

# Notes from the Twelfth Study Board Meeting

Hyatt Rosemont  
Chicago, IL  
9-10 September 2009

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## Day 1 -

### 1. Welcome/Attendance:

#### Board Members:

John Boland, Jim Bredin, Jim Bruce, Jonathan Bulkley, Don Burn, Allan Chow, Kay Felt, 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 (Day 2), Jim Nicholas, Bill Werick (Day 2)

#### Others:

Dr. Casey Brown, University of Massachusetts (Day 2); Rita Cestaric (for Elizabeth LaPlante), EPA-Region 5 (Day 2),

**Agenda is Attachment 1.**

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

### 2. Review of Status of Action Items (Tony Eberhardt):

- a. Status of six items given.
- b. Gene will discuss "Dredging" item later (Item 6).
- c. Awarding of the Rec. Boating contextual narrative is pending with contract proposal deadline of September 14, 2009.

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

- a. Comments on Phase 1 Report were received over a 90-day period (although the official period was 60 days).
- b. Independent Peer Review:
  - i. Eight reports were provided for review (Sub-Product Reviews). To date, six have been fully reviewed.
  - ii. Main draft report – recently received full report reviews from IPR co-leads. Synthesis reviews progressing.
  - iii. Process is working, but there were issues: quality of Study reviews varied, slower than planned for turn around (> 5 months), some reviewers inversed marking scheme, reviewers didn't always follow guidelines.
  - iv. Responses to Product Reviews are being prepared by TWG/Pis.

- v. Regarding the Draft Phase 1 Report, in general, the overall report got high grades. Areas for improvement: very technical limiting readership, need to ensure consistency from chapter to chapter, improve graphics.
- vi. Chapter Reviews:
  - 1. Chapter 4 – Sediment. Good grades, with limited revisions required.
  - 2. Chapter 5 – Hydraulics. Have yet to receive review, but anticipate limited required revisions.
  - 3. Chapter 6 – Hydroclimatology. Needs significant reworking to address comments.
- vii. Board members suggestions for modification of the report included:
  - 1. Provide an indication of the range of head change over different periods since 1962 to clarify the 23 cm figure;
  - 2. Provide more discussion of reconciliation of several different sediment studies;
  - 3. Consider adding a note that draws attention of governments to the fact that even though it is beyond our terms of reference, the conveyance capacity increase since 1962, follows a number of increases due to navigation dredging over the years;
  - 4. Ensure hydroclimatic trend analyses are for the same period (since 1962) as all other analyses reported.
- viii. Task Team met in Burlington on Sept 2-3 to discuss revisions and missing pieces (roughness information is still needed from Jim Best of University of Illinois). **Tony Eberhardt to follow up with Dr. Best.**
- ix. Completion of Phase 1 by October 1<sup>st</sup> is off the table. New deadline (not yet specified) will have to be discussed with IJC.

#### **4. Public Consultation (Jill Wingfield & John Nevin):**

- a. Opportunities provided:
  - i. Public consultation opportunities included Great Lakes Interagency Task Force and Great Lakes and St. Lawrence Cities Initiative.
  - ii. Face-to-face meetings in Toronto, Ottawa, Washington and Michigan.
  - iii. 17 public meetings held in May through July (~400 attendees).
  - iv. Web-cast.
- b. Outreach efforts – newspapers, personalized invites, community & organization newsletters, radio & TV.
- c. Response rate to questionnaire distributed at public meetings: 129 surveys returned, rate of response was 32%, responses varied by location.
- d. Coastal residents were the largest group responding (53%), followed by boaters and environmental.
- e. Most concerns expressed (as expected) were regarding water levels (16% fluctuating, 12% low, 9% high, 8% quantity – diversions, etc.).
- f. Lessons learned:
  - i. Conditions (closer to average water levels) likely reduced turn out.
  - ii. Local group notification boosts turnout.
  - iii. Advance visits essential to avoid potential problems.
  - iv. Flexibility is important.

- v. New media/ social marketing has growing potential and may attract younger audience (like Face Book).
- vi. Conferencing technology achieved objectives.
- g. Goal is to provide a report on the consultation process (what was heard and next steps) to the Study Board by the end of September. Decision will be made regarding commenter anonymity. **John Nevin and Jill Wingfield will compile the report.**
- h. Need some clarification on some comments received, e.g., National Wildlife Federation and Great Lakes United on whether this submission reflects individual opinions or the organization's. Need to clarify if they are supportive of the need for structures in the St. Clair River.
- i. Public Interest Advisory Group (PIAG) has requested that public comments be made available to them. The Board agreed these comments should be made available to PIAG and, once a response is complete, posted on the website (with the Board's response) for the general public. A decision will be made regarding commenter anonymity prior to making the comments public. IJC Staff and legal counsel have advised that the comments are records of the Commission; therefore, approval is needed before making them public and may be required prior to providing them to PIAG. **Jill Wingfield and John Nevin will follow-up with IJC and take appropriate action.**

#### 5. Explanation of St. Clair River Outflows & Lake Huron Water Levels (Syed Moin):

- a. Addressing claim of on-going 6 billion gallon per day (250 m<sup>3</sup>/s) loss:
  - i. There appears to be a misunderstanding between the conveyance capacity of the river and the actual flow in the river. Although the river's ability to convey water may have increased by about 6 BGD (250 m<sup>3</sup>/s) for a given set of Lake Huron and Erie levels, this does not mean there is 6 BGD more water now passing out of Lake Huron, since the effect of this increase of capacity roughly three decades ago has led to a decline in the level of Lake Huron and thus a reduction in the head difference between Lakes Huron and Erie. As a result, the amount of water now passing out of Lake Huron is nearly the same today, as it would have been without a change in conveyance capacity.
  - ii. An on-going 6 BGD, as claimed, would be equivalent to losing about 1.66 m or 5½ ft of water off Lake Huron in last 25 years.
  - iii. Conclusion: conveyance capacity has increased by 6 to 7 percent while the level of Lake Huron has declined about 10 cm and hydraulic slope has declined by 8 to 9 percent. Therefore, the net effect is small. It is not hydraulically possible for there to be a continuous 6 BGD loss of water.

#### 6. Outstanding Projects and Findings:

- a. Dredging History (Gene Stakhiv):
  - i. History compiled by Scott Thieme and Ralph Moulton.
  - ii. Synthesis of dredging compiled by Dr. Jason Giovannettone indicates that maintenance dredging has been very limited and restricted to a few specific reaches.
- b. Navigation Impacts (Gene Stakhiv):
  - i. Study conducted by Dr. Jennifer Waters of US Naval Academy. The features (small sand dunes/ripples, striations on the bed) may be a result of

navigation, but similar features also occur due to natural causes, so the assessment is not conclusive.

- c. Ice Jam Assessment and Modelling (Syed Moin):
  - i. Dr. Spyros Beltaos of the National Water Research Institute concluded that based on his expert opinion that the 1984 ice jam was significant enough to potentially erode the bed and possibly increase conveyance capacity.
  - ii. Dr. Hung Tao Shen of Clarkson University is conducting 2-D ice modelling. Preliminary results show a slight increase in velocity (1 m/s) during the ice jam event. Shear stress calculations will be performed at the ice jam location. This modelling effort will not be completed for a number of weeks.
- d. Sediment Sampling (Syed Moin): Bore hole data are available from 1971, 1989, 2001 Geoseadow, 2001 CCIW, 2006 and 2007. All data from events have been included in a spreadsheet. There are lots of issues with the data, so it may not be possible to draw any conclusions on bed composition and changes over time.
- e. HEC-RAS Sensitivity (Syed Moin): Three models: 2007 simulated single beam, 1971 and 2007 multi-beam. Model cross-sections are consistent. Sensitivity has been tested using various parameters (roughness, etc.). Base case represents a 9-cm change in water levels between 1971 and 2007. There is no change from the earlier analysis by Dr. Giovannettone.

## **7. Final Reports (Main & Summary) (Gene Stakhiv & Ted Yuzyk):**

- a. Tom Shillington is the report's Scientific Editor.
- b. Chapter 5 will be split to give GIA its own chapter.
- c. Acknowledgement section will be an Annex to the report.
- d. ACR Communications, Inc. was hired as graphic designer and printer.
- e. Next Steps:
  - i. Address and revise report based on peer review.
  - ii. Integrate findings from recent studies.
  - iii. Incorporate public perspective into final report.
  - iv. Finalize St. Clair Report – Main Report and Executive Summary Report.
  - v. Submit report to the IJC.
- f. The summary report may be formatted around Qs and As.
- g. The Board agreed that wording should be softened to reflect the uncertainty in the conclusions. Further studies regarding the 1984 ice jam may require rewriting, for example, to reduce emphasis. Another point that may be de-emphasized is that the river from 2001 is "stable", since these words may be unrealistically definitive given the paucity of available data.
- h. Study Board members will be assigned Chapters to review. **Ted Yuzyk to coordinate.**
- i. Summary Report will be written similar to the one produced this summer for the public. **Gene Stakhiv and Ted Yuzyk will draft summary.**
- j. Suggested new schedule: Summary to IJC by Nov. 15<sup>th</sup> with Final Report by Dec. 1<sup>st</sup>.

## **8. Closure of the St. Clair Component (Study Team):**

- a. Final Expenditures (Tony Eberhardt & Syed Moin):
  - i. Essentially all US funding for Phase 1 has been expended: \$1.749M (\$1.795M budgeted for St. Clair Studies and Hydroclimatic Group work). Although Hydroclimatic Group funds have been obligated, work will continue into

- remaining Study years for Phase 2 since, as planned, they have not been fully expended.
    - ii. For Canada, \$800,000 of Phase 1 funding will be carried over for Phase 2 work.
  - b. Acknowledgement will be sent to US Army Corps of Engineers, Environment Canada, US Geological Survey offices, etc. for assistance staff provided. Also, certain investigators/participants will get special recognition for providing exceptional work, over and above expectations.

## **Day 2**

### **9. Status of Lake Superior Task Team (Tony Eberhardt & David Fay):**

- a. Independent Peer Reviews (IPR): Concerns were expressed by some Board members regarding the process and the lack of time for Board member review of the documents before peer review. The Board review of these documents will continue. The Task Team and TWG Leads will prepare replies to IPR Group comments, which then go to the Directors for review before transmittal to the Study Board. Response should be complete before the IJC Hearings in October. **Tony Eberhardt and Syed Moin to coordinate responses.**
- b. Board discussion/ concerns:
  - i. Ecosystem TWG – status of activities (schedule, field work, IERM).
  - ii. Documents are being sent for peer review before internal review is made.
  - iii. The Nature Conservancy’s St. Marys Conservation Area Action Plan should be made available to the ETWG and rest of the Study Team.
  - iv. Concern that the differences in water levels with different regulations plans will not be large.
  - v. Board should communicate more frequently (scheduled teleconferences).
  - vi. Need clarification of qualifying terms like “most robust”, “most resilient” and “natural range”. Board should define its own criteria.
  - vii. Define “informed consent”. Explanation: Decision has to be a mutual one, analogous with medical decisions.
  - viii. Do we need economic performance indicators to make a decision? How do we qualify impacts under climate change conditions? Should the Study develop dollar values for ecosystems impacts?
  - ix. Ecosystem TWG doesn’t see Plan 1977-A as a big problem, perhaps with the exception of monthly flow changes affecting the St. Marys River.
  - x. Integrated Ecological Response Model (IERM) should be developed with full Board understanding. May require further Board meetings for development (additional documentation should be provided by Dr. Joe DePinto on IERM approach and rationale). **Bill Werick to follow-up with Dr. DePinto.**
  - xi. What issues should we be sensitive to? Seven “Circles of Influence” meetings have been held, more are needed.
  - xii. The Board will develop its set of Guiding Principles. **Wendy Leger to provide a first draft.**
- c. Updates on TWGs
  - i. Rec. Boating - Consider tourism agencies to help define impacts – also important for Adaptive Management strategy.

- ii. Need to send draft contextual narratives to the Study Board. Five of the six have been drafted. It was mentioned that Dr. Mark Dunning has been hired to coordinate all of the narratives. **Wendy Leger will provide (5 of the 6).**
- iii. Coastal - Proposals for flooding, shore protection and erosion (approved in principle at last Board meeting) will be provided electronically to the Board for final approval. **Tony Eberhardt to coordinate transmittal.**
- iv. IERM modelers met on September 3<sup>rd</sup> and scoped out new direction for IERM focused on establishing water level regime thresholds for various PIs. Need discussion with ETWG on the implication of IERM. Information from the literature review should be included to develop the model. Dr. Mackey will assist.
- v. Joint proposals for St. Marys River studies (hydropower scheduling and water allocation, 2010 sea lamprey experiments, smoother gate changes), were approved in principle. SOW will be refined with cost estimate and transmitted electronically. It is expected that the US Fish & Wildlife Service and Great Lakes Fisheries Commission will be key participants in the Sea Lamprey program. Dr. Tina Hall is the point of contact for The Nature Conservancy in Michigan that may support this proposal. **David Fay will submit revised SOW with input from TWGs.**

#### **10. Strategy for Economic Analysis (John Boland):**

- a. Purpose: To respond to peer review, the proposed economic strategy and provide an overview of economic analysis methods.
- b. Response to peer review: Detailed point-by-point comments were provided. These will be used for the Task Team response to the IPR Group.
- c. Proposed strategy was outlined. Economic advisors will offer specific tasks that the Board can follow in the short- and long-terms. They will provide a document to review options and a teleconference will be held to discuss. **Tony Eberhardt and Syed Moin will coordinate.**

#### **11. Analysis of Orders of Approval (David Fay):**

- a. Objective: IJC Directive requires the review the operation of structures and review of the Orders of Approval.
- b. The order of precedence within Article VIII of the International Boundary Waters Treaty of 1909 and statement recognizing existing uses were described.
- c. A review of the Orders and Existing 1977-A Criteria will be an item on the December Board meeting agenda.
- d. Jim Chandler will be reviewing the Orders for the Study Board and may be invited to the December meeting for his interpretation. The scope of his work will also consider the restrictions identified during the recent International Lake Ontario-St. Lawrence River Study.
- e. Practice Decision (Bill Werick):
  - i. A demonstration of results of various preliminary plans at a hypothetical future decision point (2012) was given.
  - ii. Proposal made of having an “on-line game” each month that Board members can use as a practice exercise to help inform decisions.
  - iii. Comments:

1. Defining “natural” levels is, and will become, an issue, since many man-made factors have been introduced over the last century.
2. Board requested a simulation of St Clair and Detroit River ratings that reflect the pre-27 foot dredging for the natural condition, and possibly earlier conditions. **David Fay and Bill Werick to follow-up.**
3. Propose having a quarter-day exercise at each Board meeting to practice the decision, define decision criteria such as terms like “equity”, to determine what information is needed in the decision making process, etc. **Material will be provided to the Board prior to meetings by Bill Werick.**
4. At each meeting, the Board will be asked to identify shortcomings, and items that need to be better defined (like “natural”).

#### **12. Adaptive Management (Wendy Leger):**

- a. Use 30- to 40-year planning horizon.
- b. Use a hazard-up rather than a forecast-down approach.
- c. Tasks 1 through 9 were described.
- d. Coping zone defined: A – preferred, B – difficult, C – serious negative consequences.
- e. Cost Breakdown: Year 3: \$190K, Year 4: \$355K, Year 5: \$105K (Total US and Canada \$650K).
- f. Board approved Tasks 1-5 and 7 and look for more detailed (2 page) proposals for Tasks 6, 8 and 9 for next Board Meeting. **Wendy Leger will provide the proposals.** The group will pursue agency involvement including Ontario Centre for Canadian Impacts and Adaptation Resources (OCCIAR).
- g. Board approved \$275 K Cdn and \$65K U.S. from uncommitted funds to begin Tasks 1-5 plus 7. Additional US funding will be identified depending on cost estimates within approved scopes.
- h. Propose getting other agencies involved to take the lead on non-regulation AM with Study support.
- i. An expert workshop (January 19-21, 2010) was proposed. The AM Group would like to engage the services of Bryan Tolson and Casey Brown for participation at the workshop and also within the AM Group.

#### **13. Communication Plan/ Strategy (John Nevin & Jill Wingfield):**

- a. A press release will be made describing the new release date for the Phase 1 report. IJC approval will have to be received. **John Nevin to prepare.**
- b. John Nevin will prepare wording to address beginnings of Phase 2. First public meetings on Phase 2 will likely take place in July 2010.
- c. Dan Tadgerson has resigned from PIAG and a potential replacement has been identified.
- d. Glen Nekvasil will be recommended to the IJC as a replacement for Jim Weakley.

#### **14. Finances & Restructuring (Ted Yuzyk): Proposed structure:**

- a. Finances will be refined and included for review at the December Board meeting. **Tony Eberhardt and Syed Moin to prepare documents.**
- b. Proposed organizational restructuring:

- i. Lake Superior Regulation Task Team (after completion of the Phase 1 Report): Tony Eberhardt & Syed Moin, US and Canadian Co-Chairs, respectively.
- ii. Plan Formulation: David Fay, Canadian Co-Lead. US Co-Lead to be selected.
- iii. Plan Evaluation: Bill Werick, US Co-Lead. Canadian Co-Lead to be selected.
- iv. Suggestion made to combine Plan Formulation and Plan Evaluation Groups into a Plan Formulation and Evaluation Group (similar to the ILOSLR Study) and make David Fay and Bill Werick Co-Leads of the consolidated group. Decision pending.
- v. Mitigation and Adaptive Management Group: Wendy Leger, Canadian Co-Lead. US Lead to be selected (possibly Elizabeth LaPlante of EPA-Region 5).
- vi. Data Verification and GIS TWG: Nannette Noorbakhsh, US Co-Lead. Canadian Co-Lead to be selected.
- vii. Hydroclimatic Group: Debbie Lee and Al Pietroniro, US and Canadian Co-Leads, respectively.
- viii. Economic Advisors: Steven Renzetti and John Hoehn.

**15. Schedule of Meetings:**

- a. Study Board Meeting on Dec. 9-10, 2009 in Windsor; PIAG meeting on Dec. 11<sup>th</sup>. Could be a conflict for Don Burn.
- b. If required, Study Team could attend the IJC Executive Session in DC on the morning of Dec. 8<sup>th</sup>.





## Study Board Meeting #12

### Hyatt Rosemont

6350 North River Road, Rosemont, Illinois, Tel: (847) 518-1234

<http://rosemont.hyatt.com/>

Wednesday, September 09 to Thursday, September 10, 2009

## Final Agenda

### Day 1 – St. Clair River Activities

Item	Time	Topic	Lead
1	0830 - 0845	Welcome/ Review & Approve Agenda	Stakhiv / Yuzyk
2	0845 - 0900	Review Status of Action Items from Minutes of Meeting #11 of March 30-31, 2009	Eberhardt/Moin
3	0900 - 1015	Updates from the Directors <ul style="list-style-type: none"> <li>▪ Sub-product Peer review</li> <li>▪ Synthesis &amp; draft report Peer Reviews</li> <li>▪ Baird analysis</li> <li>▪ Study responses to peer reviews</li> </ul>	Yuzyk/Stakhiv
	1015 - 1030	<b>Health Break</b>	
4	1030 - 1130	Public consultation <ul style="list-style-type: none"> <li>• Public meetings &amp; questionnaire</li> <li>• Formal public response</li> <li>• PIAG report</li> </ul>	Wingfield/Nevin
5	1130 - 1200	Explanation of St. Clair River outflows & Lake Huron water levels	Moin
	1200 - 1300	<b>Lunch (on your own)</b>	
6	1300 - 1430	Outstanding projects and findings <ul style="list-style-type: none"> <li>• Dredging history</li> <li>• Navigation impacts</li> <li>• Ice jam assessment &amp; modelling</li> <li>• Water level analysis</li> <li>• Bed material analysis</li> <li>• HEC-RAS sensitivity</li> </ul>	Stakhiv/Yuzyk Moin
	1430 - 1445	<b>Health Break</b>	
7	1445 - 1630	Final Reports (Main & Summary) <ul style="list-style-type: none"> <li>• Report cover &amp; layout</li> </ul>	Yuzyk/Stakhiv

		<ul style="list-style-type: none"> <li>• Process for finalizing each chapter</li> <li>• Time lines</li> <li>• Production</li> </ul>	
8	1630 - 1730	Closure of the St. Clair Component <ul style="list-style-type: none"> <li>• Final expenditures</li> <li>• Acknowledgement &amp; recognition</li> <li>• Folding of TWG</li> <li>• PIAG meeting at Semi-annual</li> <li>• Board round table</li> </ul>	Study Team
	1730	<b>End of Day 1</b>	

### Day 2 – Lake Superior Activities

Item	Time	Topic	Lead
9	0830 – 1000	Status of Lake Superior Task Team <ul style="list-style-type: none"> <li>▪ Status of activities</li> <li>▪ Approval of new projects</li> <li>▪ Outcome of Methodology Peer Reviews               <ul style="list-style-type: none"> <li>• Plan evaluation</li> <li>• Economic evaluation</li> <li>• Environmental evaluation</li> </ul> </li> </ul>	Eberhardt/Fay
	1000 – 1015	<b>Health Break</b>	
10	1015 - 1045	Strategy for economic analysis	Boland
11	1045 - 1200	Analysis of orders of approvals <ul style="list-style-type: none"> <li>• Implications for formulation, evaluation &amp; AM</li> </ul>	Fay Werick/Leger
	1200 - 1300	<b>Lunch (on your own)</b>	
12	1300 –1400	Adaptive Management <ul style="list-style-type: none"> <li>▪ What is the plan?</li> <li>▪ How much will it cost?</li> </ul> Board’s decision	Werick/Leger
13	1400 – 1430	Communication Plan/ Strategy <ul style="list-style-type: none"> <li>▪ Next phase</li> <li>▪ Circles of Influence</li> <li>▪ Control structures</li> <li>▪ PIAG membership</li> </ul>	Wingfield/Nevin
	1430 - 1445	<b>Health Break</b>	
14	1445 -1545	Finances Restructuring of TWGs & PIAG/Board assignments SharePoint access & use	Eberhardt/Moin
15	1545 - 1600	Schedule of Meetings Next Board Meeting December 7-11, 2009 in Windsor (tentative)	Eberhardt
	1600	<b>Departures</b>	

## Action Items from 12<sup>th</sup> Study Board Meeting – Chicago, IL

No.	Description of Action Item:	Action Lead:	Due by:
1	Follow-up with Dr. Jim Best regarding remaining contract activities.	Tony Eberhardt	September 15 <sup>th</sup>
2	Report on Study communication activities and public comments on Phase 1 Report	John Nevin & Jill Wingfield	September 30 <sup>th</sup>
3	Review of Phase 1 Chapters – assignments to Study Board members	Ted Yuzyk	September 30 <sup>th</sup>
4	Phase 1 Summary Report Outline	Gene Stakhiv & Ted Yuzyk	October 9 <sup>th</sup>
5	Coordination of replies to the Independent Peer Review Group on economic and ecosystem strategies	Tony Eberhardt, David, Wendy Leger & Bill Werick	October 15 <sup>th</sup>
6	Refinement of IERM development with Dr. Joe DePinto	Bill Werick	September 30 <sup>th</sup>
7	Simulation of St. Clair and Detroit River ratings with 27-foot dredging	David Fay & Bill Werick	October 15 <sup>th</sup>
8	Provide copy of draft “Guiding Principles” to the Study Board	Wendy Leger	September 30 <sup>th</sup>
9	Draft Contextual Narrative (all except Recreational Boating) to Study Board	Wendy Leger	September 30 <sup>th</sup>
10	Flooding and erosion scopes of work to the Study Board for approval	Tony Eberhardt	September 30 <sup>th</sup>
11	Refinement of the joint scopes of work for St. Marys River control structure operations	David Fay	September 30 <sup>th</sup>
12	Arrange for Study Board discussion with economic advisors on economic strategy	Tony Eberhardt & Syed Moin	September 30 <sup>th</sup>
13	Practice decision-making material to be provided to the Study Board	Bill Werick & Wendy Leger	September 30 <sup>th</sup> (and subsequent to future Study Board meetings)
14	Proposals regarding adaptive management tasks to be refined and provided to the Study Board	Wendy Leger	September 30 <sup>th</sup>
15	Press release regarding the new date for Phase 1 Report completion	John Nevin	September 20 <sup>th</sup>
16	Refinement of funding distribution	Tony Eberhardt & Syed Moin	October 15 <sup>th</sup>