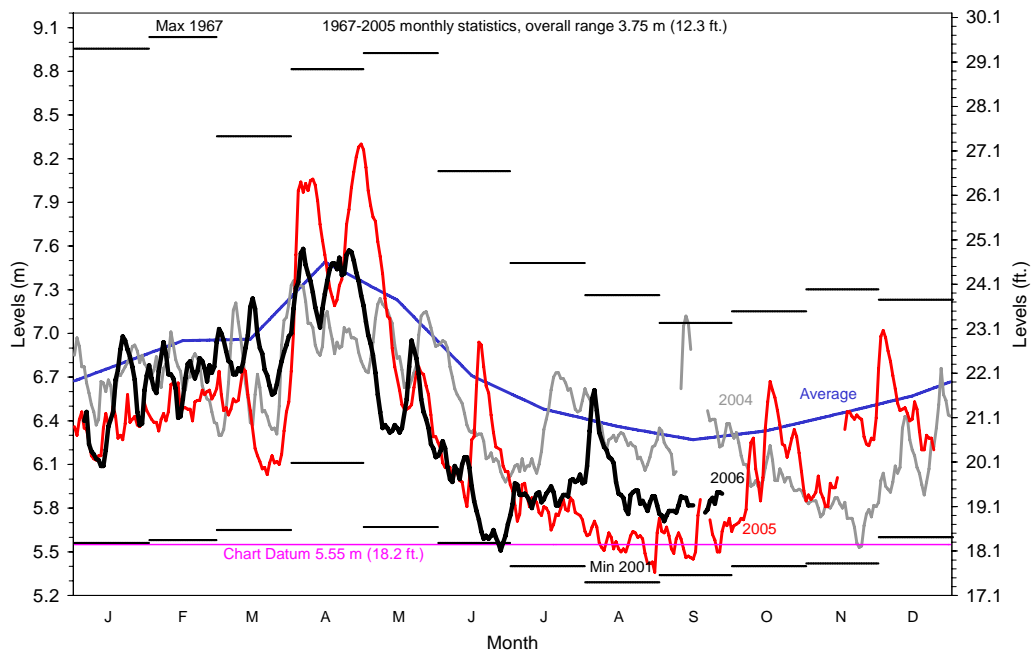


Figure 16. Water Level in the Port of Montreal (at Jetty #1)



3 BOARD ACTIVITIES

3.1 Board Meetings & Conference Calls

The Board continued to oversee the operations of the hydropower project in the international reach of the St. Lawrence River. The Board, primarily through the offices of the Regulation Representatives, monitored conditions throughout the Lake Ontario-St. Lawrence River and Ottawa River systems. The Regulation Representatives provided the Board with weekly regulation data, monthly reviews of the hydrological conditions, monthly 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 apprise the Regulation Representatives of any weekly operational requirements and constraints. The Committee on River Gauging continued to monitor the Power Entities' program for operation and maintenance of the gauge system required for Board operations.

The Board continued to assess conditions in the basin and adjust its regulation strategy monthly through meetings, conference calls or e-mails. During the reporting period, the Board met twice face-to-face, on June 20 in Alexandria Bay, NY and on September 27 in Montreal, Quebec, and once by teleconference, on August 9. In April, May, July and early September, the 'monthly' regulation strategy decisions were confirmed by e-mail and telephone. Table 6 provides a list of Board members in attendance at the meetings and conference calls.

Table 6. Attendance at Meetings and Teleconferences

Board Member	Country	June 20 Meeting*	Aug. 9 T. Conf.	Sept. 27 Meeting*
Mr. J. Bernier	U.S.		x	x
BG B. A. Berwick ¹	U.S.			
Mr. A. Carpentier	Can.	x	x	x
COL J. D. Drolet ²	U.S.	-		x
Dr. T. Hullar	U.S.	x	x	x
COL G. E. Johnston ³	U.S.	x	-	-
Mr. J. Lorquet ⁴	Can.	x		x
Mr. R. P. Metcalfe	Can.	x	x	x
Dr. F. Sciremammano, Jr.	U.S.	x	x	x
Mr. P. Yeomans	Can.	x	x	x

- Notes: 1. U. S. Co-Chair
 2. Replaced COL Johnston as Alternate U.S. Co-Chair on June 30, 2006
 3. Alternate U.S. Co-Chair; resigned from Board on June 30, 2006 upon reassignment to other duties
 4. Canadian Co-Chair

* Locations of Meetings: June 20, 2006 – Alexandria Bay, NY
 September 27, 2006 – Montreal, QC

3.2 Meetings with the Public and Input from the Public

The Board held its annual meeting with the public on June 20, 2006 in Alexandria Bay, NY and its fall teleconference with the public on September 19, 2006. The fall teleconference followed the new dial-in-from-home format implemented in March 2006, with the two meeting sites located in Cornwall, ON and Oswego, NY. About 35 public attended the public meeting and about 44 participated in the public teleconference (25 on line and 19 on site). A summary of the public meeting will be distributed to participants and posted on the Board's website. The Board established a fixed time for future public meetings and teleconferences, being the third Tuesday of June for face-to-face meetings and the third Tuesday of September and third Tuesday of March for teleconferences with the public. Fixed locations for the on-site meetings associated with the teleconferences were established at Montreal and Rochester in the spring and Cornwall and Oswego in the fall.

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 a number of inquiries and requests for interviews from the media and the general public concerning water level conditions and the Board's strategies.

4. COMMUNICATIONS COMMITTEE REPORT

The Board's experience and the work of the recently submitted Study both demonstrate that communications have become ever more important to the Board and Commission. Therefore, effective communications remains a key focus of the Board. Overall over the past year of so the Board has updated, modernized and intensified communications with the public, to good effect. The Board's core activities—Multi-City Teleconferences, Annual Meeting with the Public, news releases and communiqués—continue, but they are steadily being upgraded by more user-friendly and professionally-based communications work and a number of innovations have been introduced to date.

During the reporting period the Board worked with the International Joint Commission through the Communications Committee and Communications Specialist to identify further opportunities to improve communications with the public and implement them where available resources allowed. The Communications Committee met several times face-to-face and by teleconference to continue the development of short-term and long-term work plans for the Committee, work on the establishment of a comprehensive database on stakeholders, establish standard times for meetings and teleconferences with the public and fixed locations for the on-site meetings associated with the teleconferences, implement the comprehensive mailing list developed by the LOSL Study Board (approximately 1700 names) to improve Board communication with stakeholders and attendance at Board public events, and prepare for updating the brochure describing the story of the regulation of Lake Ontario outflows, how it works and the Board's role (the new brochure would be proposed for release sometime early in the transition period following the IJC's announcement regarding the future regulation of Lake Ontario). The Committee also analysed the Board's current and anticipated communication needs and the related need for the continued support of a communication specialist, worked on the development of water level and other hydrologic charts to be published weekly and monthly on the Board's website to respond to requests by the public and consider accompanying the charts with pre-recorded written or oral briefings, and, worked on an update of the Board's Communication Strategy document.

Routine communication activities carried out during the reporting period included:

- Preparation of news releases: The Board issued news releases after each regulation decision, to provide the public with recent information on water level conditions and regulation strategies; the releases were sent to fax and mailing lists as well as posted on the Board's website and ListServe;
- 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 1-800-883-6390, and in Canada the numbers are 1-800-215-8794 (English) and 1-800-215-9173 (French);
- Operation of the Board's Web Page on the Internet (<http://www.islrbc.org>) (the average monthly number of visitors during the reporting period was approximately 2000). The Page includes:
 - Weekly updates on water levels and outflows;
 - General information about the Board, its activities and structure;
 - Announcements about Board-related public meetings and events;
 - Announcements about the Board's outflow strategies and related news releases;
 - Posting of the Board's meeting minutes and teleconference summaries;
 - Information about the Board's next annual meeting and teleconferences with the public.
- The Board's annual meeting and fall teleconference with the public (Section 3.2);
- The Board's Regulation Representatives send out weekly updates on Lake Ontario regulation and water level and outflow conditions, as well as the Board's news releases and public meeting notices, to a list of approximately 130 e-mail subscribers.

The support provided by the Communications Specialist was instrumental in enabling several of the recent communications improvements. This work has been enthusiastically endorsed by the Board, so when the previous Specialist left before the end of his contract period and in recognition of the need for continued financial support by the IJC to continue the work, the Board wrote to the Commission on August 28 to request the Commission to regularize its financial support for the communications program and continue its temporary communications support with the unexpended funds until permanent support can be authorized and funded. Current and other products and communications improvements that have been identified will require the dedicated support of a qualified, experienced communications professional if future communications are to be sufficient. In summary, the Board has asked that (i) the temporary communications position be re-filled through the end of the contract term and that (ii) a permanent communications position be authorized, fully-funded, and filled to start as soon as possible after that. It may be expedient to have a full-time person work on Board responsibilities together with IJC activities, especially during the upcoming transition period and the Board would work with the Commission to develop a mutually acceptable plan of work.

5 RIVER GAUGING COMMITTEE REPORT

The Board's St. Lawrence Committee on River Gauging monitors the Power Entities' program of operating and maintaining 15 water level gauges required for the Board's monitoring of water levels and flows related to the operation of structures and forebay elevations. This includes annual inspections of the water level gauging network. The Committee also ensures the accuracy of flow and water level measurements. This includes annual inspections of the computational methods used at each of the eight outflow structures as well as auditing the Power Entities' data processing. The Committee is charged with providing the Board with an annual report on the inspection results and computed outflows.

The Committee continued to monitor, facilitate and report on progress made by the responsible agencies in follow up to a number of recommendations appearing in Committee's reports that were adopted by the Board. The Board also concluded that the Power Entities are responsible for providing Iroquois Dam tail water data to the Regulation Representatives but may do so through another agency by agreement with that agency.

The Board discussed at length with the Committee Chairmen and Power Entity representatives the late receipt of several of the Committee's annual reports.

5.1 Water Level Gauges

Gauge monitoring activities proceeded routinely during the reporting period.

5.2 Raisin River

The Raisin River Diversion was opened on July 20 and was still in operation on September 27. The diverted outflow was minimal and averaged less than a cubic foot per second (about 0.01-0.03 m³/s). The diversion channel remains severely overgrown with vegetation, which restricts the amount of water diverted.

5.3 Turbine Upgrades

NYPAs Unit 29 was returned to service on April 28, 2006. It had been out of service since October 11, 2005 for upgrade to an Alstom turbine. Moses Unit 30 was removed from service for upgrade to an Alstom turbine on May 1, 2006 and is expected back in operation around Dec. 1, 2006. Flows through upgraded units are calculated using an Interim Rating Table.

6 ST. LAWRENCE SEAWAY REPORT

The Seaway Entities continued to participate on the Board's Operations Advisory group and reported no operational problems or concerns related to the regulation of Lake Ontario outflows during the reporting period.

The Board agreed that the Seaway Entities need no longer submit formal written reports to the Board on the opening and closing of the Seaway so long as the information is conveyed to the Board.

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. Conditions governing peaking and ponding operations are specified in Addendum No. 3 to the Operational Guides for Regulation Plan 1958-D. The authority to peak and pond is subject to Commission review and approval every five years. However, following the latest review, the Commission, on October 28, 2005, approved peaking and ponding operations until the adoption of any revised Orders for the regulation of the St. Lawrence River or for a two-year period, whichever comes first.

Peaking operations were conducted during the reporting period, but no ponding operations were conducted.

8 BOARD AND COMMITTEE MEMBERSHIP CHANGES

Colonel John D. (Jack) Drolet was appointed the Alternate U.S. Chair of the Board on June 30, 2006. He replaced Colonel Gary E. Johnston who was assigned to command the U.S. Army Corps of Engineers' Southern District in Iraq.

There remains one vacancy on each of the Canadian and U.S Sections of the Board.

Lieutenant Colonel John S. Hurley was appointed as the U.S. Regulation Representative on July 14, 2006, replacing Lieutenant Colonel Timothy Touchette. Colonel Hurley also assumed the responsibilities of the U.S. Chair of the Board's Working Committee and U.S. Chair of the Board's River Gauging Committee, effective July 14th.

Respectfully submitted,

Members for Canada

J. Lorquet, Chair

A. Carpentier

R. P Metcalfe

P. Yeomans

Vacant

Members for the United States

BG Bruce A. Berwick, Chair

J. Bernier

T. Hullar

F. Sciremammano, Jr.

Vacant

Lake Ontario Outflow Strategy released April 4, 2006

The International St. Lawrence River Board of Control (Board), after a review of conditions in the Lake Ontario-St. Lawrence system, announced today its intent to follow the outflows called for by Plan 1958-D. Several factors have contributed to this decision.

Although water supply to the Lake Ontario basin has been low in recent weeks, if average amounts of precipitation and evaporation occur over the coming weeks, the Board expects Lake Ontario to peak this summer about 4 cm (1.6 inches) below the long-term average. Also, there is only a very slight risk this year of Lake Ontario exceeding its upper or lower level limits as prescribed in the Orders of Approval for the operation of the system.

The spring runoff of the Ottawa River basin is essentially completed and the risk of flooding in the Montreal area has passed.

Currently, there are about 4.7 centimetres (1.9 inches) of water stored on Lake Ontario. The long-term strategy is to maintain this to assist with critical needs later in the year should they arise. Later in the spring, the Board will assess conditions to determine if the water currently held in reserve on Lake Ontario should be added to, maintained, or reduced.

The Board, in conjunction with its staff, is watching the situation carefully and is prepared to take quick action if required. The Board will meet again in about a month to assess the situation, or earlier if there is a significant change in conditions.

Lake Ontario Outflow Strategy released May 11, 2006

The International St. Lawrence River Board of Control (Board), after a review of conditions in the Lake Ontario-St. Lawrence system, announced today its intent to follow the outflows called for by Plan 1958-D. Several factors have contributed to this decision.

Although water supply to the Lake Ontario basin has been low in recent weeks, if average amounts of precipitation and evaporation occur over the coming weeks, the Board expects Lake Ontario to peak this summer about 4 cm (1.6 inches) below the long-term average. Also, there is only a very slight risk this year of Lake Ontario exceeding its upper or lower level limits as prescribed in the Orders of Approval for the operation of the system.

The spring runoff of the Ottawa River basin is essentially completed and the risk of flooding in the Montreal area has passed.

Currently, there are about 4.7 centimetres (1.9 inches) of water stored on Lake Ontario. The long-term strategy is to maintain this to assist with critical needs later in the year should they arise. Later in the spring, the Board will assess conditions to determine if the water currently held in reserve on Lake Ontario should be added to, maintained, or reduced.

The Board, in conjunction with its staff, is watching the situation carefully and is prepared to take quick action if required. The Board will meet again in about a month to assess the situation, or earlier if there is a significant change in conditions.

Lake Ontario Outflow Strategy released June 26, 2006

The International St. Lawrence River Board of Control (Board), after a review of conditions in the Lake Ontario-St. Lawrence system, announced today its intent to follow the outflows called for by Plan 1958-D. Several factors have contributed to this decision.

The water supply to the Lake Ontario basin has been low in recent months, resulting in levels that are about 15 cm (6 in.) below average. The level is well within the mandated range, about 49 cm (1.6 ft.) below the maximum monthly average, and about 73 cm (2.4 ft.) above the minimum monthly average. In response to the low water supplies, Plan 1958-D is specifying lower than average outflows. Lake St. Lawrence levels are near the upper limit due to the relatively low outflows; Iroquois Dam's gates may be partially closed to reduce the water levels if required. The below-average Lake Ontario outflows, and below average flows from the Ottawa River and other tributaries, are causing the levels of Lac St. Louis and the St. Lawrence River in the Montreal area to be 60 to 100 cm below average. If average precipitation and evaporation occur over the coming weeks, the Board expects Lake Ontario and the St. Lawrence River to stay close to their current level for much of the summer. There is an extremely small risk this year of Lake Ontario exceeding its upper or lower level limits as prescribed in the Orders of Approval for the operation of the system.

Currently, there are about 4.7 cm (1.9 in.) of water stored on Lake Ontario. The long-term strategy is to maintain this to assist with critical needs later in the year should they arise. The Board, in conjunction with its staff, is watching the situation carefully and is prepared to take quick action if required. The Board will meet again in July to assess the situation, or earlier if there is a significant change in conditions.

Lake Ontario Outflow Strategy released July 12, 2006

The International St. Lawrence River Board of Control (Board), after a review of conditions in the Lake Ontario-St. Lawrence system, announced today its intent to follow the outflows called for by Plan 1958-D. Several factors contributed to this decision.

The water supply to the Lake Ontario basin has been low in recent months, resulting in levels that are about 5 cm (1.9 in.) below average. The level has risen slightly in the past month, and is well within the mandated range, about 43 cm (1.4 ft.) below the maximum monthly average, and about 79 cm (2.6 ft.) above the minimum monthly average. In response to the low water supplies, Plan 1958-D is specifying lower than average outflows. Lake St. Lawrence levels were near the upper limit due to the relatively low outflows; Iroquois Dam's gates were partially closed on July 5 to reduce the water levels. The below-average Lake Ontario outflows, and below average flows from the Ottawa River and other tributaries, are causing the levels of Lac St. Louis and the St. Lawrence River in the Montreal area to be 50 and 66 cm below average respectively. If average precipitation and evaporation occur over the coming weeks, the Board expects Lake Ontario and the St. Lawrence River to stay close to their current level for much of the summer. There is an extremely small risk this year of Lake Ontario exceeding its upper or lower level limits as prescribed in the Orders of Approval for the operation of the system.

Currently, there are 4.7 cm (1.9 in.) of water stored on Lake Ontario. The long-term strategy is to maintain this to assist with critical needs later in the year should they arise. The Board, in conjunction with its staff, is watching the situation carefully and is prepared to take quick action if required. The Board will meet in August to assess the situation, or earlier if there is a significant change in conditions.

Lake Ontario Outflow Strategy released August 18, 2006

The International St. Lawrence River Board of Control (Board), after a review of conditions in the Lake Ontario-St. Lawrence system, announced today its intent to continue to follow the outflows called for by Plan 1958-D. The Board has been following Plan 1958-D outflows since

March of this year except for small deviations to assist interests with critical needs. Several factors contributed to the current decision to remain on Plan flow.

July was a very wet month on the Lake Ontario basin. This caused the water level on the lake to rise by 11 centimeters (4.3 in.) during the month. On average the lake declines by 9 cm (3.5 in.) in July. Currently the levels are about 9 cm (3.5 in.) above average, down a little from last week. It is likely that the lake level reached its peak for the year last week. The current level is well within the mandated range specified in the criteria for the regulation of Lake Ontario levels.

The level of Lake St Lawrence has also come down from its high of last week due to the decline in Lake Ontario levels and an increase in the outflow from the lake. With the decline in Lake St Lawrence levels, the gates of the Iroquois Dam, which were in use from July 5th through to the 28th to reduce the high levels, have been returned to the fully open position.

Waters levels in the Montreal area rose late last week due mainly to local rains. The levels were above average for one or two days but have since receded somewhat. The level at Pointe Claire on Lake St. Louis is not expected to fall to the Seaway 'alert level', the level at which commercial ships begin to be impacted by low levels, at least not for the next couple of months or so. The water level in Montreal Harbour is about 0.7 m (2.1 ft.) above chart datum, but is receding. It is not expected to drop to chart datum in the near future, but there is a good chance that it will reach datum, at least briefly, before the end of the year.

The forecast for Lake Ontario levels indicates near normal levels for the next several months. There is almost no chance this year that Lake Ontario levels will exceed the upper or lower level limits as prescribed in the Orders of Approval for the operation of the system. The risk of low levels in the Montreal area this summer and fall has been reduced with the wetter conditions in July.

Currently, there are 4.6 cm (1.8 in.) of water stored on Lake Ontario. The Board's long-term strategy is to maintain this water to assist with any critical needs later in the year and make other minor deviations from Plan flow to assist with other critical water level situations that may arise.

Lake Ontario Outflow Strategy released September 15, 2006

The International St. Lawrence River Board of Control (Board) has decided to continue to maintain outflows from Lake Ontario in accordance with those prescribed by Regulation Plan 1958-D. The Board noted that basin conditions were little different from those described in its August 18 news release.

This decision will pertain unless short-term over-discharges are needed to meet critical hydropower needs, maintain levels above 20.6 m (67.6 ft.) at Pointe-Claire on Lake St. Louis or allow incoming vessels to reach the Port of Montreal. Any such over-discharges will be limited to no more than 600 cubic metres per second (cms) (21,200 cubic feet per second (cfs)) per day and 300 cms (10,600 cfs) per week.

The Board, in conjunction with its staff, will continue to monitor the situation, and will meet again in about two weeks to re-assess the situation—or earlier if there is a significant change in conditions.

Abbreviations and Terms Used in this Report

actual (data)	the actual recorded value
avg	average
Board	International St. Lawrence River Board of Control (unless otherwise specified)
cfs	cubic feet per second
cm	centimetre(s)
cms	cubic metres per second
Commission	International Joint Commission
computed level, outflow	the level or outflow computed by Regulation Plan 1958-D
deviation (outflow)	a Lake Ontario outflow different from the Plan 1958-D outflow
exceedence probability	the percent of time that the value was exceeded in the past
ft	foot/feet
IJC	International Joint Commission
ISLRBC	International St. Lawrence River Board of Control
in	inche(s)
Lake level	Lake Ontario (unless otherwise specified) water level
LTA	long-term average
m	metres
m ³ /s	cubic metres per second
mm	millimetres
NYPA	New York Power Authority
OAG	the Board's Operations Advisory Group
OPG	Ontario Power Generation
Peaking Plan	hour-to-hour flow changes over the course of a day Regulation Plan 1958-D
Ponding	day-t-day flow changes over the course of a week
pre-project	the levels and outflows that would have occurred had regulation not been undertaken
regulation	management of levels and flows in the Lake Ontario-St. Lawrence River system by physical control of outflows from Lake Ontario
Regulation Plan 1958-D	current plan of regulation for Lake Ontario
Seaway Study Board	the St. Lawrence Seaway (commercial navigation facility) International Lake Ontario-St. Lawrence River Study Board
supply	quantity of water received
tcfs	thousand cubic feet per second