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**SCIENCE ADVISORY BOARD
Research Coordination Committee**

Alt Hotel, Room Orange
185 Slater Street, Ottawa, Ontario K1P 0C8

October 24, 2018, 1:00 – 5:00 PM

Remote Participation
Toll free dial in number: 1-877-413-4781
Conference ID: 956 2917

Meeting Record

Attendees:

RCC: Gavin Christie, Chris Winslow, Ian Campbell, Kyle McCue, Michael Twiss, Patricia Chambers, Rebecca Rooney, Sandra Eberts, Val Klump (by phone), Yingming Zhao, Yves Michaud

IJC Staff: Lizhu Wang, David Burden, Victor Serveiss

Meeting Notes:

1. Welcome & introduce new RCC member
 - The Co-Chair welcomed everyone to the meeting and introduced a new binational member from IAGLR.
 - Approved draft agenda as presented

2. Priorities in development - Description of the Great Lakes Science Plan
 - Project description:
 - Great progress has been made in improving ecosystem health of the Great Lakes, yet significant challenges remain for fully meeting the drinkable, swimmable, and fishable use of the waters.
 - New pressures affect the region, including climate change, novel chemical pollutants, urbanization, agricultural practices, and invasive species. In many instances, the system bears little resemblance to that of the end of the last century. At the same time, there is a demand to increase water uses in the basin including

- removal of groundwater. In many cases there is little or no science to guide us in the policy decisions required parsing the problems posed by these new pressures.
- There is a strong consensus within the Great Lakes research community that supports for scientific research has not kept pace with the need for fundamental, process-oriented investigation and exploration, and that consequently we lack basic information and the understanding needed to forecast change, mitigate impacts, and restore and preserve the Great Lakes.
 - The idea of development of decadal scale, binational program of Great Lakes research is not new. There are many examples from the marine systems.
 - This work plan borrows the idea from the US subcommittee on Ocean Science and Technology with modifications that fit to the Great Lakes.
 - The Content of such a Science Plan should contain at least 9 components (see draft work plan for details).
- Discussion – how to fund basic research
 - The Great Lakes Commission is interested in this topic.
 - It should be possible to answer how much an average person is willing to pay for the value they get, which can be conducted during the IAGLR or Healing Our Waters conference.
 - This work needs an infrastructure that includes a business plan and science plan – IJC could be the leader of science plan, and the parties lead the business plan.
 - The USGS has developed a science plan to figure out what is needed first; then it developed an implementation plan.
 - During the last IAGLR survey, 94% people surveyed agreed that we need to fund more basic research. We need to know what the ratios of scientists, managers, policy makers, and publics are among the surveyed population. If other people is willing to help, we may be able to take this to the funders;
 - Some information is available about how much GLRI has spent on basic science related to how the system functions; governments have spent a lot on monitoring, but very little on basic research.
 - Discussion – GLRO director’s comments
 - We are a science agency, but we do not have a science plan; now it is a proper time to identify what is needed to answer questions on what drinkable, swimmable, and fishable water should look like.
 - There will be an announcement of the Great Lakes and St. Lawrence Collaborative, which is organised by five organisations, including the Great Lakes and St. Lawrence Cities Initiative, the Great Lakes Fishery Commission, the Council of the Great Lakes Region, Freshwater Future Canada, and Strategies Saint Laurent (<https://www.wireservice.ca/index.php?module=News&func=display&sid=24151>).

- IJC wants to be a facilitator of the science plan, and we should have a vision on how to coordinate with the funding agencies such as USGS, EPA, NOAA, States/Provinces, DFO, and ECCC, etc.
 - We also need a component in social economics, which is a key missing piece. We are working with the GLFC and GLC to address this.
- Discussion - funding the work plan:
 - Commissioners stated that they are not ready to approve any work plan at the Semi-annual meeting.
 - The approach we are taking now is to rank all the work plans. We do not need to submit everything to commissioners. We need to identify what we want to fund first and stag them out. We want to put some work plans in front of the current Commissioners, and to put the rest of the work plans in front of the new commissioners.
3. Priorities in development - Development of Basin-Wide Hydrogeological Conceptual Model
- Project description:
 - Basin scale conceptual model is the need, but currently not available. There are localized conceptual and numerical models, and no large scale or basin-wide ones.
 - This proposed work will not include data harmonization part since it is too large an issue to be handled at the same time.
 - The tasks of this project include:
 - Development of a management framework that (1) incorporates stakeholder feedback on water-budget-related questions of interest; (2) prepares a catalogue of ongoing basin-wide government or university work that could advance a basin-wide modeling effort; (3) compiles a list of agencies with the capacity to carry out basin-scale modeling work; and (4) recommend a long-term role for the IJC with respect to an integrated basin-wide surface and ground water model for the Great Lakes Basin.
 - Development of a hydrological conceptual model that (1) compiles hydrologic data and information from open sources from which to build a hydrological conceptual model for the entire Great Lakes Basin; (2) develops and describe the conceptualization of the Great Lakes Basin hydrological system that can serve as a guide for numerical modeling of the system; and (3) drafts a manuscript describing the conceptual model to enable future citation during numerical model development.
 - Discussion:
 - It was asked that if there is any link to Great Lakes future project. It is responded that this group has participated. These two groups may benefit to each other.

- It explained that it is not a numerical model. Numerical models will need to be developed in phases, which need to be funded by somewhere else. This can be recommended to the Parties to develop such models and Annex 8 may be able to implement it.
 - This framework provides foundation for numerical models, which could be nested models;
 - It is agreed that RCC wants to submit this work plan to the Commissioners for approval.
4. Priority in development - Operationalizing an Early Warning System for the Great Lakes
- Project description:
 - During the 1st phase of the project, it synthesized current knowledge of existing early warning systems through a literature review, IAGLR special session, interviews of a focus group, and a workshop; and identified and tested a framework for detecting and identifying emerging stressors and threats. Focus was on organizational framework. An early warning system, however, must be driven by appropriate data and information that can lead to subsequent actions that lead to remediation of the threats.
 - This new work plan proposes to focus on the development of an approach to analyze the component of the Early Warning System developed during the 1st phase, including a set of preferred risk assessment protocols and analytical procedures to evaluate potential threats.
 - Discussion:
 - The 1st phase of the work proposed options on how to handle issues. Currently, early warning system is not the responsibility of any agency, but is an emerging concern. This work demonstrates impacts, documents response mechanism, and proposes who should be leading to carry the responsibility.
 - The 2nd phase is a kind of pilot to assess the probable effects of a set of different classes of known and unknown threats using a risk analysis approach to identify the likelihood and severity of potential stressors and threats and identify priorities.
 - We may want to wait until the discussion of the SAB meeting to make decision.
 - It was asked about how this SAB work fits to the WQB's work. It is responded that the WQB proposal has been distributed to all. The two board projects have different focuses.
 - It was suggested that we may want to organize a special session at IAGLR to educate public on what to advise and gather ideas to identify new threats.
5. Work plan has been submitted - Great Lakes Agriculture and Nutrient Issues
- Work plan status:

- This work plan has been distributed and discussed during the last RCC meeting. There is no modification.
 - The work plan has been submitted to the Commissioners during the October IJC Executive meeting, but the Commissioners indicated that they will not make decision until the Great Lakes Regional Office has a rank for all the board projects. Decision could be made by the end of November or early December.
- Discussion:
 - Dave Allan from SPC volunteered to serve on the workgroup.
 - It was asked if the project can identify why some BMPs work while others do not. It is responded that the project is not to evaluate BMP effectiveness, but to conduct an inventory of BMP research and researchers.
 - There is a need to establish a website where farmers can find what BMPs work for what situations. This is not a component of the project. The agriculture colleges may be a good place for this.
6. Update on the current RCC activities – Great Lake Nutrient Adaptive Management
- The workgroup has received the final report from the contractor. It is very thorough, technical, and long.
 - The workgroup has decided to generate a summary report. A team of GLERL has been taking the lead on this effort.
 - This work may contribute to the 2020 TAP report.
7. Update on the current RCC projects – Great Lakes Surface and Ground Water Model Integration
- The workgroup has received the final report from the contractor.
 - The final report has incorporated the input from RCC.
 - RCC has decided that the report will be used as a RCC board report.
 - The report with a cover letter from RCC has been submitted to the Commissioners during the October IJC Executive meeting and has received approval to be transmitted to Annexes 8 and 10, and put on the SAB website with a news release.
 - The Commissioners have agreed to have a webinar to learn more details about the findings of the project, which will be held in November.
8. Update on the current RCC projects – Great Lakes Early Warning System
- The core workgroup has received a draft of contractor report and provided feedback. The contractor will submit the final report by the end of November.
 - The core workgroup feels it needs to produce a summary report to be submitted along with the contractor report.

- The core workgroup will produce an outline and discuss it with the entire workgroup, with a target date of producing the summary report by April 2019.

9. Update on the current RCC projects – Great Lakes Connecting Channel

- This project is just under way, with a contractor established in September.
- There is very limited information on water quality about the connecting channels.
- Few people or organizations have the resources, equipment or training to sample large river-like connecting channels. The U.S. Geological Survey is an exception in that it offers training to its hydrographers for collection of sediment and water-quality samples with large samplers from boats on large rivers, such as the connecting channels.
- The work group will have monthly calls with the contractor.
- The targeted completion date of the project is October 2019.

10. Update on the current RCC activities – Cooperative Science and Monitoring Initiative

- RCC has supported the Cooperative Science and Monitoring Initiative (CSMI) workshops for identifying research and management priorities for Lake Ontario in 2016, Lake Erie in 2017, and Lake Michigan in 2018.
- RCC will also support a data sharing and analysis workshop for Lake Ontario in 2019.
- The plan of supporting Lake Superior for identifying research and management priorities in 2019 is under way.
- The Lake Partnership and Annexes 10 and 2 have highly valued the support of IJC to the CSMI process.
- The following CSMI schedule (from Lake Michigan workshop) was provided to RCC for reference:

CSMI Steps	2016	2017	2018	2019	2020	2021
Year 1 - Priority Setting	Lake Ontario	Lake Erie	Lake Michigan	Lake Superior	Lake Huron	Lake Ontario
Year 2 - Planning	Lake Huron	Lake Ontario	Lake Erie	Lake Michigan	Lake Superior	Lake Huron
Year 3 - Field Year	Lake Superior	Lake Huron	Lake Ontario	Lake Erie	Lake Michigan	Lake Superior
Year 4 - Analysis	Lake Michigan	Lake Superior	Lake Huron	Lake Ontario	Lake Erie	Lake Michigan
Year 5 - Reporting	Lake Erie	Lake Michigan	Lake Superior	Lake Huron	Lake Ontario	Lake Erie

11. Report on TAP workshop and the linkages of priorities with TAP

- RCC Co-chair went over the slides that were presented during the TAP workshop held on October 23.
- Commissioners approved TAP Study Board Directive.
- Study Board has selected two priority topics - Nutrients and Climate Change as the focus areas.
- Commissioners are supportive of the two priority topics selected by the Study Board – nutrients and climate change, and would like to further explore how these topics could be related to infrastructure and human health.
- Commissioners are also interested in the prevention principle and approach related to chemical contamination of the Great Lakes.
- RCC members are supportive to the selection of the two areas, and curious if these priority areas may change when the new commissioners are on board.

12. Plan future meetings

- RCC will have a scheduled joint meeting with SPC on October 25.
- It was discussed for potential future meetings. It was decided to explore the possibility to have a RCC in-person meeting in February 2019 in addition to the in-person meetings during the two Semi-annual meetings.
- Li will send a Doodle Poll for the 2nd week of February for identifying two half-days for this meeting.

13. Other business

- None

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DRAFT AGENDA

<i>Time (ET)</i>	<i>Agenda Item</i>	<i>Lead</i>
1:00-1:10	2. Welcome & introduce new RCC member Approval of draft agenda	RCC Co-Chairs
1:10-3:00	14. Priorities in discussion <ul style="list-style-type: none"> • Great Lakes science plan (Attachment 1; Val/Michael, draft work plan) • 2nd phase of surface and ground water modeling integration (Attachment 2; draft work plan, Sandy/Yves) • 2nd phase of Great Lakes early warning system (Attachment 3; Michael) • Great Lakes agriculture and nutrient issues (Attachment 4; Ian, final work plan). • Others 	RCC Co-Chairs Work Group Co-Chairs

3:00 - 3:15	BREAK	
3:15-3:45	<p>15. Status of current RCC activities</p> <ul style="list-style-type: none"> • Agricultural nutrient management BMPs – submitted to the IJC (Ian) • GL Nutrient Adaptive Management – (Attachment 5-Contractor final report, Debbie/Gavin). • GL Surface and Ground Water Model Integration (Yves/Sandy). • GL Early Warning System (Michael) • GL Connecting Channel (Michael) • CSMI (Val, Chris, Michael) (Attachment 6, CSMI Cycle) 	Work Group Co-Chairs
3:45-4:15	<p>16. Input to TAP and link priorities with TAP (Attachment 7)</p>	RCC Co-Chairs and all
4:15-4:45	<p>17. Plan future meetings</p> <ul style="list-style-type: none"> • Joint SAB meeting with the SPC – Oct 25 • Future RCC in-person meeting 	RCC Co-Chairs and all
4:45-5:00	18. Other business	RCC Co-Chairs and all
5:00	19. Adjourn	