

**1st PROGRESS REPORT
to the
INTERNATIONAL JOINT COMMISSION
by the
INTERNATIONAL UPPER GREAT LAKES STUDY BOARD**

**Covering the period
7 December 2006 through 23 March 2007**



Back Row (left to right): Richard Bishop, Jonathan Bulkley, James Bredin, Jon Gee, Gene Stakhiv (U.S. Director)
Front Row (left to right): Ted Yuzyk (Canadian Director), Allan Chow, Jim Bruce, Kay Felt. Missing from the photo is Donald Burn.

Photo credit: Syed Moin
Taken at the IJC Windsor Office, March 6, 2007

**23 March 2007
Alexandria, Virginia
Ottawa, Ontario**

INTERNATIONAL UPPER GREAT LAKES STUDY BOARD

Alexandria, Virginia
Ottawa, Ontario
23 March 2007

Commissioners:

The International Upper Great Lakes Study Board submits herein its first Semi-annual Progress Report, covering activities from 7 December 2006 to 23 March 2007.

1. SUMMARY

During the reporting period, initial activities were undertaken by the Study Team in accordance with the Plan of Study. Also, the Study Board was formally established by the Commission by Directive dated 7 February 2007. A number of scopes of work were prepared to begin specific studies as preliminary investigations. Workshops were either held or planned to commence shortly.

The Board and Study team initiatives and accomplishments that took place in the reporting period are summarized below, with more detail provided under Section 2:

- On December 7, 2007, a brief introductory meeting was held in Washington, DC with the Commission to welcome the U.S. and Canadian Directors and Study Managers (Study Team).
- A meeting of the Study Team, U.S. and Canadian Public Information Advisory Group Leads and individuals either involved in International Lake Superior Board of Control activities or in the development of the Plan of Study document was held in Windsor, Ontario on 16-18 January 2007. Several action items were generated as a result of the brain-storming event.
- A Hydrologic Modelers Design Forum was held in Burlington, Ontario on 28 February - 2 March 2007.
- The first Study Board Meeting was held in Windsor, Ontario on 6-7 March 2007.

2. STUDY TEAM AND BOARD ACTIVITIES

During the reporting period, the Study Team began initial activities in anticipation of the full Board involvement in early 2007. At its brain-storming meeting in January, many data gathering activities, literature searches and scoping activities were the addressed, information for which is provided in Section 3.

A hydrologic modelers design forum was held in Burlington in late February at which experts within and outside of the Great Lakes basin were invited to present various approaches toward systemic level and flow management. Such topics as risk and

uncertainty, refining hydrologic parameters, optimization techniques and visualization were covered. A report will be provided to the Study Board for their information. The report will also give an assessment of the approaches with recommendations for further actions.

The Board held its first meeting in Windsor in March at which it was briefed on the two tasks that will be addressed during the Study, improved Lake Superior regulation and the hydraulic concerns regarding St. Clair River outflows. The Board also discussed peer review, communications and the Public Interest Advisory Group, the involvement of First Nations, and future workshops and meetings.

A workshop addressing modeling of the St. Clair River System in terms of erosion, data assessment and the dimensionality of future simulations is planned for March 26-28, 2007 in Ann Arbor, Michigan. Future workshops on climate change, coastal processes and environmental assessments are also planned for the near future. The Board is also looking for opportunities to discuss the Study as well as gather information that can serve the Study through Great Lakes Conferences and other venues.

3. INITIAL STUDIES AND EVALUATIONS BEING CONDUCTED

Water Demand Analysis

In order to improve and reduce the range of uncertainty in existing water balance models, both for water supply and demand components, evaluations of climate variability and potential climate change will be made. Water availability will be modeled through the existing rainfall runoff, evaporation, and over-lake precipitation models developed by the Great Lakes Environmental Research Laboratory (GLERL). Conversely, water demand and consequent consumptive losses for a variety of climatic, socioeconomic, demographic, and water cost variables will be modeled through the use of a multivariate model. The integration of water availability, water demand and consumptive loss modeling will be achieved using a sophisticated water balance model, WEAP (Water Evaluation and Planning). The resulting water balance tool will provide decision makers a better understanding of the basin's complex water balance and the potential impact of climate change on basin water demand, and consequent influence on lake level fluctuations.

Assessment of Key Indicator Species

A preliminary assessment will be made in the form of a Scoping Paper on those key species which could serve as 'indicator species' for determining the effects of lake level regulation, because their life cycles are directly and significantly affected by, or depend on lake level fluctuations.

Assessment of Rare, Threatened and Endangered Species

A preliminary assessment will be made, in the form of a Scoping Paper on those species that are considered rare, threatened and endangered in the Great lakes system. The work will focus on identifying those whose life cycles are directly affected by lake level fluctuations. The work will develop the necessary literature

base of the relationships of species to the hydrologic cycle and effects of variability of lake level fluctuations as inputs into any impact model.

Coastal Erosion Data/ Literature Review

The Study Team requested Christian Stewart Consulting to develop a scoping paper to address issues in the coastal management component of the Plan of Study. The objectives of the this contract was first to consolidate a coastal erosion data/ literature review and approaches to developing erosion/flood damages for the Study; secondly, to evaluate the applicability of the Lake Ontario St. Lawrence Study's Flood and Erosion Prediction System (FEPS) model to selected reaches along Lake Michigan shoreline; and, finally, to develop scoping/ information assessment for developing a FEPS-type model for the Study. The report from this initiative will form the blue print for the coastal zone related work.

Scoping of Sediment Sampling and Video Collection Program

The National Water Research Institute of Environment Canada initiated a scoping of sediment sampling and video taping of the St. Clair River bottom. This will augment other data collection in the river. A data collection design would include details such as listing of parameters that need to be measured, spatial and temporal resolutions required, an estimate of cost and a schedule of measurements. The parameter list and the resolutions required are governed by the choice of the mathematical models that would be employed, which in turn is governed by the general understanding of the system's behavior and the type of information that we are expecting from the models' predictions. A general understanding of the St. Clair River behavior can be achieved from some of the earlier studies in the St. Clair River.

Scoping of Applicability and Costs for Establishing and Maintaining Hydrometric River Flows

The Study Team held several meetings with water and flow measurement agencies to investigate the availability of velocity measuring profilers for the St. Clair River. Both NOAA and the Water Survey of Canada had acquired Acoustic Doppler Velocity Measurement (ADVM) units for installation in the river. As permits from the relevant agencies were not received, these units were not installed. Discussions also led to the identification of sites in the St. Marys River for the installation of ADVM.

Compilation of Previous Studies and Pertinent Documents

The Study Team also commenced a review of the historical documents. The objective is to develop an annotated compendium of Orders of Approval pertaining to the hydropower projects in the St. Marys River and Lake Superior outflow regulation. This report will provide a brief history of the regulation of Lake Superior and an assessment of these orders, their requirements and rationale. The operational issues and concerns expressed in recent years by the interests will be

compiled and an annotated summary available for the Study Board. This report will serve as a supporting document for the International Upper Great Lakes Study.

4. ITEMS REQUIRING CLARIFICATION AND GUIDANCE FROM THE COMMISSION

- i) The Board is seeking clarification as to when does the Commission expect the six-month report on the strategy. Accordance to the guidance document, it is due at the end of the six months after the first Board Meeting. With the first Board meeting in March 2007, the Board recommends that the report will be submitted for the fall appearance of the Board
- ii) With respect to the formation of the Public Information Advisory Group (PIAG), please note that the Board will be providing names of potential candidates for PIAG. The Board requests that the Commission accelerate the appointments expeditiously in order to formalize the Study. The PIAG Co-Chairs have recommended that their first meeting coincide with the Lake Huron Conservation Conference in Midland, Ontario in July 2007.
- III) The Board is requesting that the formation of Independent Peer Review Group be considered by the Commission in order the Group is placed in time to provide feedback at critical milestones. The Board suggests that a meeting occur with the Study Liaison to resolve this matter as soon as possible.

5. BUDGETS

The tables below show approved, committed and spent amounts in the U.S. and Canada to date.

U.S. Funding

	Approved ¹	Committed ¹	Spent (as of 23 March 2007)
Initial Assessments including Hydrologic and Hydraulic Workshops, Contracts and Follow-up Actions ²	337,500	355,000	192,000
PIAG and Communication ³	102,500	102,500	0
Study Management including Board Activities and Travel ⁴	405,000	387,500	119,000
Commission – Independent Peer Review ⁵	15,000	15,000	0
Grand Total Budget	860,000	860,000	311,000

Notes:

1. The approved amount includes four tranches, three in FY06 (\$100,000; \$360,000 and \$60,000) and one in FY07 (\$325,000)
2. Committed amounts under this item include contracts and transfers for assessments and evaluations by experts and research fellows and amounts related to workshop preparations.
3. PIAG and Communication amounts have been committed, but no expenditures have occurred to date since the groups have not yet been formed.
4. Study management costs include Director and Study Manager Salaries and travel expenses for the Study Board.
5. The committed amount is that retained by the Commission for independent peer review which it will initiate.

Canadian Funding

	Approved	Committed	Spent (as of 23 March 2007)
Study Management including Board Activities and Travel ¹	150,000	150,000	140,000
Workshops and Contracts ²	50,000	50,000	25,000
Grand Total Budget	200,000	200,000	165,000³

Notes:

1. Study management costs include Director and Study Manager Salaries, setting up of the office and travel expenses for the Study Board.
2. Hydrology Modeling Workshop, Hydraulic and Sediment Modeling Workshop, Coastal Literature Survey and Review and Annotated Compendium of Past & Current Orders of Approval Relating to Lake Superior Regulation.
3. The full \$200,000 will be spent by end of the fiscal year (March 31, 2007).

Respectfully submitted,

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U.S. Co-Director

TED YUZYK
Canadian Co-Director

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JIM BRUCE

JONATHAN BULKLEY

DON BURN

RICHARD BISHOP

JON GEE

JAMES BREDIN

ALLAN CHOW

TONY EBERHARDT
U.S. Study Manager

SYED MOIN
Canadian Study Manager

Appendix “1”
Study Board Meeting No. 1, Windsor, ON March 6-7, 2007
International Upper Great Lakes Study Board

Canada	United States
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International Upper Great Lakes Study Board
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All attended except Don Burn, who was on phone for parts of the meeting.

APPENDIX # 2
SUMMARY OF ACTION ITEMS – IUGLS BOARD MEETING NO. 1

No.	Description of Action Item:	Action Lead:	Due by:
1	<i>Get the minutes (from David Fay) of the Public Meetings organized by the International Lake Superior Board of Control</i>	Syed Moin	
2	<i>Board requested that presentations be put on the FTP site</i>	Syed Moin	March 23, 07
3	<i>First draft semi-annual progress report due to IJC March 23rd 2007.</i>	Tony Eberhardt & Syed Moin	March 23, 07
4	<i>Traditional Knowledge Advisory Group - Council of Great Lakes Governors, comparable Canadian group have lists of tribes - start with aboriginal advisor of Environment Canada</i>	Jon Gee	
5	<i>Susan Greenwood (OMNR) can identify potential PIAG participants</i>	Allan Chow	
6	<i>Suggested list by April appearance for possible endorsement by IJC at Exec Session at Mackinaw Island, May 22-24, 2007</i>	All Board Members	April 16, 07
7	<i>Meeting notes and summary action items from the Hydrology Modeling Forum in Burlington will be sent to Board with these draft meeting minutes</i>	Tony Eberhardt & Syed Moin	March 31, 07
8	<i>Two paragraph memo for setting up the "side looker" Acoustic Doppler Current Profiler (ADCP) to Jim Brendin</i>	Tony Eberhardt (with Scott Thieme's help)	
9	<i>Allow Rob Nairn from Baird & Associates to stay for the duration of the workshop. Syed Moin to contact the consultants</i>	Syed Moin	March 12, 07
10	<i>Study Team will propose "decision making" procedures and provide it to the Board for their consideration and further discussion with the IJC</i>	Study Team	