

Notes from the Thirteenth Study Board Meeting

Hilton Windsor
Windsor, Ontario
10-11 December 2009

Day 1 -

1. Welcome/Attendance:

Board Members:

Jim Bredin, Jim Bruce, Jonathan Bulkley, Don Burn, Allan Chow, Kay Felt (Day 1), Jon Gee, Gene Stakhiv, Ted Yuzyk

Managers:

Tony Eberhardt, Syed Moin

IJC Advisors:

Mark Colosimo, Paul Pilon

PIO:

John Nevin, Jill Wingfield

TWG & TT Leads:

David Fay, Wendy Leger, Debbie Lee, Jen Read, Bill Werick

Others:

Jacob Bruxter (Day 2), Tara Buchanan, Jim Chandler (by phone – Day 2), Joe DePinto, Mark Dunning, Ben Dziegielewski, Scudder Mackey, Mike Shantz (Day 2), Tom Shillington.

Agenda is Attachment 1.

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

2. Review of Status of Action Items (Tony Eberhardt): Report made with no additional comments.

3. Transition and Procedural Issues (Ted Yuzyk & Gene Stakhiv):

- a. Response by IJC on questions raised at the Ottawa Hearing:
 - i. Natural versus man-made, report downplays remediation.
 - ii. Review St. Clair River again, but from a climate change aspect. Study Board has the authority to look at mitigation in terms of climate change.
 - iii. Should 10 cm of increased conveyance be included as the basis of comparison for Phase 2? – decision deferred awaiting government response.
 - iv. Only consider from 1962 onward.
 - v. Anxious to see Phase 1 report distributed on Dec. 15th, 90 day public comment period begins after the report release and before formal public hearings take place.
- b. New Organizational Structure (Syed Moin):
 - i. Transition which is being made was described.
 - ii. Some Phase 1 participants have been re-assigned to positions within Phase 2 structure. Keith Kompoltowicz (proposed from Detroit District Corps of Engineers for GIS-Data Management Group US Co-Lead). Jen Read is U.S. Adaptive Management Group Co-Lead.

- iii. Board and PIAG liaison discussed. PIAG liaison positions are still being finalized and will be discussed at the December 11th PIAG meeting.
- c. Update on Methodological Peer Reviews –
 - i. Basically complete for the three methodological reviews of Lake Superior regulation phase. What remains is the incorporation of comments into strategic scopes of work documents.
 - ii. Bill Werick has incorporated comments into the PFEG document. **Action Items:** Bill has agreed to modify the Socio-Economic document with assistance from Dr. John Boland and the economic advisors. Dr. Scudder Mackey has agreed to incorporate comments into the Ecosystems document.
 - iii. Response to the last independent peer review has been completed for the Phase 1 report and report production is proceeding. There will be a review of the peer review process to determine how it could run more smoothly. IJC liaisons and Study Co-Directors will discuss the process with IPR co-chairs and look for improvements.

4. Overview of Contextual Narratives (Mark Dunning):

- a. Underlying document of the economic and social state of the Great Lakes has been drafted. The six TWG contextual narratives are being developed and/or refined.
- b. Great Lakes region population is changing in terms of demographics.
- c. Details of the demographics of each lake basin was provided during the presentation.
- d. Population in the Great Lakes is shifting from urban to sub-urban areas. Jobs are declining in coastal areas. Population on Canadian side of the basin is projected to increase faster than the U.S. side.
- e. Shift in modes of transportation identified, but not necessarily tied to water levels.
- f. Speculation was made about potential climate change effects – potential for lower lake levels.
- g. Regarding individual TWG contextual narratives, general socio-economic, lake levels and adaptive management topics are well addressed by Coastal TWG and somewhat by Water Uses TWG. Commercial Navigation TWG needs to address significant issues more thoroughly (future conditions and thresholds). The Hydropower TWG document is still being reviewed. Awaiting Recreational Boating and Ecosystem documents.
- h. Dr. John Hoehn has been asked to look at contextual narratives to identify economic scenarios that will be considered in an adaptive management framework. They may also consider implications regarding Great Lakes Charter and revised Great Lakes Water Quality Agreement, Asian Carp, etc. Need to identify ten drivers impacting the various Great Lakes sectors. (**Action Item:** Modification of Contextual Narrative scope (Mark Dunning) to identify drivers – Tony Eberhardt)

5. Status of Lake Superior TWG Activities (Tony Eberhardt, David Fay & Syed Moin):

- a. Update was provided through presentations of activities, schedules and funding.
- b. May need to consider public info sessions during Summer 2010, but if held, care must be taken to not confuse these with IJC Spring Hearings. Public is anticipated to show interest in adaptive management.

- c. Peer review should include individual performance indicators and hydroclimatic research.
- d. Study funding available in both US and Canada (in-place and anticipated) indicates that all activities can be undertaken. Additional re-allocation of funding will be proposed by Syed Moin and Tony Eberhardt. (**Action Item:** Funding re-allocation table will be provided to the Board at the next Study Board meeting.)

6. Description of the Integrated Ecological Response Model – IERM (Scudder Mackey/ Joe DePinto):

- a. Ecosystem TWG will identify thresholds where impact will be determined.
- b. There will be an even balance of ecosystem sites between US and Canada.
- c. The TWG is moving forward to identify thresholds and response curves that can be incorporated into the IERM.
- d. Site coordinators will determine if near-shore water quality can be assessed as it relates to changing water levels at their site. The issue will be brought up at the January 2010 site coordinators meeting. Opportunities for improvements in areas that have been degraded will be pursued.
- e. IERM:
 - i. The model will compare alternative plans in terms of ecological performance indicators, quantifying and integrating responses.
 - ii. Simulation and visualization tools will be provided.
 - iii. It will link to a shared vision model framework.
 - iv. The model will not cover entire shoreline – only specific sites.
 - v. Relationships will be developed between water level attributes and specific site performance indicators.
 - vi. The model will consider a period of record (100+ years) that captures various seasonal events and year-to-year fluctuations.
 - vii. Uncertainty of metrics will be assessed using techniques like “bootstrapping”.

7. Results of Water Demand Study (Ben Dziegielewski): Details of the recently completed report were provided including:

- a. Total water withdrawals: ~46 billion gallons per day (not counting hydropower).
- b. Consumptive uses (limited accuracy): ~2 billion gallons per day.
- c. Details of withdrawals, consumptives uses versus flows provided: 28% total withdrawals, 6.8% without thermal power withdrawals; consumptive uses 1.25%; and diversions -1.27%.
- d. Past trends – total withdrawals: -1.72% per year (1990 – 2005).
- e. Increased irrigated agriculture demand will likely increase under possible climate change conditions.

8. Update from Adaptive Management Group (Wendy Leger/ Jen Read):

- a. Lists of members, Study and PIAG liaison were shown.
- b. Nine tasks were originally identified. Tasks 1-5 and 7 were approved by the Board. Task 6 on developing non-regulation strategies is being deleted, based on discussions with IJC, and has been changed to “Monitoring and Modelling”, a critical task. There are now eight proposed tasks.

- c. Need to define risk evaluation matrix with assistance from Dr. Casey Brown (**Action Item:** Gene Stakhiv needs to finalize contract). Contracts will also be sought with Drs. Manu Lall and Taha Ouarda.
- d. Need to look at alternatives when considering structural approaches to deal with climate change, since less costly alternatives may be feasible – decision needs to come from Study Board. A decision tree might help the process. (**Action Item:** Wendy Leger will craft an exercise around this topic for the next Study Board meeting).
- e. Tasks 7 & 8 – Institutional analysis and development of adaptive management plan:
 - i. Task 7 includes review of existing policies and rules, identification of institutional barriers to long-term monitoring, required institutional changes, identification of problems regulation cannot address, identification of responsible agencies, mechanisms for coordinated AM strategy (through attending related meetings and conferences), identification of institutional requirements for a coordinated AM strategy. Task 8 includes documenting the plan and recommendations.
 - ii. Estimated cost is \$50K in year 4, \$80K in year 5.
 - iii. Need to identify why adaptive management actions (35 previously identified) have not been implemented. Need to bring in Great Lakes managers; e.g., from Great Lakes Commission and Regional Planning Committees to link to agencies.
 - iv. Need to involve agencies throughout the process including those that are presently performing monitoring.
 - v. Board should pursue this at the highest levels of government (IJC).
- f. The Study Board approved the total package and funding proposal.
- g. AM-Hydroclimate Workshop will be held on Feb. 2-4, 2010 at the Intercontinental Hotel in Toronto.

9. St. Clair River Report Close-out (Ted Yuzyk):

- a. Status of the final document was reported. New release date is Tuesday, December 15th.
- b. Recognition of participation was made to all present. Special recognition was made to Debbie Lee and Jacob Bruxer for their exceptional scientific investigations, Syed Moin for his overall management of the Phase 1 investigations and Ted Yuzyk and Gene Stakhiv for their leadership during the phase.

Day 2

10. Update/Discussion on Legal Issues (Jim Chandler):

- a. Key Issues:
 - i. Relevant provisions of the Boundary Waters Treaty were: Articles III (uses of the waters), VIII (order of precedence, existing uses, indemnity), XIII (opportunities of interests to be heard).
 - ii. Provisions as applied in the 1914 Orders: rights for navigation, range of Lake Superior levels, protection against high levels in lower St. Marys River.
 - iii. IJC practice through mid-1970s: 1973 special interim report.

- iv. Process for amending Orders: additional flexibility can be built in, but it would be difficult. Operational flexibility may be easier to implement.
 - v. Supplementary Orders.
 - vi. Establishment of the control Board and how it could change.
- b. Discussion:
- i. Article VIII “existing uses”: notion has evolved over time to mean environmental conditions, but this may not have been the original intention.
 - ii. If recommendation is to drastically impact an interest, an alternative would not likely fly. In the case of reducing flows (an impact on hydropower) to reduce lamprey propagation, this could be acceptable. Would depend on extent and distribution of impacts on interests. But the Sea Lamprey experiment could be a good test of operational flexibility and the benefits to multiple interests.
- (**Action Item:** Jim Chandler needs to address the issue of what Period of Record should be used.) This was an issue during ILOSLR Study but may not be an issue for this Study since period of record has changed throughout the last century, whereas for Lake Ontario, it had not (1860 – 1954).

11. Update from the Plan Formulation and Evaluation Group (David Fay/ Bill Werick):

- a. Plan 1977-A and existing Order of Approval:
 - i. Water allocation is to domestic water uses, navigation, fish habitat and hydropower
 - ii. Operational aspects include peaking & ponding
 - iii. Basis of the plan reflects Orders: incorporates lake balancing, criteria embodied in outflow limits
 - iv. The Balancing Equation, used for systemic regulation, includes a factor (A) derived from an economic optimization analysis in the early 1970s.
 - v. Plan 1977-A has a limited impact on Lake Michigan-Huron levels compared to pre-project conditions.
 - vi. Regarding the Sea Lamprey test, operational changes would be required, but the allocation between interests will not change greatly.
- b. PFEG Update:
 - i. For navigation, the fleet mix as well as water levels must be factors within the Shared Vision Model. The control location changes depending on both factors.
 - ii. St. Marys problems and opportunities: sea lamprey trapping, different ways to consider peaking of flows for commercial navigation, flow allocation between fisheries and hydropower.
 - iii. Sensitivity of results to initial levels should consider many different initial conditions.
 - iv. A possible option would be an adjustable plan that changes balancing procedures (A, B, C) as supply conditions change.
 - v. Concerns were expressed about developing stochastic supplies from a stationary data set. For IUGLS, a stochastic climate change scenario will be generated and tested.

12. Study Board Decision Exercise (Bill Werick):

- a. Objectives:
 - i. Approve a process to improve Board guidelines.
 - ii. Highlight the important study elements and make steering corrections.
- b. Process Guidelines:
 - i. Study recommendations will be based on the best available data.
 - ii. Decisions will be open and transparent.
 - iii. Data and modelling uncertainty will be acknowledged and taken into consideration.
 - iv. Board will articulate its decision factors in an open and transparent manner.
 - v. Board will vigorously try to reach consensus.
- c. Plan Evaluation Guidelines:
 - i. Best assessment of impacts.
 - ii. Order of precedence and Boundary Waters Treaty.
 - iii. All key economic, ecologic and social impacts will be considered.
 - iv. No disproportionate losses to any interest.
 - v. Responsive to unusual and unforeseen conditions.
- d. Preliminary plans considered in the Exercise as a demonstration.
- e. There were no real or final performance indicators in the SVM, but the ecosystem and coastal TWGs offered some preliminary ideas for use in a practice decision. Ecosystem TWG consider ideal baseline as pre-project condition but levels with Plan 1977-A likely are acceptable. For coastal property interests, preliminary objectives used were to reduce flood and erosion damage and reduce the frequency of low levels. Plan performance for hydropower, navigation and recreational boating were also factored in the practice decision.
- f. Discussion:
 - i. Difficulty is identified making trade-offs without considering all aspects of interests, e.g., energy pricing, ship movements, etc.
 - ii. Conflicts identified between coastal and ecosystem factors.
- g. Practice: Acting Board member 1 favored economics, while Acting Board member 2 favored ecosystems.
 - i. Acting Board member 1 - would favor reducing the range on Lake Michigan-Huron, but would like more site studies, acceptable trade-off of lower Superior lows in order to raise Michigan-Huron lows a bit.
 - ii. Acting Board member 2 - opposed expanding Superior range, broader range on Superior is not acceptable for ecosystem, concerned about impacts to commercial navigation.
 - iii. Showed that performance indicators that quantify the impacts of lower levels on Lake Superior and Michigan-Huron are needed, but the trade-off between lakes is a value judgement.
- h. Thoughts on Guidelines:
 - i. Revise Guideline 3 to more accurately represent how the Board is going to use Performance Indicators including economic info. on increasing benefits.
 - ii. Are you willing to accept losses compared to 77A if the losses still leave interests better off than pre-project? Than 55 Mod Rule of 1949?
- i. Questions for the Board:

- i. Are you willing to expand the levels on Lake Superior? Possibly yes, since it may increase environmental benefits. A plan that reduces MH flood and low levels and does it at little cost to Superior may be acceptable.
- ii. How to incorporate hydroclimatic guidelines into plan alternatives?
- iii. How do we define “natural” conditions? Plan development may center around St. Marys operations.

(Action Items: Every TWG chair will contact their Board liaison to suggest planning objectives and guidelines. Ted Yuzyk and Gene Stakhiv will coordinate overall development. Bill Werick will provide a list of the impacts of choosing a particular plan).

13. Proposed Communication Strategy (John Nevin & Jill Wingfield):

- a. Press release is being sent out regarding a teleconference on Tuesday, December 15th and simultaneous Phase 1 Report release.
- b. Proposed PIAG Liaison:
 - i. Ecosystems – Jackson, Steinman, Muter, Ettawageshik
 - ii. Navigation – Hryb, Nekvasil
 - iii. Water Uses – Marles, Vito
 - iv. Coastal Zone – Anderson, Smithe
 - v. Rec. Boating & Tourism – Cuddy, Irish
 - vi. Hydro – Marles, Thomas
 - vii. Hydroclimate – Bruce, Powers
 - viii. Info. Management & GIS – Mutter, TeSelle
 - ix. AM – Hibma, Felt
 - x. PFEG – Higgs, Bartter
- c. Tentative IJC Public Hearing schedule:
 - i. Mar. 15 – Toronto, Ontario
 - ii. Mar. 16 – Midland & Owen Sound, Ontario
 - iii. Mar. 17 – Sarnia, Ontario
 - iv. Mar. 18 – Grosse Point Farms, MI & Toledo, OH
 - v. Mar. 22 – Muskegon, MI
 - vi. Mar. 23 – Chicago, IL
 - vii. Mar. 24 – Milwaukee, WI
 - viii. Mar. 25 – Green Bay, WI
 - ix. Mar. 29 – Sault Ste Marie, Ontario
- d. Final Report wrap-up next week.
- e. Newsletter in mid/late January (\$1,500).
- f. Survey (mid/late January).
- g. Outreach efforts (late January/ February) (\$2,000).
- h. Video – short (5 to 8 minutes for \$8,500) or long (16 to 21 minutes for \$11,000). Findings of the St. Clair and beginnings of the Lake Superior phase. Suggested contractor: Digital Design.
- i. Informational public meetings (6 to 8 in late summer/fall 2010) or informational campaign? Info campaign was preferred with continued use of “circles of influence” meetings.

14. Other Business (Syed Moin): Next Meeting: Tentatively for first week of March in Windsor.



Study Board Meeting #13

Hilton Windsor

277 Riverside Drive West, Windsor, Ontario N9A 5K4, Tel: (519) 973-5555

Wednesday, December 09 to Thursday, December 10, 2009

Draft Agenda

Day 1- Dec. 9

Item	Time	Topic	Lead
1	0900 - 0915	Welcome/ Review & Approve Agenda	Stakhiv / Yuzyk
2	0915 - 0930	Review Status of Action Items from Minutes of Meeting #12	Eberhardt/Moin
3	0930 - 1000	Transition and Procedural Issues: <ul style="list-style-type: none"> ▪ Response by IJC on questions raised at the Ottawa Hearing ▪ New organizational structure and liaison to TWGs ▪ Update on Methodological Peer Reviews 	Yuzyk/ Stakhiv
4	1000 - 1030	Overview of Contextual Narratives	Dunning
	1030 - 1045	Health Break	
5	1045 - 1200	Status of Lake Superior TWG Activities <ul style="list-style-type: none"> ▪ Adjustments to funding for Years 4 and 5 ▪ Review/ approval of proposals 	Moin/ Eberhardt
	1200 - 1300	Lunch	
6	1300 - 1400	Description of Integrated Ecological Response Model	Mackey
7	1400 -1445	Results of Water Demand Study	Dziegielewski
	1445 - 1500	Health Break	
8	1500 - 1545	Update from Adaptive Management Group	Leger/Read
9	1545 - 1715	St. Clair Phase Close-out: <ul style="list-style-type: none"> ▪ Final St. Clair Report ▪ Recognition of Contributors 	Yuzyk/Stakhiv
	1715	End of Day 1	

Day 2 – Dec. 10th

Item	Time	Topic	Lead
10	0830 - 0915	Update/ Discussion on Legal Issues	Chandler
11	0915 - 1000	Update from Plan Formulation and Evaluation Group	Fay/ Werick
12a	1000 - 1030	Study Board Decision Exercise	Werick
	1030 - 1045	Health Break	
12b	1045 - 1200	Study Board Decision Exercise (continued)	Werick
	1200 - 1300	Lunch	
12c	1300 - 1445	Study Board Decision Exercise (continued)	Werick
	1445 - 1500	Health Break	
13	1500 - 1545	Proposed Communication Strategy: <ul style="list-style-type: none"> ▪ Next Newsletter ▪ PIAG report ▪ IJC Public Hearing Schedule 	Wingfield/Nevin
14	1545 - 1600	Other Business: <ul style="list-style-type: none"> ▪ Board Teleconferences ▪ Next Board Meeting: March 2-3, 2010 in a US City (tentative) ▪ Logistics for dinner with PIAG 	Moin
	1600	End of Day 2	

Action Items from 13th Study Board Meeting – Windsor, Ontario

No.	Description of Action Item:	Action Lead:	Due by:
1	Modify the Socio-Economic methodology document incorporating IPR comments with assistance from Dr. John Boland and the economic advisors.	Bill Werick	February 1
2	Modify the Ecosystems methodology document incorporating IPR comments.	Scudder Mackey	February 1
3	Modification of Contextual Narrative scope (Mark Dunning) to identify drivers	Tony Eberhardt	January 15
4	Funding re-allocation table provided to the Board at the next Study Board meeting	Tony Eberhardt & Syed Moin	February 1
5	Finalization of Contract to hire Dr. Casey Brown	Gene Stakhiv & Tony Eberhardt	February 1
6	Adaptive Management Exercise for February Study Board meeting	Wendy Leger	February 10
7	Discussion with Jim Chandler regarding the Period of Record that should be used – report to the Board	Tony Eberhardt & David Fay	January 31
8	Every TWG chair will contact their Board liaison to suggest planning objectives and guidelines. Ted Yuzyk and Gene Stakhiv will coordinate overall development. Bill Werick will provide a list of the impacts of choosing a particular plan	As identified in the Item	January 31
9	Modification of Contextual Narrative scope (Mark Dunning) to identify drivers	Tony Eberhardt	January 15
10	Funding re-allocation table provided to the Board at the next Study Board meeting	Tony Eberhardt & Syed Moin	February 1
11			