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SCIENCE ADVISORY BOARD
Research Coordination Committee and Science Priority Committee
Joint Meeting

October 25, 2016 (8:30-12:00 AM)

Albert at Bay Suite Hotel
435 Albert Street, Ottawa, ON

Meeting Record

Attendees:

RCC: Norman Grannemann, Gavin Christie, Christopher Winslow, Christine Mayer, Deborah Lee, Ian Campbell, Kyle McCune, Michael Twiss, Patricia Chambers, Tareq Al-Zabet, Val Klump, Yves Michaud

SPC: Carol Miller, Jeff Ridal, Andrea Kirkwood, Bob Hecky (by phone), Christina Semeniuk, Clare Robinson, Dale Phenicie, Henry Lickers, John Livernois, Scott Sowa

IJC staff: Lizhu Wang, Matthew Child, Cindy Warwick, Glenn Benoy, Jennifer Boehme, Vic Service, Lauren Stokes, Antonette Arvai (by phone)

1. Introduction: Welcome and Review the Agenda

- The Co-Chairs provided welcome remarks.
- Round table introductions.
- Agenda is approved as is.

2. Report out on Great Lakes Public Forum

- 1) One of the Co-chairs provided a brief overview of the GLWQ Public Forum held in October, 2016.
 - During the forum there was a presentation on the State of the Lakes, which reported on the progress made toward achieving the Agreement objectives using ecosystem indicators on the status and trends in conditions of the lakes broadly across the basin.
 - Each Annex also reported the actions and progress made. The RCC Co-chairs provided an overview for each Annex.

- IJC held public meetings on the Progress Report of the Parties.
- 2) More specific comments from SAB members:
 - Engagement of First Nations, tribes and Metis was important; traditional ecological knowledge is identified as an area that needs more attention and effort.
 - There needs to be a closer tie between human health and the changing water quality of the Great Lakes. The institutional structure under the GLWQA has matured, and continues to mature. To solve complex problems the structure needs to embrace the complexity.
 - It was mentioned that it may not be easy for the public to translate and make connections from indicator information to actual progress.

3. Overview of current and upcoming SPC activities

1) Information Coordination and Flow:

- The goal of this project was to identify barriers of the flows of information, support management and policy decisions.
- Focuses on 6 components of information flow: setting goals, collection of data, data management and delivery, data analysis, knowledge management and delivery and information management and delivery.
- Identify and address past standards for information coordination; establish a new process 'information flow audit'.
- This project will compile an inventory of past and ongoing efforts that are trying to break down barriers of information flow—there are over 100 programs and efforts exist on data and information collection management and delivery (over 60% programs/efforts focused on data collection and management); will develop an information flow assessment process.
- Preliminary Recommendations:
 - More equitable investment across the information supply chain.
 - Put in place collaboration needed to integrate ecological and socioeconomic indicators.
 - Establish neutral binational programs and collaborative governance.
- Conclusions:
 - Barriers are an issue: More coordination and coherence is needed.
 - There is a lack of integration. For example: invasive species data often cannot be compared across state lines. The lack of

integration between ecosystem and social economic data was also mentioned.

- A contractor report has been produced. The workgroup is preparing a summary report.

2) Fertilizer Application:

- Focuses on the issue of relative contribution of inorganic fertilizer vs. manure as phosphorus sources to the Western Lake Erie Basin. Assesses potential of existing watershed models to distinguish contributions to the lake and the potential of current monitoring programs to quantify contributions to the lake.
- Objectives: Identify knowledge gaps; including helping improve the potential for management response to reduce loadings.
- Next steps: Conference call of co-chairs and staff with contractor; November 14 (tentative) kick off meeting of the full work group in Ann Arbor to clarify tasks. Periodic conference calls (5-6 calls with full workgroup).

3) Energy Transport

- Overview: Initial consideration of power generation broadly, fossil fuel transport (in particular oil), and potential changes in modes of power generation in near term and long term; topic was narrowed in Summer 2016: workgroup now focuses on potential impacts of unrefined hydrocarbons on Great Lakes water quality and ecological processes, and the relative risk of different petroleum transport modes; scoping of parallel efforts by agencies and others is a central task of the workgroup.
- Project status: External work group participants have been identified and initial contact has been made; science synthesis to be carried out by a contractor under supervision of energy transport workgroup; statement of work sent to IJC in early July- put on hold, hope to see a contract early this fiscal year, with work completed by Summer 2017.

4) Declining Lake Productivity

- Overview: Focuses on the re-eutrophication of the Great Lakes nearshore and embayments following success of the original GLWQA, and declining offshore lake productivity. Work group members will be recruited once the project is approved.
- Objectives: Assess implications of P load reductions and productivity of the offshore regions of the Great Lakes, including impacts on fish production/biomass and contaminant concentrations in fish.

- Project status: Work plan developed. November 2017- May 2017: confirm work group, develop scope of work, confirm contractor. May 2017- December 2017: complete literature review, synthesize data, review models and complete forecasts. January 2017 - March 2018: reporting, including gaps and recommendations.

4. Overview of current and upcoming RCC activities

1) Future improvement on Great Lakes Indicators

- The Future Improvements to Great Lakes Indicators report is based on the information from the two contractors' reports. One of the contractor's reports conducted extensive investigation on indicators' data availability and accessibility. The other contractor's report summarized results of a binational expert workshop that focused on identifying how the indicators used for the State of the Great Lakes report can be improved.
- The report made eight recommendations to IJC and the Parties.
 - (a) Using source water instead of treated drinking water for the human health sub-indicators to measure the health of the Great Lakes as a source of drinking water.
 - (b) Adding total phosphorus, dissolved reactive phosphorus, and nitrate-nitrogen concentrations as indicator measures for Great Lakes nearshore zones.
 - (c) Adding loadings of total phosphorus and dissolved reactive phosphorus from the major Great Lakes tributaries.
 - (d) Adding nearshore predators' abundance and recruitment to better assess the health of food webs.
 - (e) Reporting on progress in Asian carp monitoring and prevention.
 - (f) Addressing data gaps for appropriate indicators that have only partial data or no data by establishing a long-term focused sampling program.
 - (g) Standardizing assessment methods and data sources used to increase consistency in assessing long-term trends and detecting changes in lake health status.
 - (h) Overhauling data management and sharing by collating data used in past assessments of progress in a centralized, publicly accessible location.
- The report has been approved by the Commissioners during the October Executive meeting.

2) Research Inventory

- The goal of the project is to develop an improved research inventory system to increase the quantity and quality of information on Great Lake research using up to date technology.
- A contractor has been hired. The contractor is doing the technology side. There is a need for integration and help him to identify research projects for both Canada and US in the Great Lakes region.

3) Great Lakes Adaptive Management Priority

- A white paper entitled “Opportunities for Implementing and Sustaining Science-Based Adaptive Management for Scientific Research and Ecosystem Management” has been developed.
- The white paper lays the foundation for science based adaptive management as an institutional framework; reviews current adaptive management case studies to identify success stories, gaps and shortfalls; presents lessons learned and recommendations to guide RCC in moving adaptive management forward as an institutional framework in the conduct of Great Lakes research and management.
- The white paper identifies that RCC can help by coordinating ongoing scientific research management and ecosystem management under existing authorities and institutional frameworks; providing guidance to CSMI, research vessel management to address identified research and data gaps in performance indicators; bringing together modeling approaches to advance ecosystem forecasting and management; and inventorying/identifying ‘levers’ needed to pull to affect ecosystem management.
- RCC will develop a draft work plan by January for Commissioners’ consideration in April 2017.
- The work plan will include surveying modeling approaches to inventory/identify “levers” needed to “pull” to affect 40% reduction in phosphorus loads to West Lake Erie Basin.

4) Great Lakes basin-wide modeling

- The proposed ideas: To help the coordination on modeling; to address some other items in conjunction with the data challenge - models that will be developed for water in whole Great Lakes basin; and determine how to integrate groundwater better within the understanding of the water cycle.

- Project rationale:
 - While groundwater is a major part of the water cycle, its impact on water balance and water quality of the Great Lakes has never been assessed. Getting a better understanding of the groundwater component of the water cycle is necessary to obtain a complete picture;
 - As the GL are acting as discharge areas of the surrounding regional aquifer systems, groundwater flow and composition can strongly impact/regulate the health of the Great Lakes ecosystems;
 - Since there is an undisputed relationship between surface water and groundwater, they are commonly treated as two completely different resources. This work plan proposes to assess the feasibility of a fully-integrated water model for the GLB, in support of GLB adaptive management process;
 - This assessment could take the form of a gap analysis workshop which will aim at 1) identifying integrated modeling approaches that would allow the combined representation of surface and subsurface hydrological processes impacting the GLB water quality and ecosystem health; and 2) propose a detailed plan on how to develop such a modeling platform.
- Tasks:
 - Organize the logistic and the content aspects of a two-day workshop on modeling in the Great Lakes; to be held in an institution (University or Agency-based) located in the central portion of the Great Lakes Basin (between Toronto and Chicago);
 - Provide the assistance of a facilitator for the presentations and breakout group discussions;
 - Prepare a report documenting the discussion and outlining the principal conclusions and recommendation for a path forward.
- Outputs: The outcome of this project will be a report that documents the workshop findings and outlines the principal conclusions and path forward for a binational approach on water modeling.
- RCC will develop a draft work plan by January for Commissioners' consideration in April 2017.

5. RCC-SPC joint project – Great Lakes Early Warning System

- This project will enable the IJC, through the Science Advisory Board, to contribute to achievement of the Agreement by providing advice and recommendations to the Parties on emerging stressors and threats that

- warrant additional attention, as well as stressors and threats that are known but not receiving adequate science and management attention.
- Tasks: Synthesis of current knowledge and assessment of existing initiatives; develop and apply a framework to detect and identify emerging stressors and threats; conduct a binational expert workshop to apply the framework developed earlier for confirming emerging stressors and threats and methods to detect and identify unknown stressors.
 - Discussion:
 - Consider the diversity of early warning systems that already exist for a variety of sectors, including law enforcement, financial services.
 - Consider relationship to indicators, most of which are not forward looking.
 - Consider communication of warnings - how to put the warnings in words that people understand.

6. *Triennial Assessment of Progress*

- TAP Team provided a briefing on the TAP process.
- It will consist of a main report (~70 pages) and a technical appendix (~250 pages).
- Seeking comments on the technical appendix.

7. *Other Business*

Topics mentioned:

- Best in science initiative (Provincial funding opportunity mentioned by Tareq Al-Zabet)
- Henry Lickers mentioned that the SAB should attend Thunder Bay WQB meeting on traditional ecological knowledge.

8. *Adjourn*
