

Notes from the Fourteenth Study Board Meeting

Hilton Windsor
Windsor, Ontario
2-3 March 2010

Day 1 -

1. Welcome/Attendance:

Board Members:

John Boland, Jim Bredin, Jim Bruce, Jonathan Bulkley, Don Burn, Allan Chow, Jon Gee, David Powers, 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, Jen Read, Bill Werick

Others:

Tara Buchanan (Day 2), Jacob Bruxer (Day 2 by phone), Debbie Lee (Day 2 by phone).

David Powers was introduced as the new US PIAG Co-Lead and new Member of the Study Board, replacing Kay Felt who resigned from these positions, but will remain as a US PIAG Member.

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. Timelines and Products for the Next Phase (Ted Yuzyk):

a. IPR Status, lessons learned:

- i. St. Clair River reports are all posted.
- ii. Finalizing reply to Bill Bialkowski and accompanying material for immediate distribution. This material will be added to the website with the other public comments.
- iii. Lake Superior Regulation – three methodological reviews complete, but posting has been slow. This will hopefully be rectified soon.
- iv. Lessons learned:
 1. Challenge getting peer reviewers with Great Lakes knowledge.
 2. Need to have a list of reviewers in advance.
 3. Too many steps in the posting process results in long delays.
 4. Review guidelines not always followed by peer reviewers.
 5. Timeliness in responses from both sides was a problem

6. Need to space out products better.
- v. A teleconference with the Study team, IJC Advisors and IPR Co-leads was held on February 25, 2010 to discuss improvements.
- vi. Improvements identified during the February 25th teleconference:
 1. Identify products early and timeframe ensuring spacing of reviews.
 2. Ensure review product is of high quality – develop a template.
 3. Provide a context piece for each review.
 4. IPR will develop a pool of potential reviewers, they will ensure guidelines are followed, and develop and implement a tracking system. Study Team will also track progress.
 5. ASCE-EWRI and CWRA admittedly are not strong in terms of ecosystem review and will look for assistance in this regard.
 6. IJC will streamline posting and organize teleconferences. Protocol is that anything that's posted must be approved by the Commission. However, authority now has been delegated to Mark Colosimo and Paul Pilon to post.
- b. Eight sub-products are proposed for review according to key themes.
- c. Products need to be the building blocks for final report, to adequately cover the key themes, to be spaced and not all back-ended, and to be of high quality.
- d. Possible products with potential reviewers identified for some in parenthesis. (Note: Need to avoid conflicts of interest):
 - i. IERM – winter 2010/11 (Ecosystem reviewers for IERM and other analyses: Pat Chambers, Jean Morin, Barbara Bedford, Alan Burten (Univ. of Michigan)).
 - ii. St. Marys ecosystem restoration – winter 2010/11.
 - iii. Wetlands as a PI – winter 2010/11.
 - iv. Economic analysis of coastal processes – spring 2011 (Economic and coastal aspects: Brian Greenwood, Bill Kamphuis).
 - v. Impact analyses of rec. boating, tourism and cruise ships – winter 2010/11 (Tommy Brown (Cornell), Wen-Huei Chang (IWR-MSU)).
 - vi. Hydropower – peaking & ponding, impact analyses – fall 2010 (Joan Frain (Ontario Power Generation) and Randy Crissman (NYPA)).
 - vii. Commercial Navigation - transportation cost model – fall 2010.
 - viii. Water Uses – supply and demand – spring 2011 (Jim Bruce will suggest a reviewer).
 - ix. Hydroclimate – stochastic, climate change, etc. – spring 2011 (Upmanu Lall, John Pomeroy, David Pearson).
 - x. PFEG - Plan formulation, SVM, optimization – summer 2011 (Pete Loucks, Rick Palmer).
 - xi. AM – coping zones, etc. – summer 2011 (Don Scavia).
- e. PIAG will be asked to provide suggested reviewers.
- f. **Action Item #1: Study Board will also provide additional suggested reviewers.**
- g. Timeline:
 - i. Final Report: Feb. 2012.
 - ii. Draft Report: October 2011.
 - iii. Public consultations on Plan: July/ August 2011 – need to be clear what our mandate is and the differences between phases 1 and 2.

- iv. Eight product reviews: June 2010-June 2011.
- h. Draft Final Report outline/ suggested chapters:
 - i. Introduction – mandate, organization, public, peer review, etc.,
 - ii. Key interests – order of precedence,
 - iii. GL hydrology and climate – variability and change,
 - iv. PFEG – plans, PI, criteria, etc.,
 - v. Plan assessment and selection,
 - vi. AM – strategy implementation, etc.,
 - vii. Recommendations: proposed plan, AM, etc.
- i. Other: Awaiting response from IJC on the Study Board letter on the strategy proposed for the next phase of the Study, specifically: clarification of structural mitigation regarding climate change and operational guidelines for Lake Superior to address climate change. Work planning is proceeding although no reply has been received. **Action Item #2: Study Team will again request clarification during April Hearings in DC.**

4. PIAG Status and Communication (John Nevin):

- a. New US Co-Chair, David Powers.
- b. TWG Liaison confirmed.
 - i. A note was sent out addressing assignments.
 - ii. Some concerns expressed on not being notified by TWG. **Action Item #3: TWG Leads will be reminded to notify PIAG liaison of meetings/ teleconferences.**
- c. IJC Consultations (not Hearings) on SCR Report to provide dialog between Commission and Public – March 2010:
 - i. Monday, March 22 – Sturgeon Bay and Midland,
 - ii. Wednesday, March 24 - Muskegon and Toronto,
 - iii. Thursday, March 25 - Sarnia and Toledo.
 - iv. Two to three Commissioners at each.
 - v. Anticipated questions were discussed regarding the mandate of the Commission regarding restoration of lake levels for on-going erosion. Clarification to answer public questions on this issue will be required by the IJC liaison.
 - vi. Two teleconferences/ webinars – March 30 and 31.
 - vii. Comment period ends on April 9, 2010. Expect a synopsis of the consultation by the IJC at the April Hearings; preparatory response to Governments.
- d. Next newsletter is being finalized and will go to production within the week.
- e. Video – script modifications in progress/ draft to be presented to the Study Board at the next meeting.
- f. Outreach activities – Chicago Boat Show.
- g. Facebook Page –general info., status, photos, video, etc. Advertisements will be available to targeted audiences at a cost. Lessons will be learned from the IJC Facebook which will be developed and broadcasted first.

5. Update on Lake Superior TWG Activities and Finances (Tony Eberhardt & Syed Moin):

- a. Task Team update given to the Board on activities discussed and funds proposed for activities during the remaining years of the Study.

- b. Need input to PFEG from Board on PIs – workshops into Fall 2010.
- c. New US funding requests will be made of the IJC for years 4 and 5. Approximately \$6.5M committed to date of the \$7.3M estimated for the entire Study.
- d. Canadian expenditures to date are \$3.65M of \$8.76M estimated for the Study (Balance equals \$5.1M for remaining Study years). This fiscal year, \$975K balance available and requiring expenditure by March 31, 2010.

6. Plan Formulation & Adaptive Management – Linkages and Processes (Gene Stakhiv / Ted Yuzyk):

- a. Questions that will need to be addressed include:
 - i. What does evaluation mean – how do we do it?
 - ii. What is Board's role vs. PFEG & AM TWG?
 - iii. How does Board formulate options?
 - iv. Under what principles/ guidelines will Board evaluate options, etc.?
 - v. What are the required changes in the Orders and/ or regulation plan?
 - vi. How to consider climate change?
- b. Lake Ontario alternatives shown demonstrating the trade-offs made between interests. However, there will be less information of this sort, available for Study Board decisions. Metrics will relate to coping zones and performance indicators.
- c. LOSLR Study Guidelines:
 - i. Ecological Integrity,
 - ii. Maximizing economic and ecological net benefits,
 - iii. No disproportionate losses to any interest,
 - iv. Flexible in recognition of unusual or unexpected conditions,
 - v. Adaptable to climate change and variability,
 - vi. Decision-making transparent and representative,
 - vii. Adapt to future advances in knowledge, science and technology.
- d. Need to discuss meanings of objectives (for formulating plans- explicit statements of what each plan is intended to accomplish), guidelines (to rank alternatives) and performance indicators (defining impacts to interests).
- e. IPCC Lexicon of Adaptation: Precautionary Principle, Pro-active and Autonomous Adaptation.
- f. Differences between AM (inherently associated with implementation and operation of a new regulation plan that has some operational uncertainties and unknowns) and Adaptation (incremental long-term adjustments (planned and ad hoc) to potential future climate change states) discussed.
- g. Important thing for AM is that we identify the key agencies that should be involved to make the plan work beyond the Study – coastal zone managers, environmental groups – a difficult challenge in terms of future funding and perception of urgency/ need, turf issues, etc.

7. SVP Case Study (Bill Werick/ David Fay):

- a. Three tiers of Board recommendations:
 - i. New near-term Lake Superior plan similar to Plan 1977-A (economic-based, ecosystem-based, a balanced benefit plan).
 - ii. Next-term plan with adaptive management.
 - iii. Beyond Lake Superior regulation – multi-lake regulation and other measures.

- b. Considering new near-term plans, preliminary studies show that with historic supplies, annual benefits result to commercial navigation with Plan 122 compared to 1977-A and no ecosystem issues result with either plan. Such is not the case considering stochastic extremes. Plan 122 draws Lake Superior down more than half a metre than 1977-A during driest conditions, but causes a slight (few centimetre) benefit on Lake Michigan-Huron. Other supplies are demonstrated with varying results. Given glacial isostatic adjustment, the future will see lower levels in Georgian Bay and more severe flooding at Chicago, which effects where you are in your “coping zone”.
- c. Considering next-term planning, triggers will need to be considered when shifting to another alternative. Trigger could be Lake Superior level.
- d. “Beyond regulation” results under stochastic warm-dry conditions requiring structural alternatives.
- e. Discussion:
 - i. Need to paint a very clear picture on the vulnerability of the Great Lakes for the public.
 - ii. Trends occur gradually which may help define triggers.
 - iii. Big issues:
 - 1. What principles will the Board decide to use?
 - 2. This is an intellectual puzzle and the Board must decide how to be engaged in decision process.

Day 2

8. Adaptive Management Process (Wendy Leger):

- a. Each of the three tiers defined by PFEG has the following components: cause, triggers, defined goals, action that would be taken, modelling and monitoring and who’s responsible.
- b. When moving toward tier 2, need to determine what would be necessary both from a data analysis perspective (PIs and triggers) and from an institutional perspective to make the change. May have to change your goals for regulation.
- c. Decision tree will outline the path followed under possible situations – new plan, new Orders, etc.
- d. A tier 1 plan could include a provision to move from one plan to another, say Plan 1977-A to Plan 122 and back. Tier 2 plans would be implemented if there is a water level regime shift, new invasive species and the tier 1 plan is not capable of handling the shift – transitional zone from coping zone B to C.
- e. Coping zone – changing over time, varying by location and interest. Order of precedence may kick in when making decisions regarding who to protect.
- f. Water supply sequences considered to develop a risk evaluation matrix to include:
 - i. Stochastic sequence of contemporary supplies (incorporating variability),
 - ii. Multiple GCM/RCM runs to get at ΔT , ΔP and perturb the historical NBS based on these,
 - iii. Stochastic sequence with climate change,
 - iv. Historic (including paleo) analysis of variability,
 - v. Plan spoken narrative on natural climate phenomena and climate change.
- g. Tier 2 plans would be on reserve for use within certain conditions.

- h. Tier 3 actions would be suggested when it is determined that regulation is not enough.
- i. Review of previous studies proposing Great Lakes structures which may be considered if tier 3 actions are recommended – report by Jacob Bruxer. (Detailed summaries were provided of a number of studies that took place during the last century).
 - i. Improvements difficult and costly, with costs far outweighing the benefits, plus environmental concerns.
 - ii. Regulation of Michigan-Huron not possible without regulation of Lake Erie outflows.
- j. Examples of resiliency actions:
 - i. Shoreline management,
 - ii. Modifying diversions,
 - iii. Clear delineation of responsibilities.
- k. Institutional/ governance analysis – contract scope:
 - i. Review previous work,
 - ii. Identify key institutional requirements,
 - iii. Hold small workshop with IJC lawyers, former Commissioners, etc.,
 - iv. Identify alternative actions (lit. review).
- l. An AM decision tree was provided.
- m. Need to develop a mechanism for agency support after the Study, e.g., modify the mandate of the Coordinating Committee for Great Lakes Data Management or establish a cadre of universities. Setting up a trust fund.
- n. If there is a surplus of funding after year 5, could make the suggestion to IJC to establish a long-term monitoring/ AM program.
- o. Although may be unlikely that governments will make it a priority to fund long-term actions, identification of such actions is still viable. Great Lakes Water Quality Agreement renegotiations may be a vehicle for action. Identify tangible bites that agencies can take.
- p. AMG Critical Dates:
 - i. Practice AM decision – March 2-3 Study Board Meeting (4 - PIAG), 2010,
 - ii. Coping zones – June 2010 (working draft),
 - iii. Water supply sequences – June 2010,
 - iv. Defining plausibility – Sept. 2010/March 2011,
 - v. Adaptive regulation strategies - Sept. 2010/March 2011,
 - vi. New structures – Sept. 2010/June 2011,
 - vii. Monitoring and modelling requirements – Sept. 2010 /March 2011,
 - viii. Institutional analysis – June 2011,
 - ix. AM reports – June 2011/Sept. 2011.
- q. Strive toward getting the Commission more involved.
- r. Look for Study Board members to volunteer to address guidelines to judge alternatives - Study Board teleconference prior to the April Hearings. Vision, Goals and Guidelines from LOSL provided as a starting point.

9. Hydroclimate Activities and Update (Debbie Lee by Phone):

- a. Progress on activities provided.
- b. Face-to-face meeting will be held in Chicago on April 26-27, 2010.

- c. Paleo work would be done through a literature search. Board members should provide any known papers to Debbie Lee. **Action Item #4: Syed will investigate a small contract for this work.**
- d. **Action Item #5: Debbie will be sending a list of all on-going projects to the Study Team, along with delivery dates.** Once Jim Angel's data are provided (expected soon), more scenario development can progress.

10. SVP Case Study – Board Discussion

- a. Is the Board going to recommend a replacement of Plan 1977-A based on near-term climate conditions or the status quo? All members agreed that they probably would.
- b. Does the SB envision endorsing rules that move from one plan to another based on triggers? Yes, and will consider balancing water levels, order of precedence, trade-offs of benefits, etc. In the near term, there will likely be a slightly modified Plan 1977-A with further modifications for more extreme wet and dry cases.
- c. Would the SB be willing to change the criteria in the existing plan within the present Orders of Approval to facilitate benefits to an interest? Should look at broader goals to define plans and let the IJC worry about the Orders. Need clarification from the IJC on the Orders. Writing new Orders will likely happen. If the SB recommends a plan, then a new Order will also be drafted.
- d. Do actual structures need to be proposed or do we deal with water level modifications? The SB agreed the focus should be on water level modifications not structures. **Action Item #6: Optimization work will proceed down this path. Syed Moin to follow up on a contract.**
- e. Is the SB going to review previous studies of non-regulation options to deal with Zone C? **Action Item #7: Identification of limits of regulation will be made and advice on these options beyond regulation will be listed along with agencies that could implement (PFEG/ AMG).**
- f. How far is the SB willing to recommend actions to other agencies? It will advise agencies of operational changes and the resulting consequences, e.g., shoreline management, as a result of these operations. Several members expressed the view that the Board should suggest actions to help reinforce the position of those staff members in provincial and state agencies attempting to advance appropriate actions. Only present the results but not suggest actions.
- g. Goals and Guidelines (as previously proposed at an earlier SB meeting):
 - i. To formulate and evaluate options to improve the operating rules and criteria governing the system to meet the contemporary and emerging needs, interests and preferences for managing the system in a sustainable manner including under climate change scenarios. SB agrees this is still valid.
 - ii. The second goal regarding flows in the St. Clair River could be deleted since it is past and concept considered in the first goal.
 - iii. Decision guidelines were modified. **Action Item #8: New guidelines will be distributed to the Study Board for confirmation (Wendy Leger). A teleconference will be set up to finalize (Study Team).**

11. Other Business (Tony Eberhardt):

- a. Next Meetings: Joint meetings with the Lake Superior Regulation Task Team and Study Board are planned with agenda to be developed and location to be

determined. Likely three-day meetings, first day for Task Team, second day joint Task Team/ Study Board and third day for Study Board.

- i. June 22-24 in Burlington;
- ii. September 21-23, location to be determined, but likely Romulus, Michigan.



Study Board Meeting #14

The Erie Boardroom

Hilton Windsor

277 Riverside Drive West, Windsor, ON N9A 5K4

Agenda

Day 1 – Tuesday, March 2, 2010

Item	Time	Topic	Lead
1	0900 - 0910	Welcome/ Review & Approve Agenda	Stakhiv / Yuzyk
2	0910 - 0920	Review Status of Action Items from Minutes of Meeting #13	Eberhardt/Moin
3	0920 - 0950	Timelines and products for the next phase	Yuzyk
4	0950 – 1015	PIAG status & Communication	Bruce/Powers/Nevin
	1015 - 1030	Health Break	
5	1030 - 1200	Update on Finances and Activities	Eberhardt/Moin
	1200 - 1245	Lunch	
6	1245 - 1430	Plan Formulation & Adaptive Management <ul style="list-style-type: none"> • Linkages and processes 	Stakhiv/Yuzyk
	1430-1445	Health Break	
7	1445 – 1715	SVP Case Study <ul style="list-style-type: none"> ▪ Decision Tree/Matrix 	Werick/Fay
	1715	End of Day 1	

Day 2 – Wednesday, March 3, 2010

Item	Time	Topic	Lead
8	0830 – 1000	Adaptive Management <ul style="list-style-type: none"> • Activities and update • Decision Tree/matrix • Board discussion 	Leger/Read
	1000 – 1015	Health Break	
9	1015 - 1200	Hydroclimate activities and update	Lee/Pietroniro
	1200 - 1245	Lunch	
10	1245 – 1430	SVP Case Study <ul style="list-style-type: none"> • Board discussion 	Werick/Fay
	1430 - 1445	Health Break	
10	1445 - 1545	SVP Case Study – Board Discussion (continued)	All
11	1545 - 1600	Board member round table, other business and next meeting(s)	All
	1600	Departures	

Action Items from 14th Study Board Meeting – Windsor, Ontario

No.	Description of Action Item:	Action Lead:	Due by:
1	Study Board will provide additional suggested reviewers.	Study Board	May 1 st
2	Study Team will again request clarification during April Hearings in DC as per the alerting letter to governments	Study Team	April 15 th
3	TWG Leads will be reminded to notify PIAG liaison of meetings/ teleconferences.	Study Managers	March 15 th
4	Contract for literature search for Paleo investigations.	Syed Moin	April 1st
5	List of all on-going hydroclimatic projects to be provided to the Study Team along with delivery dates.	Debbie Lee/ Study Managers	April 1st
6	Additional work proposed on optimization with multi-lake regulation.	Syed Moin	April 1 st
7	Identification of limits of regulation and actions beyond regulation listed along with agencies that could implement.	David Fay/ Bill Werick/ Wendy Leger/ Jen Read	Sept. 1 st
8	New guidelines for Study Board confirmation and teleconference set up to finalize.	Wendy Leger (new guidelines), Study Managers (teleconference)	April 1 st