

Notes from the Ninth Study Board Meeting

IJC Great Lakes Regional Office

Windsor, Ontario

10-11 December 2008

1. Welcome/Attendance

Board Members:

John Boland, Jim Bredin, Jim Bruce (Day 2), Jonathan Bulkley, Don Burn, Allan Chow, Kay Felt (by phone), Jon Gee, Gene Stakhiv, Ted Yuzyk

Managers:

Tony Eberhardt, Syed Moin

IJC Advisors:

Paul Pilon

PIO:

John Nevin

TWG & TT Leads:

David Fay, Bill Werick

Agenda is Attachment 1.

Note: Action Items are displayed as **bold** and summarized in Attachment 2.

2. Review Status of Action Items from Minutes of Meeting #8 (Syed Moin & Tony Eberhardt):

Action: Item #2 – “Not replacing the gauge, but adding a new gauge to substantiate information”. Syed Moin to refine wording.

3. Updates from the Directors (Ted Yuzyk & Gene Stakhiv):

a. Ottawa Appearance with IJC (Oct. 29th):

- i. 3-D Modelling: issue continues to be raised by GBA, but IJC agrees such modelling is not necessary. This has also been concurred by the Independent Peer Review (IPR) Group at its review of the Study’s hydraulic modelling strategy.
- ii. GBA –Foundation Letters – more when we discuss PIAG/ Communication issues (Item #8 and #9). Topic was also discussed at the IJC Winter Executive Session in Washington, DC on December 9th.
- iii. Remediation/ mitigation issues – more to follow (Item #5). Topic was also discussed at the Executive Session.
- iv. Period of record for regulation – issue was a concern during ILOSLR Study beyond the period specified in the orders for Lake Superior regulation. Issue will be discussed further with IJC lawyers.
- v. Forecasting economic and environmental conditions to 2040 – accepted the recommendation made by the Lake Superior Regulation Task Team, in consultation with economic advisors, not to attempt to estimate these future conditions. Future hydrologic conditions related to climate change will be addressed through adaptive management.

- b. IJC Winter Executive Session in Washington (Dec. 9th): At its regular session, in addition to the notes mentioned above regarding the GBA Foundation Letters and remediation/ mitigation, the following were noted regarding the proposed timeframe for Phase I Report:
 - i. First complete draft of report – May 1, 2009 (available for April appearance)
 - ii. 60-day public review period – July 1, 2009
 - iii. Integrate comments and finalize report by October 1, 2009.
 - 1. Allow for possible additional field work
 - 2. Closure at October Hearings
 - iv. Official notice of new timeframe will be issued in next Study Newsletter.
 - v. Only “Executive Summary” (a separate document) will be in French.
 - vi. Decision will be made on whether there will be a need for public hearings (IJC will decide). Public meetings will be required during review period.
- c. Independent Peer Review (IPR) on Uncertainty Strategy in Burlington, Ontario (Dec. 4th):
 - i. IPR Group generally agreed on the approach being conducted for hydraulic modelling, but is providing suggestions for assessment of uncertainty issues related to net basin supplies.
 - ii. They noted that sensitivity analysis is an important part of uncertainty analyses.
 - iii. Study may hire researchers familiar with uncertainty analysis to help frame the issue.

Action: **New scope of work will be developed by Gene Stakhiv after comments are received from the IPR Group.**

4. Report of St. Clair Task Team (Syed Moin):

- a. Meetings this Fall: Hydroclimatic Meeting (Oct. 15-16); Hydraulic TWG Mtg. (Oct. 21-22); Sediment TWG Mtg. (Nov. 10-11); Task Team Mtg. (Nov. 24-25).
- b. ADCP Gauges:
 - i. St. Marys River – Station infrastructure installed the week of Oct. 13th, two SonTek SL500s installed the week of Nov. 3rd (Mounted on the Bayfield Dyke – one above the other, both facing US shore). This is a new gauge in addition to the NOAA gauge installed previously which will continue to be used for navigation purposes.
 - ii. St. Clair River – near City of Port Huron water intake (about 1.2 miles from Lake Huron). SonTek SL500 installed on Nov. 10th. NOAA has a mandate for navigation regarding this gauge, so will likely cover its maintenance.
 - iii. Detroit River – installed in late September, 1.4 miles downstream from Ambassador Bridge. SonTek SL500 installed and set to view from 20 to 120 metres from bank.
- c. Bathymetry:
 - i. Extent of bathymetric measurement coverage has increased - 1971 (13,000 points); 2000 (56,000 points); 2007 (13,000,000 points) – full river from Fort Gratiot to Algonac.
 - ii. Lack of consistency at cross-sections – although some cross-sections were measured at roughly the same horizontal location, interpolation errors have

- occurred due to the number and vertical location of depth measurements being inconsistent between collection dates.
- iii. Additional bathymetry/ sediment composition work possible in 2009 for entire river by Best and Oberg (estimated cost ~ \$250,000). Results would be used as a separate document which could add to Study – Phase I findings.
Action: Syed Moin and Tony Eberhardt will follow-up with Jim Best and Kevin Oberg and provide potential SOW to Board for possible future approval. Wait for solid recommendation from Study sedimentologists.
- d. Flows in Connecting Channels:
 - i. Revising flows – which rating curves should be used?
 - ii. Not sure how far we can go back in time with confidence on flow data.
 - iii. Changes in flows effect residual NBS and other factors determination.
 - e. Analysis of Conveyance using Historic Bathymetry: A decrease in the modeled level of Lake Huron of about 0.12 m +/- 0.03 m between 1971 and 2007 – equivalent to a decrease in flow of 190 to 350 cms (~275 cms). Since 2000, modeled level of Lake Huron increased by 0.03m +/- 0.02 m between 2000 and 2007 (a decrease in conveyance since 2000). However, need to reconsider the band of error around these figures, first step of which is through sensitivity analyses of various components, such as, Manning’s “n” and bathymetry.
Action: A special one-day meeting will be held in the next few weeks to discuss further and resolve. Syed Moin will arrange the meeting.
Invitees will include the Hydraulic Modelling TWG Leads (Eric Tauriainen, Aaron Thompson), Dave Bennion, Bill Werick, Paul Pilon, Don Burn, David Fay, Thierry Faure, Jacob Bruxter, and Rich Vogel (IPR). Other possible invitees will be Rob Nairn, Nick Katopodes, Neil McDonald and Mike Davis.
 - f. Change due to small subsurface changes (sensitivity): little impact as modeled by Jason Giovannettone.
 - g. 1-D HEC-RAS: Holtschlag results are consistent with other analyses (increase – decrease conveyance) –
Action: Need to consider the same timeframes used in other analyses to substantiate comparison. Dave Holtschlag will be requested by Syed Moin to provide this information.
 - h. Ice Models: April-May 1984 event between Michigan State Police and Algonac. Sedimentologists have discounted this as a causative factor of increased conveyance.
Action: John Nevin will investigate newspaper reports of the event and check accounts by the Coast Guard and COE, Detroit District.
 - i. Sediment Studies:
 - i. In the upper 8 km reach, majority of material is gravel, cobble and boulders.
 - ii. Areas have been identified where till (cohesive clay that may be erodable) is present.
 - iii. 40 Pa shear stress or more is estimated to be required to move material; estimated shear in area is approximately 10 Pa.
 - j. Hydroclimatic Work: Comparison between MESH and GLERL models. Biggest difference in models is in evaporation. Considerable uncertainty regarding both approaches.

5. Remediation/ Mitigation (Gene Stakhiv):

- a. Definition: Compensation – interchangeable w/remediation or mitigation – indemnity or reparation of an impact.
- b. Uncertainty: Around NBS, conveyance and GIA. In 1962, it was determined that dredging resulted in a 15 cm (6 inch) drop between Lakes Huron and Erie, but this figure should be checked.
- c. Remediation: to what level would we remediate?
- d. Mitigation: could be considered at some future point to handle climate change to enhance Lake Superior outflow management, as noted in the Plan of Study.

6. St. Clair Decision Framework (Bill Werick):

Bill Werick presented a decision framework and acted as a provocateur to simulate discussion and illustrate specific issues that the Board would have to address based on his reading of the evidence that he had seen from the St. Clair studies. The presentation was not designed to foreshadow the Board's decision, but the ensuing discussion it provoked helped clarify the results of studies to date, stimulated Board debate about the evidence and the structure of the argument the Board would use and helped the Board identify work needed to develop their own draft decision at the February Board meeting.

7. Lake Superior Task Team and Plan Formulation Group (Tony Eberhardt):

- a. Coastal TWG:
 - i. A experts workshop was held in October to define the types of shorelines and performance indicators to consider
 - ii. Literature review of low-water impacts is complete
 - iii. Existing models to evaluate erosion of cohesive and sandy shorelines are being reviewed
 - iv. Scope of work to collect shoreline characteristics within specific sites is being refined since original proposal exceeded approved funding amount. Sample sites that can cover many interests (Coastal, Rec. Boating, Ecosystem) are preferable
 - v. Consolidation of best available GIS data is proceeding.
- b. Recreational Boating TWG:
 - i. Two interns have been hired and are located at the Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR) in Sudbury, Ontario
 - ii. Ed Mahoney of Michigan State University may write the contextual narrative for rec. boating, but others will also be considered.
- c. Ecosystems TWG:
 - i. Literature review is being conducted by Dr. Valerie Brady of the University of Minnesota-Duluth
 - ii. A “White Paper” regarding the upper Great Lakes ecosystem key indicators is being written by a team of experts led by Dr. Gerald Niemi of the University of Minnesota-Duluth and Dr. Jan Ciborowski of the University of Windsor
 - iii. An experts workshop will be held in Windsor on 3-4 February 2009
- d. Commercial Navigation TWG:
 - i. The existing Great Lakes Systems Analysis of Navigation Depths (GLSAND) model is being refined

- ii. The scope of work for the contextual narrative is being developed
- e. Hydropower TWG:
 - i. Baseline data is being gathered and information from the International Lake Ontario-St. Lawrence River Study is being reviewed for possible use
 - ii. The scope of work for the contextual narrative is being developed.
- f. Water Uses TWG:
 - i. The first phase of the collection of municipal and industrial intake and outfall is finished but the existing database is incomplete due to a lack of facility data. A second phase will attempt to fill data gaps.
 - ii. The first draft of the contextual narrative is being written by staff of the USGS-Columbus.
 - iii. The contract regarding water demand analysis is proceeding.
Action: Board would like a presentation by Ben Dziegielewski on water demand at next meeting. Tony Eberhardt to contact Ben Dziegielewski
- g. Other:
 - i. Need to keep PIAG informed of Task Team meetings.
 - ii. **Action: Need to send sample of Contextual Narrative (Chris Stewart's and outline) to Study Board. Tony Eberhardt to send.**
- h. Plan Formulation Group (David Fay):
 - i. An outgrowth of Lake Superior Regulation Task Team
 - ii. Working closely with PEG and Hydroclimatic Group
 - iii. Formulators are from EC, Corps Detroit District and HEC, Prof. Watkins and others are welcome.
 - iv. Schedule:
 - 1. Develop plan frameworks in year 3 (2009).
 - 2. Develop candidate plans for evaluation – performance indicators by April 2010.
 - 3. Plans for review by Board (& Public) in year 4 (2010-11).
 - v. Ask PIAG to propose objectives at a future meeting.
 - vi. Focus will include:
 - 1. Changes in the St. Clair River and how they may change Lake Superior regulation
 - 2. Adaptive management required by future plan operators and agencies.
- i. Circle of Influence Meetings (Bill Werick):
 - i. Muskegon – riparian and ecological water level preferences
 - ii. Ann Arbor – ecosystem
 - iii. Harrison Township – Lake St. Clair local issues (sedimentation)
 - iv. Toronto – First Nation concerns.
 - v. **Action: Study Board will send a letter to First Nation and tribal representatives (e.g., the Wapol Island Group) saying that their review of reports is invited. Study Team to write letter.** Additional circle of influence meetings will be held.
 - vi. **Action: A traditional knowledge contextual narrative should be written. Possible authors: Dan Tadgerson, Jordan Joudain, Rob Whitlow or Deb McGregor (EC). Also discussed a prof. at MSU (Stakhiv will obtain name). Gene Stakhiv and Ted Yuzyk will prepare the request.**

j. Adaptive Management (Bill Werick):

- i. Evaluate regulation plans with current climate
- ii. Consider uncertainty of climate change with adaptive management.
Action: Jim Bruce will send to Chair, Risk Management Guide for Climate Change Adaptation in Communities which he prepared with a colleague for Canadian government.
AM could include such actions as replacing the mean within a new regulation plan if, say, Bayesian analyses determined that the mean was changing. On the other end of the spectrum, could include agency/ institutional actions and measures.
- iii. Work with agencies that are presently pursuing AM, like Conservation Ontario.
- iv. Stakhiv noted that AM strategy is too broad and time consuming, and required that a new proposal be submitted which established a new, independent group, which did not rely on current members of PEG; also requested a two-tier proposal to accommodate both levels of AM – one for the Lake Superior Regulation Plan, itself, and the broader AM program for the Great Lakes.
- v. Need to figure out how program suggested can continue with funding beyond March 31, 2012.
- vi. Next Steps: Establish a group that will follow-up on the concept along with a budget.
Action: Board agreed in principle, but requested that a SOW with funding estimate be prepared and presented for approval to the Board at their next meeting. Gene Stakhiv requested that proposal include two discrete levels of AM – one for the Lake Superior regulation plan itself, and the other including the broader concept for managing the Great Lakes. Bill Werick, Wendy Leger, David Fay and Tony Eberhardt will prepare the proposal. Has to include individuals and agencies outside of the Study.

8. Report from PIAG (Jim Bruce & Kay Felt):

a. GBA Letters and Discussion with Commissioners:

- i. Briefing of IJC by Jim and Kay about concerns regarding GBA's negative comments on Study activities.
- ii. Briefing by Study Team at IJC Executive Session (Ted Yuzyk):
 1. Study Board prepared answers to nine questions posed in latest letter from GBA Foundation.
 2. IJC strongly endorses the approach taken by the Study Board to respond directly to GBA.
 3. Actions:
 - a. IJC will send out the Study Board response to questions.
 - b. Murray Clamen will call the GBA and Foundation to discuss this issue.
 - c. Questions posed:
 - i. When will gauges be installed? 3 new gauges installed in Fall 2008.

- ii. When will Rob Nairn be involved in Study? Contract awarded to W.F. Baird, Associates on technology scan of remedial measures. The firm and Dr. Nairn may be involved in other activities, such as uncertainty analyses. They were requested to bid on environmental/regulatory assessment, but declined, stating that was outside the scope of their expertise.
 - iii. 3-D Modelling? University of Illinois, Urbana-Champaign (UIUC) has begun 3-D model development – upper 3 km of St. Clair River, solely as an academic project independent of the Study. Study will provided data to support their research. Marcelo Garcia to provide results in January 2009 and they will be reviewed.
- b. SharePoint:
 - i. Need to improve search map.
 - ii. Need to increase the data conduit size.
 - iii. Need to improve the “date stamp” so that more current documents are identified.
- c. New Member:
 - i. Kate Bartter, played a key role under Sam Speck on Great Lakes Charter. She works at the Research Office at Ohio State University.
 - ii. Search for new Canadian member is continuing. Possibly someone from a municipality or the Great Lakes City Initiative.

9. Communication Plan/ Strategy (John Nevin):

- a. New Public Information Officer: The search continues for a replacement for Tom Black. Three candidates are being considered.
- b. Public Meetings: 15 attended by more than 1500 people
- c. Overview:

Action: A press release will be issued by John Nevin, coinciding with the release of the next newsletter regarding the new dates associated with the Phase I Report.

(During a meeting break, Paul Pilon contacted IJC Secretaries regarding informing governments of the revised release dates).

 - i. When talking to the press, key messages should include:
 1. Mandate of both IUGLS and IJC.
 2. Study findings and recommendations are based on state-of-the-art, peer reviewed science.
 3. Reflects much scientific debate and discussion to reach consensus.
 4. Public input has been and continues to be vitally important.
 5. Other information to be determined based on the results of the draft report.
 - ii. Report Release suggestions: short video segments, prior briefing of public officials, TV, magazines, etc.

- iii. Role of PIAG: host “town hall meetings”, interviews with local papers, letters to editors, multi-city conference calls, etc.
- iv. Suggested timeline after report release:
 - 1. Public Meetings in Detroit/ Windsor, Sarnia/ Port Huron, Parry Sound/Owen Sound, Sault Ste. Marie, Cleveland during the 60-day review period, or
 - 2. Take advantage of web casts to reach large groups at the same time.
 - 3. Summary of questions and answers compiled (no more than 50) and made available.
 - 4. Multi-city conference calls.
- v. Related opportunities:
 - 1. Great Lakes Days in Washington, DC – Feb. 23-25, 2009.
 - 2. IAGLR in Toledo during week of May 18, 2009.
 - 3. ASCE-EWRI in Kansas City during week of May 18, 2009.
 - 4. IJC Centennial on IBWT in Niagara Falls in June 2009.
 - 5. IJC Bi-annual Meeting in Windsor in the Fall 2009.
- vi. Budget:

Action: Need an overall scope and estimate to cover the entire communications strategy around the report release. John Nevin will prepare.

10. St. Clair Report Writing Effort (Ted Yuzyk):

- a. Delays due to:
 - i. Some groups still in process of analyzing the data collected this year,
 - ii. Contract delays,
 - iii. Data sets not complete,
 - iv. Quality of historical data is a problem,
 - v. Science is not straight forward, much uncertainty,
 - vi. Need integration of findings.
 - vii. Peer review process requires additional time.
- b. Timeframe: first draft by May 1, 2009.
- c. Report: 9 chapters (150 pages) with glossary, references and appendices. Topic of uncertainty may be an appendix on its own. May cover uncertainty in terms of “degrees of confidence”.

11. Next Study Meetings:

- a. February 24-25, 2009 in Windsor (2 full days) – focus of the meeting will be on decision process, possible remedial actions and communication of results.
- b. April meeting coinciding with IJC hearings, options:
 - i. Full member attendance,
 - ii. Rotational member attendance,
 - iii. Decision to be made at February meeting.
- c. Additional meetings and notes:
 - i. Ecosystem TWG, Expert Workshop: Feb. 3-4, 2009
 - ii. PIAG, St. Clair River Task Team meeting reps.: Dick Hibma and Kate Bartter.



Study Board Meeting #9

IJC Great Lakes Regional Office,
100 Ouellette Ave., 8th Floor, Windsor, ON N9A 6T3

Wednesday, December 10 – Thursday, December 11, 2008



Draft Agenda

Day 1 – Wednesday, December 10, 2008

Item	Time	Topic	Lead
1	1300 - 1310	Welcome/ Review & Approve Agenda	Stakhiv / Yuzyk
2	1310 - 1330	Review Status of Action Items from Minutes of Meeting #8	Moin/ Eberhardt
3	1330 - 1400	Updates from the Directors <ul style="list-style-type: none"> ▪ Hearing on Oct. 29th with the IJC ▪ IPR Comments on Uncertainty Strategy Report 	Yuzyk/ Stakhiv
4a	1400 - 1445	Report of St. Clair River Task Team (including hydroclimatic work) <ul style="list-style-type: none"> ▪ Status of studies ▪ Preliminary findings ▪ Integrating results 	Moin/ Nicholas
	1445-1500	Health Break	
4b	1500 – 1730	Continuation of St. Clair River Task Team Report	Moin/ Nicholas
	1730	End of Day 1	

Action Items from 9th Study Board Meeting – Windsor, Ontario

No.	Description of Action Item:	Action Lead:	Due by:
1	Revise wording in Notes from 8 th Study Board Meeting regarding gauges	Syed Moin	Dec. 31, 2008
2	New scope of work on uncertainty approach.	Gene Stakhiv	Jan. 31, 2008
3	Ask Best and Oberg to provide potential SOW and estimate on additional bathymetry/ sediment work..	Tony Eberhardt & Syed Moin	Jan. 15, 2009
4	Arrange a special one-day meeting regarding sensitivity of various hydraulic components.	Syed Moin	Jan. 15, 2009
5	Request Dave Holtschlag to provide results in similar timeframes as in other analyses to substantiate comparison.	Syed Moin	Jan. 15, 2009
6	Investigate newspaper reports of the 1984 ice event and check accounts by the Coast Guard and COE, Detroit District.	John Nevin	Jan. 15, 2009
7	Send sample of Contextual Narrative (Chris Stewart's and outline) to Study Board.	Tony Eberhardt	Dec. 31, 2008
8	Request presentation by Dr. Dziegielewski on water demand for next Study Board meeting.	Tony Eberhardt	Dec. 15, 2008
9	Study Board letter to the tribal representatives (Wapol Group) saying that their review of reports is invited.	Study Team	Jan. 31, 2009
10	Invitation for traditional knowledge contextual narrative. Possible authors: Dan Tangerson, Jordan Joudain, Rob Whitlow or Deb McGregor (EC).	Request from Study Directors	Jan. 31, 2009
11	Send to Chair, Risk Management Guide for Climate Change Adaptation in Communities which Jim Bruce prepared with a colleague for Canadian government.	Jim Bruce	Jan. 15, 2009
12	SOW with funding estimate prepared for Adaptive Management Group for approval of the Board at their next meeting.	Bill Werick, Wendy Leger, David Fay & Tony Eberhardt	Jan. 31, 2009
13	Press release coinciding with the release of the next newsletter regarding the new dates associated with the Phase I Report.	John Nevin	Jan. 15, 2009
14	Overall scope and estimate to cover the entire communications strategy around the report release.	John Nevin	Jan. 31, 2009

