

**International Lake Superior
Board of Control
Semi-Annual Progress Report to the
International Joint Commission
Covering the Period March 30, 2006 to October 3, 2006**



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International Lake Superior Board of Control

Canada

Carr McLeod, Member
Member
David Fay, Secretary

United States

BG Bruce A. Berwick,
John W. Kangas, Secretary

3 October 2006

International Joint Commission
Ottawa, Ontario
Washington, D.C.

Commissioners:

This semi-annual report covers the Board's activities from 30 March to 3 October 2006.

1. Highlights

During the past six months, the water levels of Lakes Superior and Michigan-Huron remained below average and lower than last year.

The Lake Superior outflows were as specified by Regulation Plan 1977-A. Since March, these monthly outflows have been between 75% and 98% of average. Meanwhile, the monthly outflows from Lakes Michigan-Huron ranged from 85% to 93% of average. Water supplies to Lake Superior were below average, with August supplies setting a new record low for the month. Supplies to the Lakes Michigan-Huron basin were also generally below average even though they were a bit above average in May and July.

Ponding by the hydropower entities was restricted on weekends and holidays during April, May and September. The power entities were permitted to conduct ponding operations each weekend and holiday during March, June, July, and August. No concerns related to peaking and ponding were reported to the Board during the period.

Flow measurements were made for the Board from 6 to 15 June at the U.S. Government and Brookfield Power plants, the Compensating Works, and at additional sections along the St. Marys River used for hydraulic modelling. Measurements in the U.S. Government power canal were made to further investigate discrepancies between measured and reported flows. Measurements at the Brookfield Power plant were made to verify flows at discharges much less than the plant's capacity. Investigations at the Compensating Works were performed to refine the calibration of the flow through four gates partially open that is equivalent to the flow with ½ gate open.

The Board held its annual public meeting on the evening of 24 May with sites at Parry Sound ON, Duluth MN and Sault Ste, Marie MI. About 70 members of the public attended at the three sites. Concerns that were raised at the meeting included the impact of low lake levels on boating, access and use of shore properties, wetlands, fish, businesses, and poor water quality. Questions were also asked about the impact of dredging of the St. Clair and Detroit Rivers (both historical deepening and current maintenance dredging). There were also questions about water diversions both into and out of the Great Lakes. Several attendees at the Soo site expressed concern about the potential for large changes in the flows in the St Marys Rapids. Although people were generally pleased with the recent announcement by the Commission that its Upper Lakes Study had commenced, concerns remained regarding the funding and scheduling of the study and how long it might take for any possible remedial works to be built.

2. Monitoring of Hydrologic Conditions

The Board continuously monitors the water levels of Lakes Superior and Michigan-Huron, and the water levels and flows in the St. Marys River. The Regulation Representatives' monthly reports to the Board provide hydrologic assessments and recommendations on the regulation of outflows from Lake Superior. These reports indicate the amount of water available for hydropower purposes, after the requirements for domestic use, navigation, and the fishery (St. Marys Rapids) were met.

Tables 1 and 2 list the recent monthly water levels, net basin supplies, and outflows for lakes Superior and Michigan-Huron, respectively. Figure 1 compares the monthly water levels for this period to long-term averages and extremes. Figure 2 shows the monthly precipitation over the lakes Superior and Michigan-Huron basins. Figure 3 shows the monthly net basin supplies for the basins.

Precipitation over the region varied greatly from one month to the next in the reporting period. On both the lakes Superior and Michigan-Huron basins, precipitation was near average in March and September, below average in April, June and August, and above average in May and July. For the past seven months as a whole, precipitation on the Lake Superior basin was 89% of average. The net basin water supplies to Lake Superior, which are the net effect of precipitation, evaporation and runoff to the lake, were below average in every month of the reporting period. August net basin supplies set a new record low for the month. On the whole, the March through September net basin supplies to Lake Superior would be expected to be exceeded more than 99% of the time.

Lake Superior's water levels rose above chart datum (183.2 m or 601.1 ft.) on 11 May. It remained above chart datum until September 13 and ended the period 3 cm (1 in.) below chart datum. Its levels over the past seven months ranged from 11 to 35 cm (4 to 14 in.) below average. On 3 October, its level was at elevation 183.17 m (600.95 ft.), which was 37 cm (15 in.) below average and 14 cm (6 in.) lower than last year. The level of Lake Superior has been consistently below average since April of 1998, which is the longest

sustained period of below-average monthly levels in the 1918-2005 record.

On the Lakes Michigan-Huron basin in the past seven months the total precipitation was 100% of average according to provisional data. Net basin water supplies to Lakes Michigan-Huron were below average in April, June, August, and September, near average in March and a bit above average in May and July. On the whole, the March through September net basin supplies to Lakes Michigan-Huron were below average and would be expected to be exceeded about 88% of the time.

Monthly mean Lake Michigan-Huron levels ranged from 40 to 49 cm (16 to 19 in.) below long-term averages. Water levels rose above chart datum (176.00 m or 577.4 ft.) on 11 April. On 3 October, Lakes Michigan-Huron were at elevation 176.02 m (577.49 ft.), 47 cm (19 in.) below average, 4 cm (2 in.) lower than one year ago, and 2 cm (1 in.) above its chart datum level. The level of Lakes Michigan-Huron has been below average since January of 1999, the second longest period on record of consistently below average levels.

3. Regulation of the Outflow from Lake Superior

The outflows of Lake Superior were as specified by Regulation Plan 1977-A during the reporting period. Lake Superior outflows were 92% of average over the last seven months, ranging from 1,770 to 2,180 m³/s (65,000 to 77,000 cfs). Outflows were limited by Criterion (c) of the Orders each month with the exception of May and September.

The gate setting at the Compensating Works supplying the main portion of the St. Marys Rapids was at an equivalent one-half gate open, four gates set at 25 cm (10”), for the past seven months, except during flow measurement trials from 7 June to 12 June. From 7 to 9 June, outflows were measured with four gates set at 20 to 28 cm (8 to 11 inches) open and, from 9 to 12 June, with one gate set half open (Gate 9 set to a 109 cm (43-inch) opening). The gates were returned to their usual setting with the four centre gates set at 25 cm (10-inch) openings on 12 June. These flow measurements had minimal impact on the water levels of lakes Superior and Michigan-Huron. Gate 1, which supplies water to the Fishery Remedial Works, remained set at 15 m³/s (530 cfs) throughout the period.

A series of scheduled maintenance outages and flow measurements were undertaken as detailed in sections 6 and 7. Coordination of outflows permitted the power entities to pass almost all of their combined monthly flow allotments, such that the outages had minimal effects on total outflows and lake levels. When units were taken off-line water levels at U.S. Slip gauge fell below chart datum, but quickly rose again as the idled units were brought back on-line.

Intermittent maintenance work and electrical faults at the U.S. Government Plant (USGP) also necessitated flow reductions in April, May, June, and August. These flow reductions were easily offset within each month by increasing output at the Edison Sault Electric Company (ESEC) plant.

A scheduled flow reduction was necessary for about two hours on the morning of 23 June to facilitate maintenance work in the ESEC power canal. Further flow reductions were necessary for about eight hours each day on 18 and 19 July and for two hours on 26 July to facilitate diving inspections on the ESEC head gates and forebay. These short-term reductions were also easily offset each month.

No problems related to water levels were reported as a result of these flow variations. No ships were reported delayed due to the flow variations.

4. Governing Conditions During the Reporting Period

The monthly mean levels of Lake Superior ranged between 183.12 and 183.31 m (600.8 and 601.4 ft.) during the reporting period, well within the limits of 182.76 and 183.86 m (599.6 and 603.2 ft.) specified in the Commission's Orders of Approval.

During the reporting period, the daily mean water levels in the lower St. Marys River at the U.S. Slip gauge downstream of the U.S. Locks, varied between 176.05 and 176.55 m (577.6 and 579.2 ft). Therefore, the requirement for maintaining the level below 177.94 m (583.8 ft.) was satisfied. The daily mean U.S. Slip level was below chart datum (176.39 m or 578.71 ft.) for 95 of the 188 days during the reporting period.

5. Inspection and Repairs at the Compensating Works

Ongoing routine maintenance and inspections of the Compensating Works were undertaken in the past six months. The structure is generally in good condition. A detailed 5-year inspection of both the Canadian and U.S. portions of the structure was completed in May 2005. Copies of the inspection report for the Canadian side of the structure were filed with the Board by Brookfield Power, while the report on the U.S. portion is being finalized. An outline of the anticipated work required during Brookfield Power's major repainting and refurbishment program scheduled for 2007 to 2010 was filed with the Board in April 2006. Canadian and U.S. work plan summaries were included as Annex A in the Spring 2006 Semi-Annual Progress Report.

6. Repairs and Maintenance at the Hydropower Facilities

a. U.S. Government Hydropower Plant

U.S. Government Plant generators were out-of-service at various times during the reporting period for routine testing, maintenance and repair. Unit 3A was out of service for 101 hours between 24 and 28 April and again for two hours on 2 May for testing. Between 2 and 5 May Units 1, 2, 3, and 3A were off-line a total of 39.9 hours for relay testing and exciter checks. Unit 2 was off-line 20 and 21 May for 12.75 hours due to an electrical fault. Unit 1 was off-line 20 May through 1 July for 62.5 hours to diagnose and repair an

electrical fault. On 10 June, Units 1, 2, 3, and 3A were all off-line at the same time for about four hours to facilitate flow measurements at the U. S. Government hydropower plant. From 7 to 18 August, Units 1, 2, 3, 3A and 10 were each off-line separately for a total of about 167 hours for governor maintenance and testing. ESEC was able to use the unused portions of the government plant's allocations during these off-line periods.

Other routine maintenance activities were conducted at the U.S. Government Plant. The main plant and Unit 10 remain in good operating condition.

b. Brookfield Power

A series of scheduled maintenance outages were undertaken at the Brookfield Power plant. Unit C1 was shut down from 3 to 7 May, Unit C3 was shut down from 11 to 15 May, and Unit C2 was shut down from 19 to 24 May. Coordination of outflows with ESEC permitted the power entities to pass almost all of their May allotment.

Units are scheduled to be taken off-line on October 28 and 29 to facilitate the annual underwater cable inspection for Lake Superior Power Ltd.

c. Edison Sault Electric Company

Routine maintenance was conducted during the reporting period. A scheduled flow reduction was necessary for about one hour on the morning of 26 June to facilitate maintenance work in the ESEC power canal. Further flow reductions were necessary for about eight hours on 18 and 19 July to facilitate diving inspections on the ESEC head gates and forebay. These reductions were easily offset. The plant remains in good operating condition.

7. Flow Verification Measurements

a. Compensating Works

As previously reported, measurements made during August 2005, with settings ranging from ½ to 7 gates open, indicated that actual flows were slightly greater than those indicated by the long-established rating curve. Of particular interest were the several measurements that suggested that flow at a setting of four gates each open 25 cm (10 inches), the usual gate setting, resulted in flows that were generally greater than the half gate open setting to which it is thought to be equivalent. To better determine the amount to open the four gates in order to be equivalent to the half gate open setting, additional flow measurements were made between 7 and 12 June 2006 with four gates open at settings from 8 to 11 inches (20 to 28 cm) in increments of 1 inch (2.5 cm), as well as one gate set half open (Gate 9 set to a 43-inch (109 cm) opening).

Data from these measurements, as well as those described below that were made at the

hydropower plants, are currently being analyzed. The findings will be reviewed at the Board's spring meeting and presented in the Board's next report.

b. U.S. Government Hydropower Plant

Draft findings, presented to the Board at its 29 March 2006 meeting, indicated that measurements made in June 2005 suggest that the power plant is underreporting the amount of water used by 4.7% to 11.4%. The Board decided to continue using a 9% adjustment until the underlying reasons are resolved. Though the indicated flow through Unit 10 agrees very well with the measured flow, there continued to be a discrepancy through the main powerhouse. As part of the June 2006 flow measurement program, on the morning of June 10, all units at the U.S. Government Plant were shut down for approximately four hours for flow measurements aimed at determining whether there may be flow bypassing the main plant. Unit 10 remained in service during this period.

c. Brookfield Power

Measurements made in June 2005 and presented to the Board at its 29 March 2006 meeting, indicate that the Brookfield Power plant's reported discharges fall within an acceptable +/- 5% of all measurements. However, all measurements made were during discharges near the plant's capacity. Further measurements were recommended by the Board in order to check how well reported flows compare to those measured at discharges below full plant capacity.

Measurements were again made this spring, on the afternoon of 6 June, while the plant was operating near capacity with all three turbines in operation. Measurements at low flows were made on the afternoon of 7 June with discharge through just one unit (C2) rather than the usual three. On 8 June, measurements were made with discharge through just two units (C1 and C2).

d. Edison Sault Electric Company

As previously reported, June 2005 verification measurements indicated that the March 2005 revisions to the flow reporting software at the plant resulted in reported flows within an acceptable +/- 5% of measured flows. No further measurements are recommended until the next cycle mandated by the Board in 2010.

8. Water Usage in the St. Marys River

Table 3 (Table 4 in cubic feet per second) lists the distribution of outflows from Lake Superior for January 2005 to September 2006. Water uses are divided into four categories: domestic, navigation, fishery, and hydropower. According to the 1979 Supplementary Order, after the first three water requirements are satisfied, the remaining outflow is shared equally between the U.S. and Canada for hydropower purposes. Any remainder, beyond

the flow capacity of the hydropower plants, is discharged through the Compensating Works into the St. Marys Rapids.

As shown in the tables, water used for domestic and industrial purposes ranged from 9 to 11 m³/s (318 to 389 cfs), which is roughly 0.5% of the total monthly outflow.

The flow through the U.S. and Canadian locks depends on traffic volume and varied from 4 to 18 m³/s (141 to 636 cfs). As a percentage of the total river flow, water allocated for navigation varies seasonally from 0.1% (when the locks are closed for the winter) to 0.8% in the busiest part of the navigation season.

The U.S. locks opened, as scheduled, on 25 March. The Canadian lock opened, as scheduled, on 15 May. The Canadian lock was closed for several days from 17 and 25 May due to failure of a turnbuckle and shaft and from 4 to 7 July due to failure of the lock's water discharge system.

In accordance with the Commission's Orders to fulfill the fishery needs in the main rapids, a minimum gate setting of one-half gate open is required at all times at the Compensating Works. A setting equivalent to one-half gate open for the main rapids is maintained by having four gates partially open to supply the same quantity of water as one gate half open. This spreads the flow more evenly across the main rapids, and is thought to reduce potential damage from ice floes impacting the gate in the winter. In addition, a flow of at least 15 m³/s (530 cfs) is required in the Fishery Remedial Works (through Gate 1). The flow in the St. Marys Rapids, including that through the Fishery Remedial Works, ranged from 99 to 106 m³/s (3,500 to 3,740 cfs) over the last seven months. During a series of flow measurements from 7 to 12 June, the half gate open equivalent setting was varied between four gates partially open from 8 to 11 inches (20 to 28 cm) and one gate open 43 inches (109 cm) in the main rapids. Gate No. 1 remained set at 15 m³/s (530 cfs).

The hydropower plants used an average of 1,860 m³/s (65,700 cfs) from March to September 2006 for electric power production. The allocation for this period averaged 1,859 m³/s (65,600 cfs). Usages at each plant are shown in Tables 3 and 4.

9. Long Lac and Ogoki Diversions

Ontario Power Generation (OPG) continued to provide the Board with information on the operations of the Long Lac and Ogoki Diversions. The Ogoki Diversion into Lake Nipigon (which flows into Lake Superior) averaged 151 m³/s (5,330 cfs) and the Long Lac Diversion averaged 37.8 m³/s (1,330 cfs) from March through August. Combined, these diversions were about 112 % of average for the period 1944-2005.

Since 1999, a continuous flow of at least 2 m³/s (70 cfs) is maintained during the summer (mid-May through about Labour Day) from the north outlet of Long Lake. This agreement between OPG and the local First Nations provides water for environmental enhancement of

the Kenogami River, and reduces the amount diverted to Lake Superior. An additional average discharge of 38.7 m³/s (1,370 cfs) was spilled northward from Long Lake during in May.

10. Peaking and Ponding Operations at Hydropower Plants

During the reporting period, the power entities undertook peaking and ponding operations under the supervision of the Board. These flow variations enable the hydropower plants to better match their electricity production with demand. However, these variations cause the water levels in the St. Marys River downstream of the plants to fluctuate more than they otherwise would. At the U.S. Slip site on the lower river weekend minimum levels, which are those affected by ponding operations, were expected to be below chart datum in April, May, and September. As a result, the hydropower companies were required to suspend ponding operations for these three months.

Figure 4 compares the hourly Lake Superior outflow and the hourly levels at U.S. Slip on the lower St. Marys River.

No concerns related to peaking and ponding were reported to the Board during the period.

With water levels on the lower river and Lake Superior outflows below average in recent years, the fluctuations have been a concern for commercial navigation. As previously reported, a navigation interest proposed that the threshold level for peaking and ponding decisions could be lowered a foot (30 cm) following completion of dredging in the lower St. Marys River. A letter was mailed 28 October 2004 seeking public comment on changing the threshold. Concerns were expressed by one natural resources agency regarding possible effects on aquatic habitat and species using the river. The Board received an analysis (commissioned by ESEC) of some of these concerns from Lake Superior State University in August 2005. This was forwarded to the agency, and a response was received in November 2005.

The Board submitted an update report on 23 January 2006, noting that the interim guidelines and the mechanism for dissemination of information to the public appeared to be working well, but continuing concerns had been raised by some environmental interests. The Board recommended that, pending resolution of environmental issues raised, the issue of setting a new peaking and ponding decision threshold level be deferred. On 17 March 2006, the IJC approved continued peaking and ponding operations for an indefinite period under the Board's supervision. The Board shall provide summaries of peaking and ponding in its semi-annual reports. Guidelines are to be examined on a five year basis by the Board, starting with the last year of the Upper Lakes Study or 2010, whichever comes first.

At its October 3 meeting the Board revisited the issue regarding the lowering of the threshold level at U.S. Slip used to suspend weekend ponding operations. The Board agreed to seek a report from a recognized scientific expert on the significance of the effects

on the aquatic environment of the peaking and ponding operations including the effects of a change in the threshold level.

To continue to provide timely information to the users, the Corps distributes monthly notices during the shipping season (March through January) on expected Lake Superior outflows, and a schedule of flow variations at the hydropower plants.

11. Annual Meeting with the Public and Public Information

The Board held its annual meeting with the public on the evening of 24 May. A multi-site format with a portion joined by teleconference was used again in an effort to gain feedback from and encourage interaction among people across the upper Great Lakes. Three sites were linked simultaneously during this event: Parry Sound, Ontario; Duluth, Minnesota; and Sault Ste. Marie, Michigan. A total of about 70 members of the public and the media, plus Board and an IJC representative, were in attendance at the three locations (nine in Sault Ste. Marie, six in Duluth, and about 55 in Parry Sound). A similar presentation was given at each site that described the IJC, the Board, the regulatory structures, the regulation plan, and the current and expected water levels. The meetings were then opened for public comment, questions, and concerns to be shared with the other sites. The sites were then linked by audio conference call, with Canadian Member, Carr McLeod, chairing. Each site was asked to share its comments and concerns.

The attendees remained generally displeased with the below average water levels. Concerns included the impact of low lake levels on boating, access and use of shore properties, wetlands, fish, businesses, and poor water quality. Questions were raised about the impact of dredging of the St. Clair and Detroit Rivers (both historical deepening and current maintenance dredging). There were also questions about water diversions both into and out of the Great Lakes. Several attendees at the Soo site expressed concern about the potential for large changes in the flows in the St Marys Rapids caused by any changes from a one-half gate open setting as might be prescribed by Plan 1977-A. Attendees in Parry Sound expressed concern about the perceived lack of action being taken to address the findings of the Georgian Bay Association sponsored report on potential flow capacity increases in the St. Clair River. Although people were generally pleased with the recent announcement by the Commission that its Upper Lakes Study had commenced, concerns remained regarding the funding and scheduling of the study and how long it might take for any possible remedial works to be built. One participant called on the IJC to create a new board to monitor activities that could affect levels of Lake Huron.

Most attendees expressed their appreciation for the Board's multi-site meetings, and many offered suggestions on how these could be improved in the future. Due to the Board's limited staff, only three sites were able to be staffed for these meetings. Several people have recently voiced concerns that holding meetings at just three locations across such a large geographical area limits the number of people and groups able to contribute, and interest groups throughout the basin should be given equal opportunity to attend. A

Milwaukee area site was recently suggested by a Wisconsin public interest group. The Board is considering ways to allow broader geographic participation.

The date and location of its next meeting with the public will be set by the Board at its spring business meeting.

The Board continues to issue, at the beginning of each month, news releases informing the public about Lake Superior regulation and water level conditions. The Board provides monthly media releases and hydrologic update information to the Commission to maintain a Board web site. Content includes information on Board members and responsibilities as well as news releases, semi-annual reports, meeting minutes and hydrologic data summaries. In addition, in support of the Board and the Commission, the Detroit District Corps of Engineers maintains additional technical information on its own Board Web site.

12. Sea Lamprey Control

The Great Lakes Fishery Commission (GLFC) and the Sea Lamprey Control Centre (SLCC) did not request flow adjustments or other assistance from the Board to carry out its sea lamprey control program during the last six months. The Board remains available to assist the GLFC and SLCC on request.

The Board continues to keep the GLFC, SLCC, U.S. Fish and Wildlife Service (USFWS), Michigan Department of Natural Resources (MDNR), and others advised of expected upcoming regulation decisions regarding gate and flow changes through news releases and Web postings. Efforts will be made to work with these agencies should future gate and flow changes be expected to adversely affect sea lamprey control programs.

ESEC, USACE's Soo Area Office, and Brookfield Power continue to cooperate with the USFWS, GLFC, and SLCC in coordinating installation of sea lamprey traps in their tailraces.

13. Related Items for Interest

Status reports on the following items are provided to keep the Commission informed.

a. Upper Lakes Study

On 23 May 2006, the Commission announced it was initiating the Upper Lakes Study. The Commission is expected to soon announce the appointment of a binational study board and public advisory group. The Commission has secured funding from the governments of the United States and Canada to initiate the study. The study is expected to take five years to complete and cost US\$14.6 million, split between Canada and the United States.

The ULS Website is: <http://www.ijc.org/en/activities/upperlakes/upperlakes.htm>

The Board recognizes the need to coordinate its public communication activities with the

Upper Lakes Study Board to avoid possible confusion of the roles and responsibilities of the two Boards by stakeholders.

b. Great Lakes / St. Lawrence Seaway Study

Work continues on the Great Lakes / St Lawrence Seaway Study. This binational Study, being co-managed by Transport Canada and the U.S. Army Corps of Engineers, and being overseen by a Steering Committee consisting of several U.S. and Canadian agencies, is looking at the engineering aspects and cost of maintaining the present navigation system over the next 50 years. The Study is also looking at the implication this has on the region's economy and environment. No expansion of locks or connecting channel size is being considered. Engineering investigations of the locks on the system have been completed, and the analysis of the infrastructure has resulted in final criticality rankings of various components in order to focus more detailed reliability analyses on the most critical components. FY06 funding is being used to complete engineering/economic models and integration of results between the various models. Traffic forecasts for existing bulk commodities have been completed, and an ongoing U. S. Department of Transportation Maritime Administration study of potential new vessels/cargos will be used to supplement these forecasts for any new commodity movements (such as containers, or short sea shipping initiatives, etc.) that might use the system in the future. U.S. and Canadian environmental resources are being integrated, leading to a regional assessment of the current condition of key resources, identification of system-wide issues which continue to affect these conditions, and assessment of navigation related impacts associated with continuing operation and maintenance of the navigation system. The study team will utilize these tools to develop operation and maintenance scenarios that would ensure the continued safe, reliable, and environmentally sustainable operation of the navigation system for the next fifty years. A draft report will be generated this fall which will summarize the preliminary results and be presented to the study Steering Committee, leading to a final report next spring. Availability of U.S. funding for the study moving forward into FY07 may impact the timely completion of these efforts.

c. Lock Replacement at Sault Ste. Marie, Michigan

A new "Poe sized" lock is proposed to replace the existing Davis and Sabin Locks at the Soo Locks complex at Sault Ste. Marie, MI. The purpose of this project is to provide for more efficient movement of waterborne commerce. The Assistant Secretary of the Army for Civil Works (ASA(CW)) has reviewed the Limited Re-evaluation Report (LRR). The revised LRR that includes responses to the ASA(CW) comments was forwarded to Headquarters USACE on 30 September 2005. They are currently awaiting input from the Departments of Commerce, Transportation, and Homeland Security before returning it to the ASA(CW) for approval. It is anticipated that approval of the LRR will take place in FY07. Execution of the Project Cooperation Agreement with the non-Federal sponsor, the Great Lakes Commission would allow LRR approval in FY 07. Preliminary design efforts on the channel deepening, guide wall and lock chamber continues with provided funding. The Board will continue to monitor the project progress and update the Commission as appropriate in future reports.

14. Board Membership and Meetings

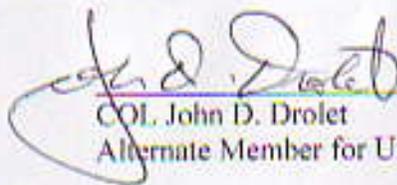
There was no change in the Board membership during the reporting period. U.S. Alternate Member COL Gary E. Johnston was replaced by COL John D. Drolet on 30 June. There were several changes among the Board's support staff and associates in recent months, including the U.S. Regulation Representative, On-Site Representatives of both countries, and the ESEC and Brookfield Power liaisons.

The Board held a meeting on 3 October in Niagara Falls, Ontario, with the Canadian member and U.S. alternate member in attendance.

Respectfully submitted,

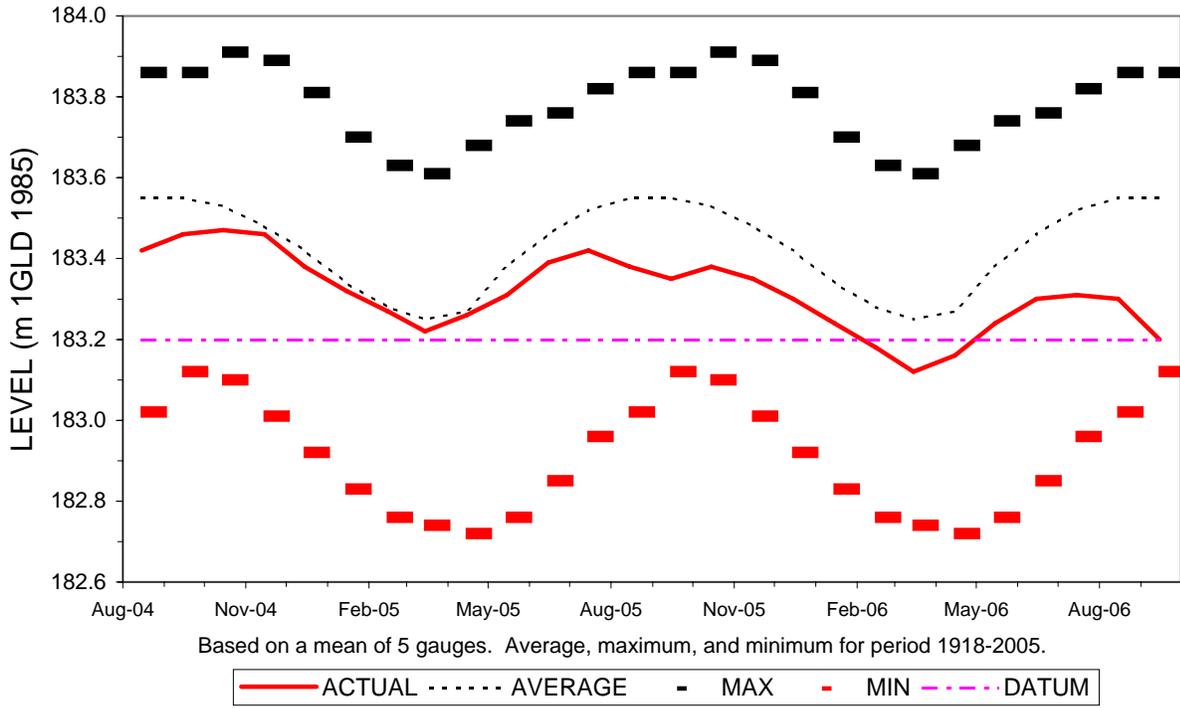


Carr McLeod
Member for Canada



COL. John D. Drolet
Alternate Member for United States

LAKE SUPERIOR MONTHLY WATER LEVELS



LAKES MICHIGAN-HURON MONTHLY WATER LEVELS

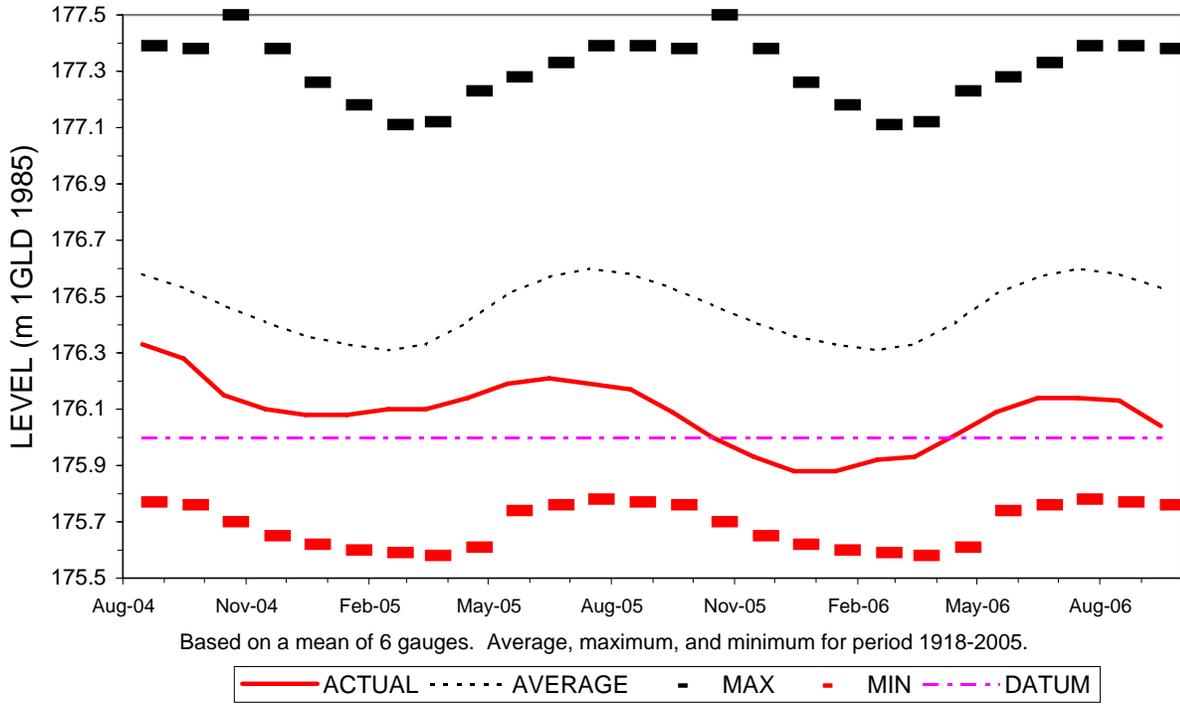
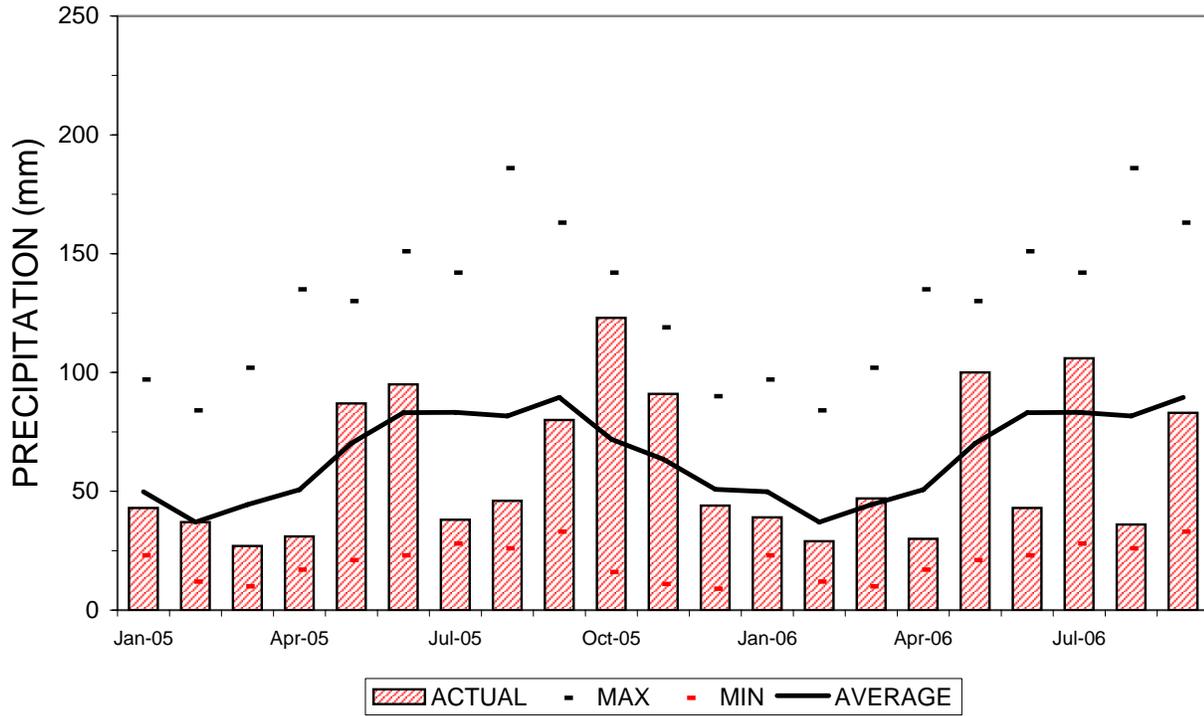
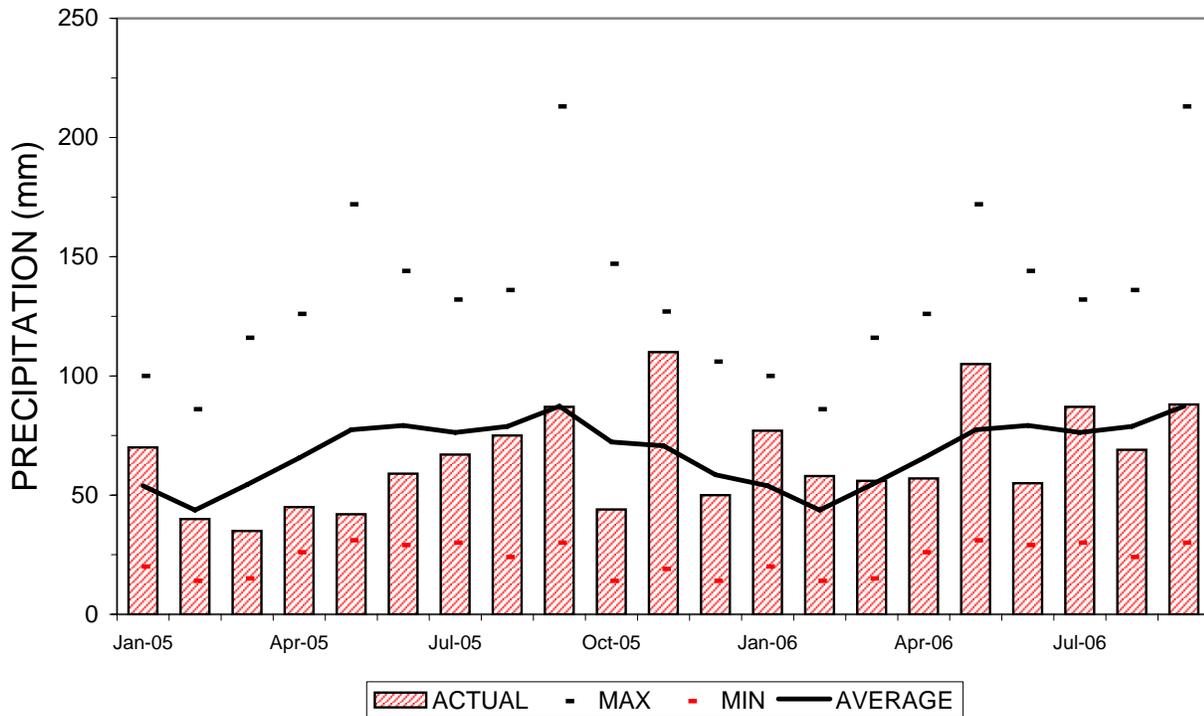


Figure 1

LAKE SUPERIOR MONTHLY PRECIPITATION



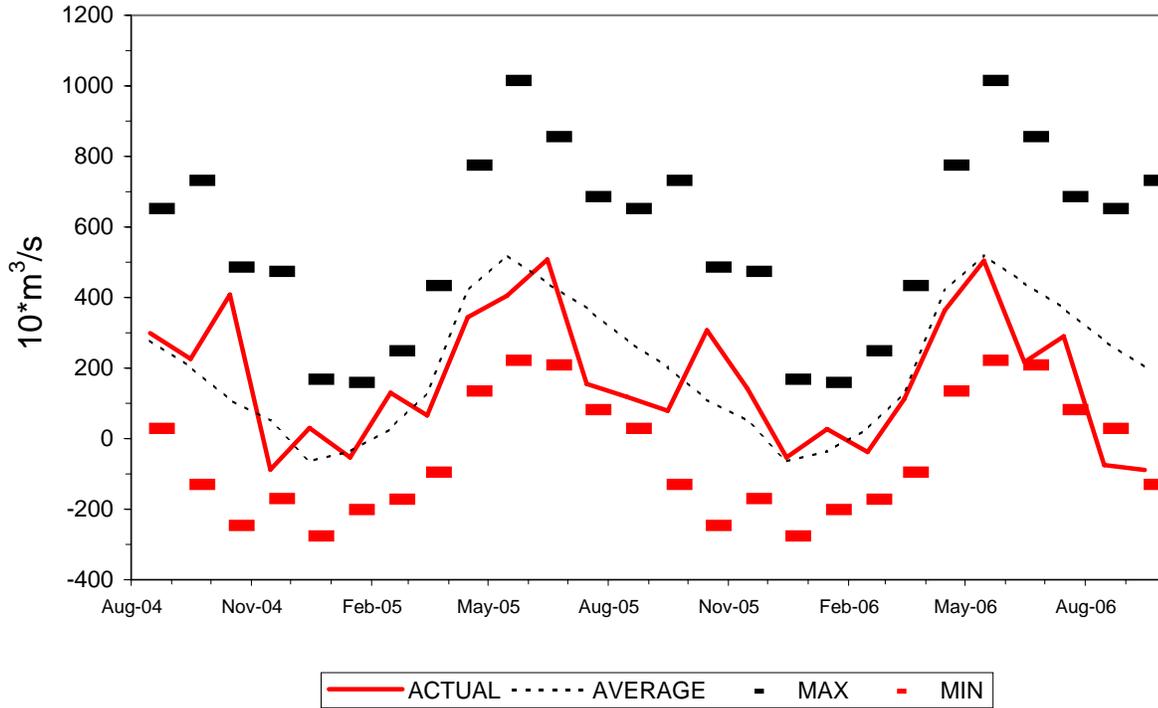
LAKES MICHIGAN-HURON MONTHLY PRECIPITATION



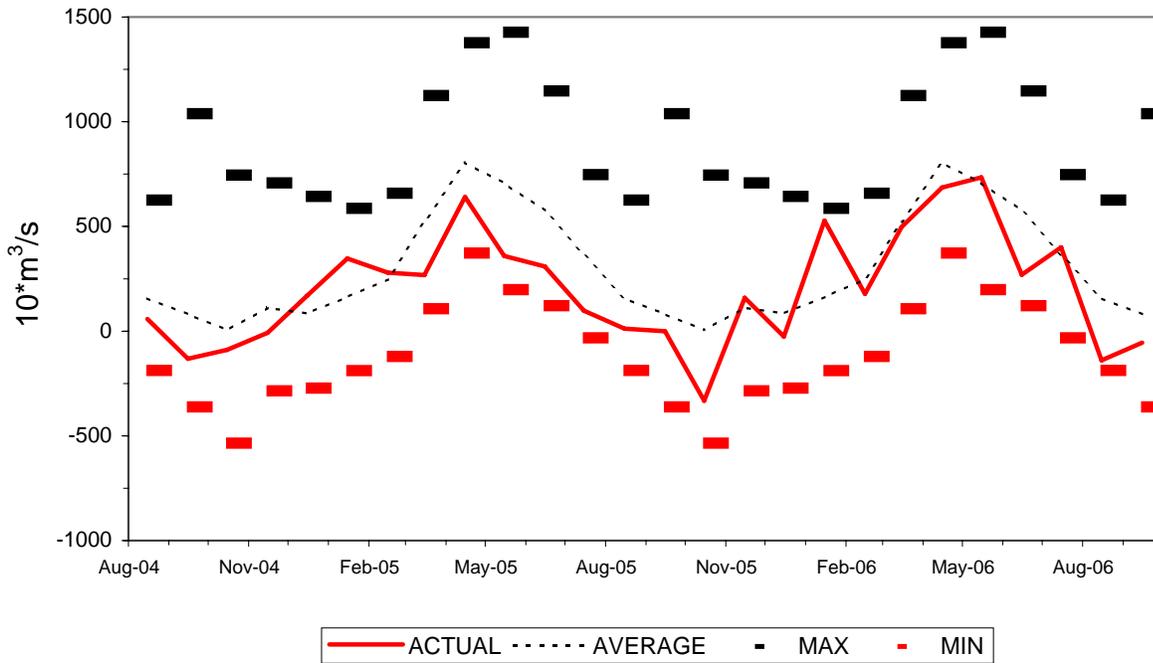
Average, maximum and minimum values based on period of record 1900-2005.

Figure 2

LAKE SUPERIOR MONTHLY NET BASIN SUPPLIES



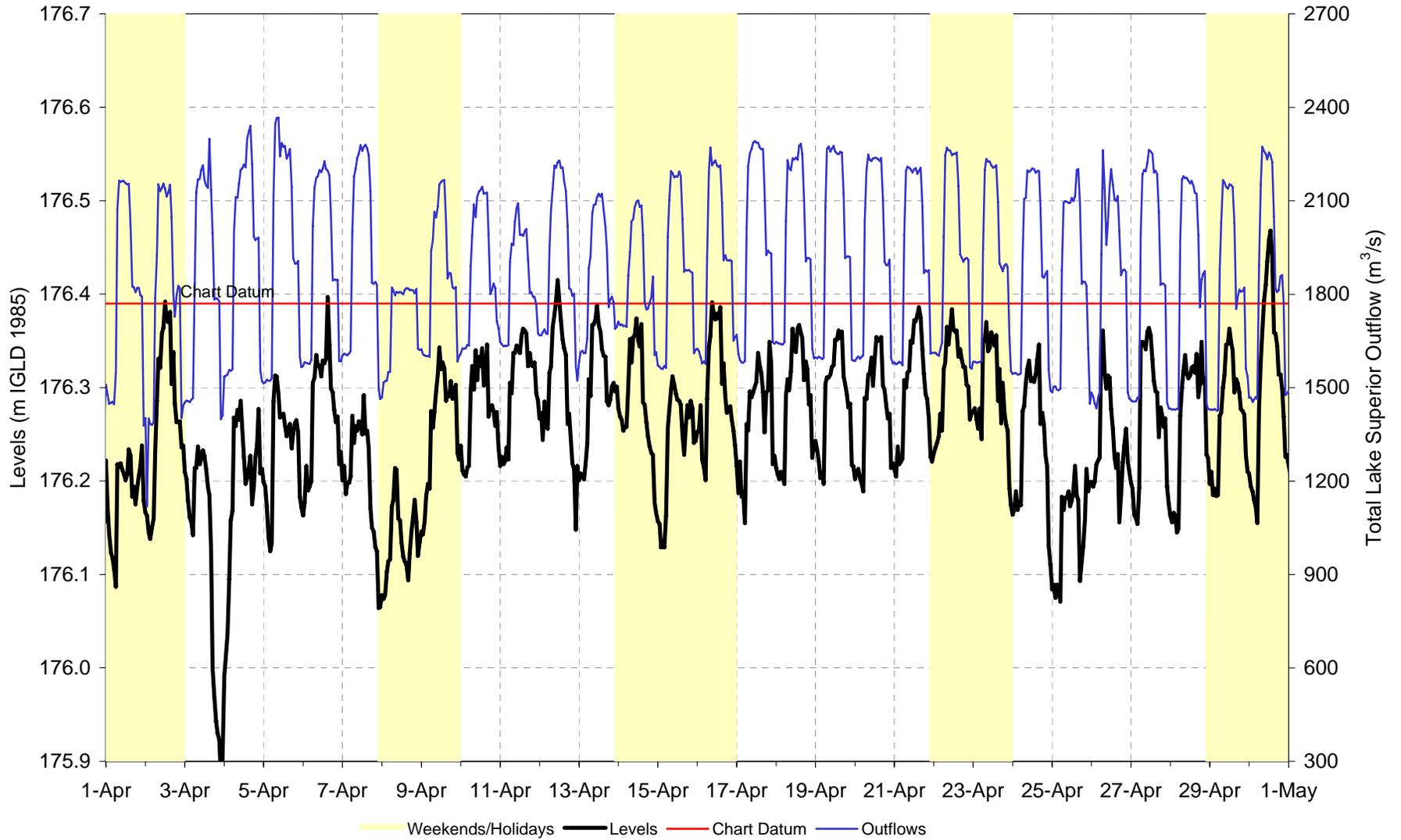
LAKES MICHIGAN-HURON MONTHLY NET BASIN SUPPLIES



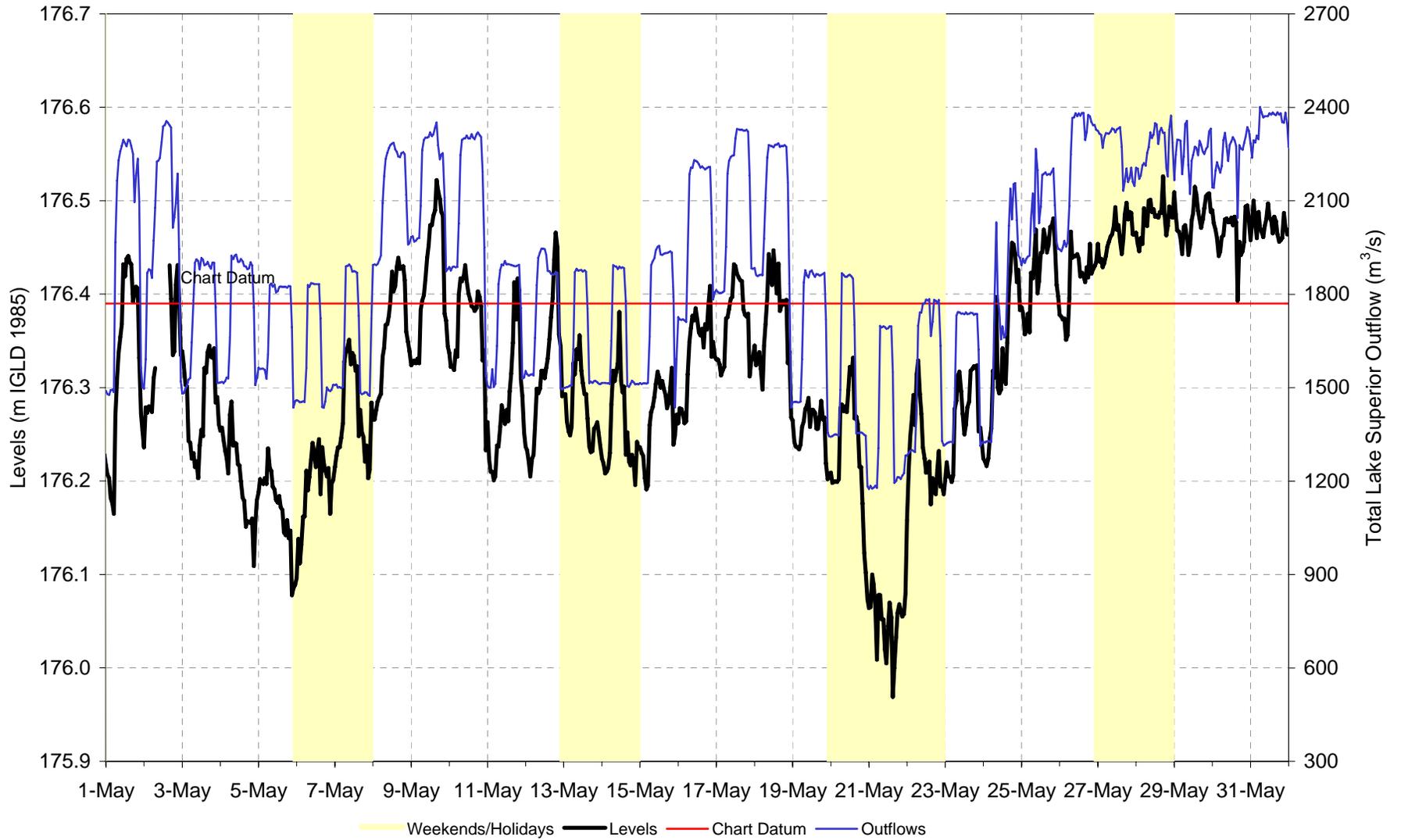
Average, maximum and minimum values based on coordinated period of record 1900-1999.

Figure 3

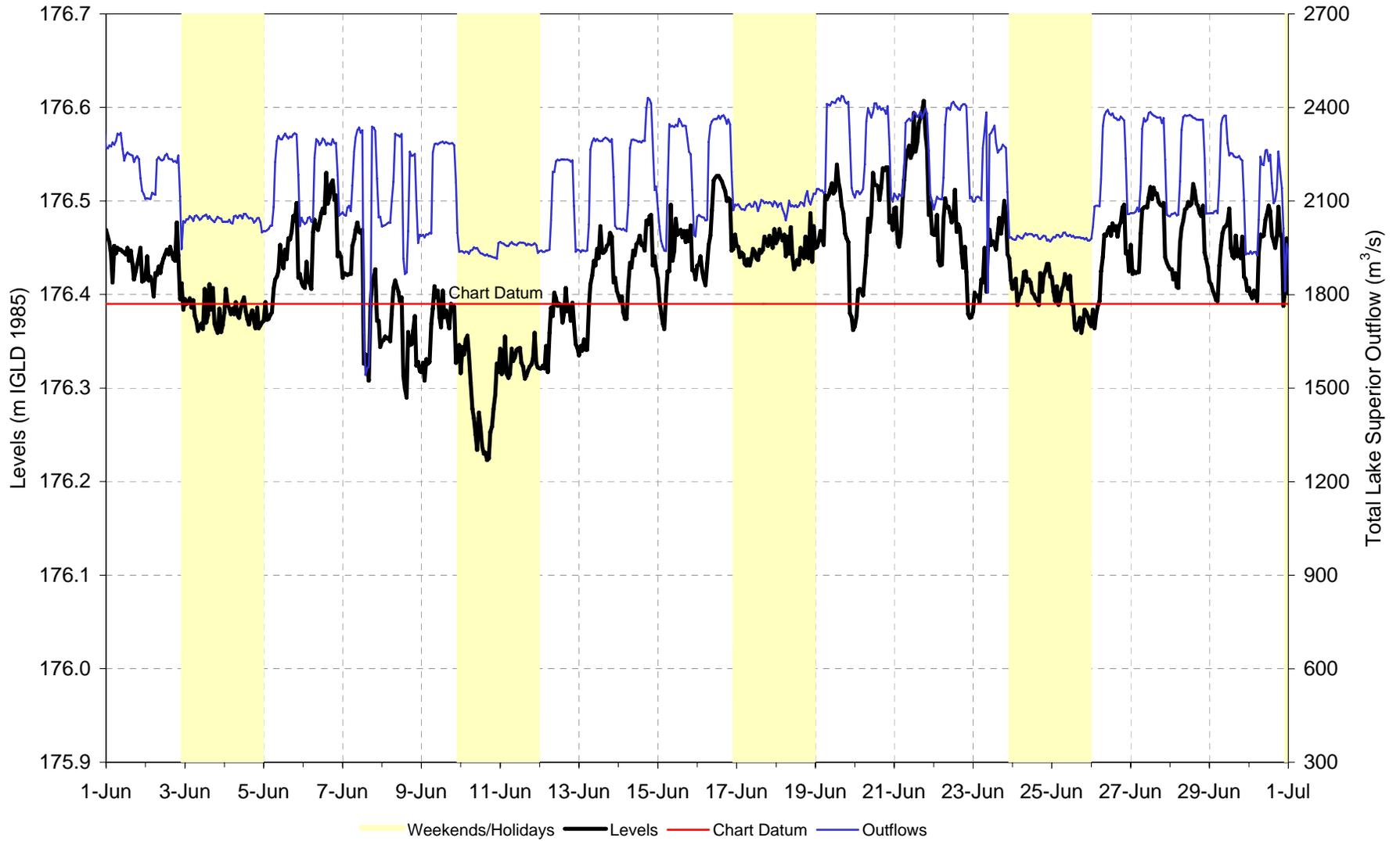
Hourly U.S. Slip Levels & Lake Superior Outflows
Figure 4a - April 2006



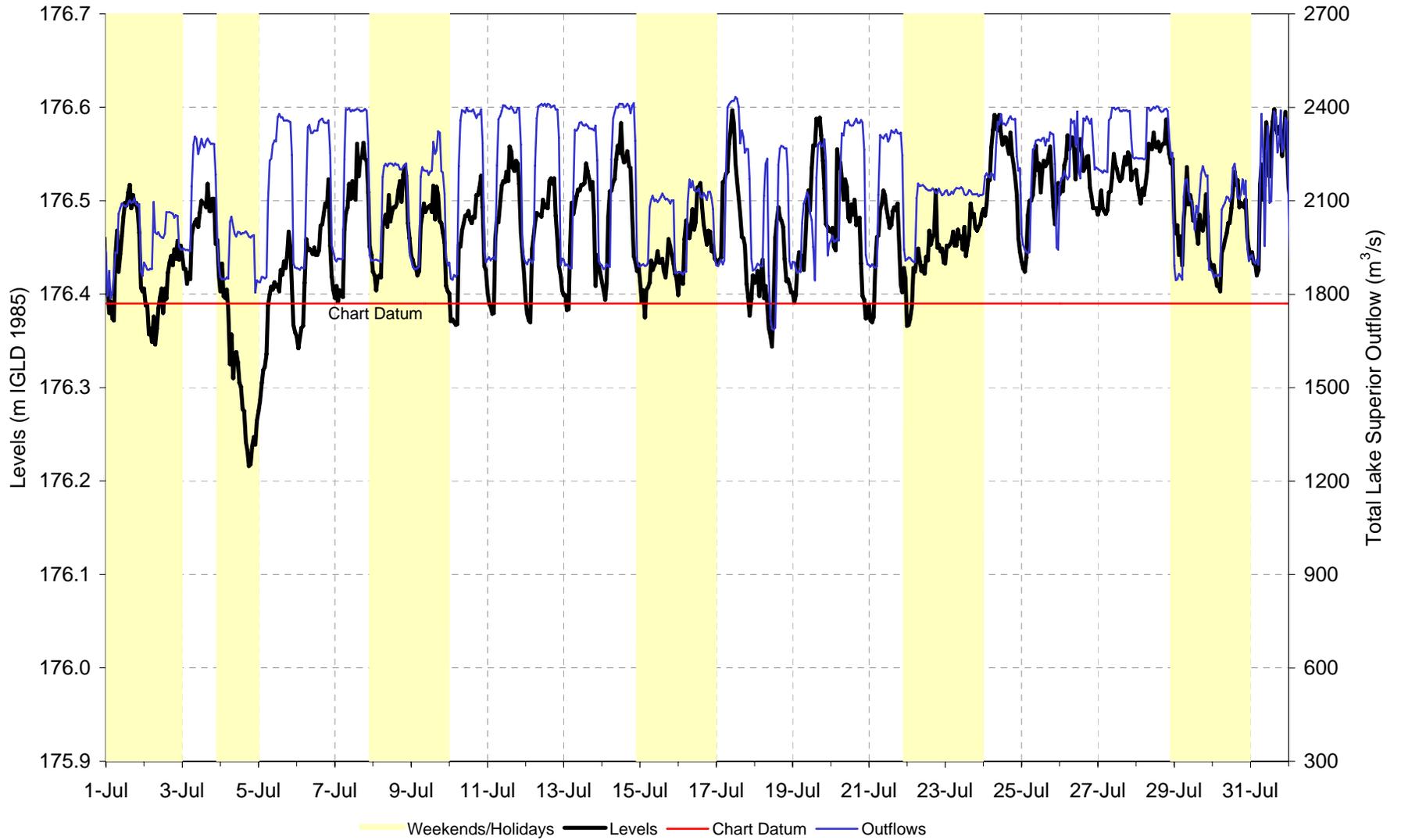
Hourly U.S. Slip Levels & Lake Superior Outflows
Figure 4b - May 2006



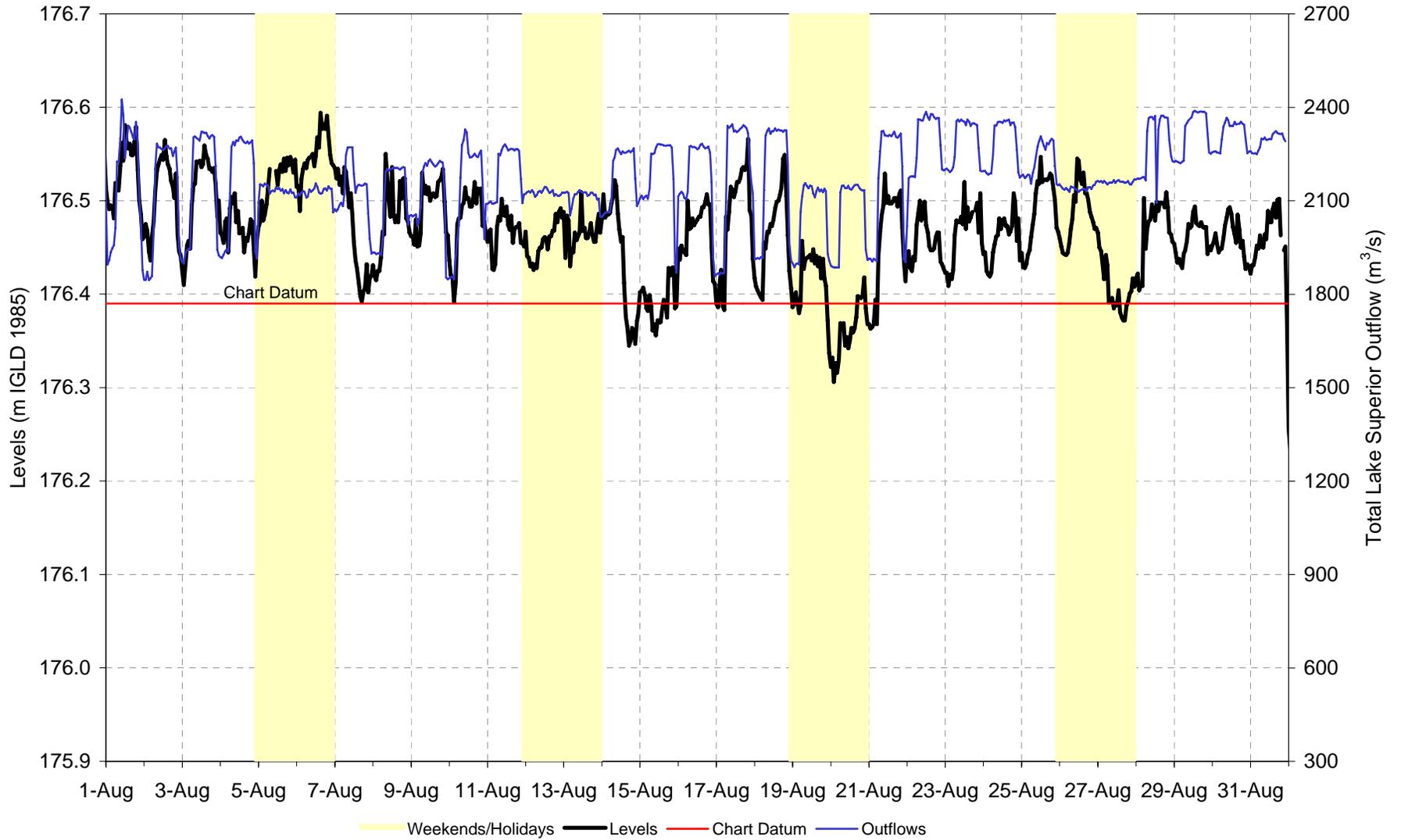
Hourly U.S. Slip Levels & Lake Superior Outflows
Figure 4c - June 2006



Hourly U.S. Slip Levels & Lake Superior Outflows
Figure 4d - July 2006



Hourly U.S. Slip Levels & Lake Superior Outflows
Figure 4e - August 2006



Hourly U.S. Slip Levels & Lake Superior Outflows
Figure 4f - September 2006

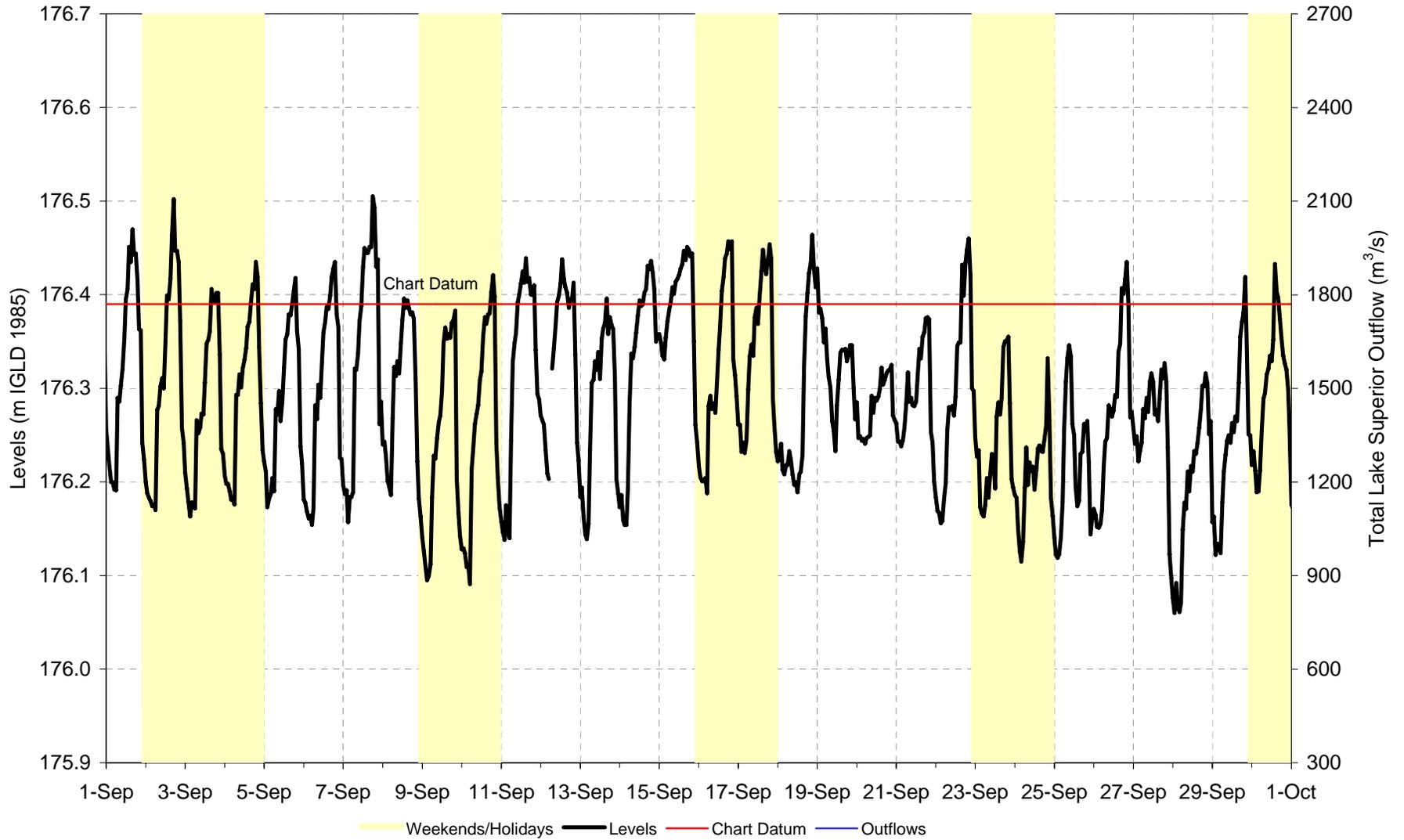


TABLE 1. 2005-2006 Lake Superior Hydrologic Factors

Month	Levels				Net Basin Supplies			Outflows		
	Monthly Mean Recorded ¹		Difference From Average ²		Monthly Mean Recorded		Exceedence Probability ³ (%)	Monthly Mean Recorded		Percent of Average ⁴
	metres	feet	metres	feet	m3/s	tcfs		m3/s	tcfs	
Apr-05	183.26	601.25	-0.01	-0.03	3440	121	69	1990	70	102
May-05	183.31	601.41	-0.07	-0.23	4050	143	74	2140	76	101
Jun-05	183.39	601.67	-0.07	-0.23	5080	179	31	2250	79	102
Jul-05	183.42	601.77	-0.10	-0.33	1550	55	98	3080	109	135
Aug-05	183.38	601.64	-0.17	-0.56	1180	42	91	2620	93	111
Sep-05	183.35	601.54	-0.20	-0.66	790	28	81	2170	77	92
Oct-05	183.38	601.64	-0.15	-0.49	3070	108	8	1900	67	83
Nov-05	183.35	601.54	-0.13	-0.43	1420	50	21	2160	76	96
Dec-05	183.30	601.38	-0.12	-0.39	-530	-19	44	2110	75	102
Jan-06	183.24	601.18	-0.10	-0.33	270	10	18	1970	70	101
Feb-06	183.18	600.98	-0.10	-0.33	-380	-13	80	1940	69	102
Mar-06	183.12	600.79	-0.13	-0.43	1120	40	53	1840	65	98
Apr-06	183.16	600.92	-0.11	-0.36	3640	129	64	1890	67	97
May-06	183.24	601.18	-0.14	-0.46	5040	178	52	1910	67	90
Jun-06	183.30	601.38	-0.16	-0.52	2170	77	95	2150	76	98
Jul-06	183.31	601.41	-0.21	-0.69	2900	102	74	2140	76	94
Aug-06	183.30	601.38	-0.25	-0.82	-750	-26	>99 **	2180	77	92
Sep-06 *	183.20	601.05	-0.35	-1.15	-890	-31	98	1770	63	75

Notes: m3/s = cubic metres per second tcfs = 1000 cubic feet per second

¹ Water Levels are a mean of five gauges on Lake Superior, IGLD 1985

² Average levels are for period 1918-2005, based on a mean of five gauges. Differences computed as metres and then converted to feet.

³ Exceedence probabilities are based on the period 1900-1999.

⁴ Average flows are for the period 1900-1999.

* Provisional estimates

** New record low supply

TABLE 2. 2005-2006 Lakes Michigan-Huron Hydrologic Factors

Month	Levels				Net Basin Supplies			Outflows		
	Monthly Mean Recorded ¹		Difference From Average ²		Monthly Mean Recorded		Exceedence Probability ³ (%)	Monthly Mean Recorded		Percent of Average ⁴
	metres	feet	metres	feet	m3/s	tcfs		m3/s	tcfs	
Apr-05	176.14	577.89	-0.27	-0.89	6410	226	74	4740	167	92
May-05	176.19	578.05	-0.32	-1.05	3590	127	95	4750	168	88
Jun-05	176.21	578.12	-0.36	-1.18	3090	109	93	4800	170	88
Jul-05	176.19	578.05	-0.41	-1.35	980	35	97	4860	172	88
Aug-05	176.17	577.99	-0.41	-1.35	120	4	80	4880	172	88
Sep-05	176.09	577.72	-0.44	-1.44	0	0	64	4760	168	87
Oct-05	176.00	577.43	-0.47	-1.54	-3320	-117	97	4740	167	87
Nov-05	175.93	577.20	-0.48	-1.57	1590	56	37	4550	161	85
Dec-05	175.88	577.03	-0.48	-1.57	-250	-9	71	4450	157	86
Jan-06	175.88	577.03	-0.45	-1.48	5280	186	1	4480	158	99
Feb-06	175.92	577.17	-0.39	-1.28	1780	63	68	4520	160	102
Mar-06	175.93	577.20	-0.40	-1.31	4970	176	52	4490	159	93
Apr-06	176.01	577.46	-0.40	-1.31	6860	242	67	4640	164	90
May-06	176.09	577.72	-0.42	-1.38	7340	259	42	4690	166	87
Jun-06	176.14	577.89	-0.43	-1.41	2690	95	96	4750	168	87
Jul-06	176.14	577.89	-0.46	-1.51	4000	141	39	4710	166	85
Aug-06 *	176.13	577.85	-0.45	-1.48	-1390	-49	96	4720	167	85
Sep-06 *	176.04	577.56	-0.49	-1.61	-550	-19	75	4700	166	85

Notes: m3/s = cubic metres per second tcfs = 1000 cubic feet per second

¹ Water Levels are a mean of six gauges on Lakes Michigan-Huron, IGLD 1985

² Average levels are for period 1918-2005, based on a mean of six gauges. Differences computed as metres and then converted to feet.

³ Exceedence probabilities are based on the period 1900-1999.

⁴ Average flows are for the period 1900-1999.

* Provisional estimates

Table 3

INTERNATIONAL LAKE SUPERIOR BOARD OF CONTROL

MONTHLY DISTRIBUTION OF LAKE SUPERIOR OUTFLOW

OUTFLOW IN m ³ /s THROUGH														
YEAR AND MONTH	POWER CANALS				NAVIGATION CANALS				DOMESTIC USAGE			FISHERY	TOTAL LAKE SUPERIOR OUTFLOW m ³ /s	
	US GOVT HYDRO	EDISON SAULT EL. CO	US TOTAL	GREAT LAKES POWER	TOTAL POWER CANALS	UNITED STATES	CANADA	TOTAL NAV. CANALS	S.STE MARIE US+CAN	ALGOMA STEEL	ST MARYS PAPER	TOTAL DOM. USAGE	STE. MARY'S RAPIDS	
2005														
JAN	386	563	949	1015	1964	4.3	0.0	4	0.3	7.4	0.3	8	101	2077
FEB	402	557	959	957	1916	2.1	0.0	2	0.3	7.8	0.3	8	101	2027
MAR	401	557	958	953	1911	3.8	0.0	4	0.3	7.6	0.3	8	100	2023
APR	388	547	935	933	1868	9.6	0.0	10	0.3	9.8	0.3	10	101	1989
MAY	403	709	1112	905	2017	11.7	0.6	12	0.3	10.5	0.3	11	101	2141
JUN	399	657	1056	1052	2108	13.4	1.7	15	0.4	11.0	0.3	12	112	2247
JUL	394	785	1179	1073	2252	15.5	2.3	18	0.5	11.0	0.3	12	800	3082
AUG	399	771	1170	1069	2239	13.8	2.1	16	0.4	11.5	0.3	12	358	2625
SEP	397	774	1171	876	2047	13.0	1.4	14	0.3	10.8	0.3	11	102	2174
OCT	398	640	1038	734	1772	10.7	0.5	11	0.3	10.6	0.3	11	103	1897
NOV	393	601	994	1042	2036	9.0	0.0	9	0.3	10.3	0.3	11	103	2159
DEC	395	536	931	1059	1990	10.5	0.0	10	0.3	9.7	0.3	10	102	2112
2006														
JAN	400	464	864	985	1849	5.7	0.0	6	0.3	9.4	0.3	10	101	1966
FEB	391	467	858	972	1830	2.8	0.0	3	0.3	9.1	0.3	10	100	1943
MAR	399	453	852	875	1727	4.5	0.0	4	0.3	9.2	0.3	10	99	1840
APR	393	436	829	938	1767	11.1	0.0	11	0.3	9.6	0.3	10	99	1887
MAY	364	563	927	858	1785	12.5	0.3	13	0.3	10.1	0.3	11	101	1910
JUN	393	578	971	1050	2021	13.4	1.8	15	0.4	10.3	0.3	11	106	2153
JUL	400	611	1011	1005	2016	14.4	2.0	16	0.4	8.5	0.3	9	102	2143
AUG	382	643	1025	1031	2056	14.0	2.1	16	0.3	8.8	0.3	9	102	2183
SEP	395	429	824	824	1648	13.0	1.0	14	0.3	8.8	0.3	9	99	1770

NOTE: POWER CANALS COLUMNS INCLUDE FLOWS THROUGH POWER PLANTS AND SPILLWAYS

Table 4

INTERNATIONAL LAKE SUPERIOR BOARD OF CONTROL

MONTHLY DISTRIBUTION OF LAKE SUPERIOR OUTFLOW

YEAR AND MONTH	POWER CANALS					NAVIGATION CANALS				DOMESTIC USAGE			FISHERY	TOTAL LAKE SUPERIOR OUTFLOW CFS
	US GOVT HYDRO	EDISON SAULT EL. CO	US TOTAL	GREAT LAKES POWER	TOTAL POWER CANALS	UNITED STATES	CANADA	TOTAL NAV. CANALS	S.STE MARIE US+CAN	ALGOMA STEEL	ST MARYS PAPER	TOTAL DOM. USAGE	STE. MARY'S RAPIDS	
2005														
JAN	13600	19900	33500	35800	69300	152	0	152	11	261	11	283	3570	73300
FEB	14200	19700	33900	33800	67700	74	0	74	11	275	11	297	3570	71600
MAR	14200	19700	33900	33700	67600	134	0	134	11	268	11	290	3530	71600
APR	13700	19300	33000	32900	65900	339	0	339	11	346	11	368	3570	70200
MAY	14200	25000	39200	32000	71200	413	21	434	11	371	11	393	3570	75600
JUN	14100	23200	37300	37200	74500	473	60	533	14	388	11	413	3960	79400
JUL	13900	27700	41600	37900	79500	547	81	628	18	388	11	417	28300	109000
AUG	14100	27200	41300	37800	79100	487	74	561	14	406	11	431	12600	92700
SEP	14000	27300	41300	30900	72200	459	49	508	11	381	11	403	3600	76700
OCT	14100	22600	36700	25900	62600	378	18	396	11	374	11	396	3640	67000
NOV	13900	21200	35100	36800	71900	318	0	318	11	364	11	386	3640	76200
DEC	13900	18900	32800	37400	70200	371	0	371	11	343	11	365	3600	74500
2006														
JAN	14100	16400	30500	34800	65300	201	0	201	11	332	11	354	3570	69400
FEB	13800	16500	30300	34300	64600	99	0	99	11	321	11	343	3530	68600
MAR	14100	16000	30100	30900	61000	159	0	159	11	325	11	347	3500	65000
APR	13900	15400	29300	33100	62400	392	0	392	11	339	11	361	3500	66700
MAY	12900	19900	32800	30300	63100	441	11	452	11	357	11	379	3570	67500
JUN	13900	20400	34300	37100	71400	473	64	537	14	364	11	389	3740	76100
JUL	14100	21600	35700	35500	71200	509	71	580	14	300	11	325	3600	75700
AUG	13500	22700	36200	36400	72600	494	74	568	11	311	11	333	3600	77100
SEP	13900	15100	29000	29100	58100	459	35	494	11	311	11	333	3500	62400

NOTE: POWER CANALS COLUMNS INCLUDE FLOWS THROUGH POWER PLANTS AND SPILLWAYS

NOTE: Flows for individual users were originally coordinated in m3/s, and are converted here to U.S. customary units (cfs) and rounded to 3 significant figures. Total flow for each category and total Lake Superior flow in this table are computed from the individual flows in cfs.