
International Joint Commission
Canada and United States



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**SCIENCE ADVISORY BOARD
Research Coordination Committee Meeting**

October 25, 2017 (8:00am to 11:30pm)
The Metcalfe Hotel (Bronson Room)
123 Metcalfe Street, Ottawa

Meeting Record

Attendees:

RCC: Gavin Christie, Norman Grannemann, Chris Winslow (by phone), Erich Emery (by phone), Ian Campbell, Kathy McKague, Kyle McCue, Michael Twiss, Patricia Chambers, Sandra Eberts, Val Klump (by phone), Yves Michaud

IJC Staff: Lizhu Wang, Mark Burrows, Trish Morris

1. Welcome/Round Table Introductions/Approval of Agenda

- The Co-chairs thanks all for making the effort to participate in the face-to-face meeting.
- The Co-chairs provided a warm welcome to the new member from Ontario Ministry of Environment and Climate Change.
- Due to other mandatory government obligations, the new U.S. SAB-RCC Co-chair Deborah Lee is not able to attend this meeting.
- Draft agenda (attached) is approved as is.

2. Review Priorities Has Been Submitted and to Be Submitted

(1) Great Lakes Connecting Channels.

- Connecting channels are important habitat and energy, biological hot spots, included in the GLWQA LAMP as part of Great Lakes waters, and where several AOCs are located.

- Connecting channels are sensitive to changes in water levels, which in turn, affects water quality and they have more intimate contact with the nearshore environment than the larger lakes; thus, connecting channels serve as intersections in the Great Lakes ecosystem.
- CSMI and LAMP calls for inclusion of connecting channels.
- What constraining monitoring of connecting channels is they are large rivers that are difficult to sample.
- This work plan proposes to review of water and habitat quality issues facing the connecting channels, synthesize current knowledge and assessment of existing initiatives, assess current institutional capacity to design and conduct connecting channel surveillance and monitoring programs, and identify needed infrastructure to facilitate future connecting channel surveillance and monitoring programs
- **Discussion:**
 - More work on connecting channel may exist and we may not know; Ontario (OMECC) has done a lot of work, but data have not been synthesized and integrated; there is a need to create an inventory on the work done by OMECC, and to design institutional monitoring capacity and technology.
 - Lake Erie CSMI includes connecting channels. Connecting channel work can be done as an inventory of reviewing program and identifying problems and gaps, as well as analysis, which can be done by steps.
 - Chicago Canal needs to be recognized, but is not included in this work plan.

(2) Great Lakes Agriculture and Nutrient Issues

- The work plan lead has not had a lot of time to work on this yet, but will have someone to work on this soon.
- There is a low awareness on nutrient management in agricultural land; there is a lot of knowledge outside of the basin.
- The work plan will focus on nutrient reduction at source and beneficial management.
- There are a lot research on BMPs, but less research in the Great lakes basin; there are examples of BMP in Canada, which has been beneficial to agricultural practice; inventory of BMP research outside the basin in North American will benefit to the basin;
- The project will conduct a survey on BMP research done by major universities and government agencies.
- The contract will be relatively small with \$40,000-50,000.
- **Discussion:**

- This study will be also useful for researchers who are looking for study sites;
- This work does not include data analysis, but includes only BMP research; aquaculture is not included.
- We need to not only consider reducing inputs, but also need to identify hot spots; we want to identify areas where there is no need of P application; P may have not been applied at the right depth/time/amount/location and need a strategy to address this; the solution to the issue cannot be just not applying P; the key is to learn how to handle this issue;
- An example is manure trading; if someone have too much manure to be used in their farm, the farmer has to pay someone to take the manure away;
- BMP is related to what should be done at hot spots;
- It will focus on what is going on with research, but will not produce a ranking of BMPs.
- This work may also relate to the IJC's nutrient workshop effort that will be discussed during the Co-chairs meeting.

(3) Recommendations to Sustainable Restoration of the Great Lakes

- This topic has been in discussion since April in-person meeting. Support for scientific research on the Great Lakes has not kept pace with the current and future need for fundamental, process-oriented investigation and exploration;
- We too often lack basic information and the understanding required to document and forecast change, mitigate impacts, and restore and preserve the Laurentian Great Lakes ecosystem.
- The write up that we have needs more detail on monitoring and research, as well as on distinguishing monitoring from research.
- It needs a few paragraphs on risk assessment and data needs.
- **Discussion:**
 - We may also consider connecting research with management; add model challenges to the section addressing data acquisition and challenges;
 - There are two types of research: one is pure research and the other is policy related research; it is challenge to do both, and now we do more on latter. The goal of the document is to show how they are related;
 - Funding and administration – may want to combine US and Canada; it should be a binational effort; GLRI is a big one for basic science; using GLRI to put this into perspective;

- The 1st phase of the work is to create a white paper; the 2nd phase is to ask the governments to put money in place for basic research;
- This may not be a long document; the plan needs to be clearly laid out;
- It needs to set a timeline in order to put this into practice, e.g. a decade. It needs to identify what questions need to be answered; we need to be up front with problems, but not avoid them;
- May want to organize a session at the next IAGLR; need a Session proposal; Michael, Ian, Val, and Li are volunteered and Sandy can help;
- We need to develop a template for the white paper with research agenda and identified questions.

3. Overview of Current RCC Activities

(1) Great Lakes Nutrient Adaptive Management

- The contractor has been selected; Dr. George Arhonditsis and his team from University of Toronto is the contractor;
- The workgroup had a project kickoff conference call on Oct 13, and the next workgroup call will be on Nov 16, 2017.
- The goal of the project is to develop a process of using modeling approach to effect ecosystem management through an adaptive management framework, and to answer questions on where the gaps are in modeling from the watershed to the lake and how models can be used in an adaptive management framework.
- The deliverables of the project included:
 - A detailed inventory of models capturing characteristics to determine usability in an adaptive management framework.
 - Present a graphical representation of available models in relationship to one another to achieve a whole ecosystem model for assessing and predicting outcomes of management actions in an adaptive management framework.
 - Identify “levers” that correlate to potential management actions and assess the main sources of uncertainty in key variables.
 - Provide advice on how progress towards P reduction goals can be measured and communicated in an adaptive framework.

(2) Great Lakes Surface and Ground Water Model Integration

- The contractor has been selected; The Envirings is the contractor;

- The workgroup had a project kickoff conference call on Oct 12, and the next workgroup call will be on Dec 7, 2017.
- It has been decided that the project will hold its workshop in April in Ann Arbor.
- The project focuses on how to develop a platform and why it is needed; The product could be a model or a set of ensemble models;
- Ground water boundary may differ from watershed boundary;
- Although the project is only one year, it will be a long journey to implement the plan/vision developed by this project;
- The workgroup includes both RCC and SPC; Sandy Eberts will take over Norm's role; Kathy McKague has joined the group;

(3) Great Lakes Early Warning System

- This is a joint project between RCC and SPC, which also involves WQA and HPAB and external members;
- A contractor has been selected; A team of AECOM and LimnoTech is the contractor;
- The objectives of the project are to:
 - Synthesize current knowledge and approaches of environmental early warning systems and evaluate their applicability to the Great Lakes;
 - Develop a conceptual framework for a Great Lakes early warning system (including a procedure to identify threats ranging from those that are just over the horizon and may not yet be known to those that are anticipated with some degree of confidence).
 - Organize an experts workshop to verify a list of current and potential Great Lakes stressors and threats including their extent, likelihood and severity; apply the framework to a case study;
 - Make recommendations to IJC about a framework for identifying and ranking emerging threats.
- **Discussion:**
 - The Ontario Ministry of Environment and Climate Change collected a lot of relevant data, but it is uncertain how these data can be used. They could potentially be used for flagging the early warning risk and detecting unknowns.

(4) Lake Erie CSMI Workshop

- The Lake Erie CSMI Workshop for identifying management and research priorities for the 2019 sampling year was held on Oct 11-12, 2017, at Maumee Bay State Park; there were over 70 participants; the workshop is funded by IJC through RCC;

- Before the workshop, the organizers conducted a survey that identified 47 issues; the organizers organized a experts meeting to put these issues into larger 4 theme areas;
- During the workshop, participants worked from the 4 theme areas:
 - Theme 1 - Nutrients and Eutrophication (Land issues)
 - Edge of field issue
 - Gaps in modeling data
 - Phosphorus transport
 - Theme 2 - Nutrients & Eutrophication (In-lake issues)
 - Modeling & assessment needs
 - HABS toxicity & distribution
 - Benthic algae (*Cladophora*) & Submerged aquatic vegetation
 - Theme 3 - Food web/habitat/fisheries/invasive species
 - St Clair/Detroit River system & critical habitat
 - Fisheries, fishes, habitat (+ AIS)
 - Production & food web
 - Benthic considerations (+AIS)
 - Theme 4 - Chemicals of concern, contaminants, sediment dynamics; other issues
- The workshop developed key questions and monitoring needs, which will be built for coordination and collaboration, data sharing, and social media.

(5) Research Inventory

- The objectives of the project are to develop an improved Research Inventory System to increase quantity and quality of information captured on Great Lakes research related to the GLWQA; update user interface, data displays and search features; and improve security and data integrity.
- The project captures information on projects studying physical, chemical, biological, and human health topics in Great Lakes basin; and provides a portal to other databases, such as networking tools for researchers and information on resource expenditures.
- The contractor of the project is Kenjya-Trusant Group, LLC with the web developer Mr. Leo Martinez.
- The web-based program is available for testing; the next step is to test, finalize, and launch the new site by early 2018.

4. Preparation for Board Appearance, Plan for Future Activities, and Next In-Person Meeting

- Went over the draft slide set; assigned RCC members to present each of the presentation sections.

- Due to the other obligated responsibilities, Canadian Co-chair, Gavin Christies, could not attend the Board Appearance; Norm Grannemann agreed to lead the discussion.
- Due to time limitation, plan for future activities and next in-person meeting topics were not discussed.

5. Recognition of Norm's Service and Contribution

- RCC Canadian Co-chair presented a recognition and service certificate signed by the RCC co-chairs and SPC co-chairs, and a gift card from RCC to Norm;
- IJC Great Lakes Office (GLRO) Director, Trish Morris, presented a token gift bag to Norm;
- RCC Co-chair and members, as well as GLRO director, thanked Norm for his over 9-year service and contribution to RCC and IJC.

6. Adjourn

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Remote Participation
Toll free dial in number: 1-877-413-4781
Conference ID: 9 562 917

DRAFT AGENDA

<i>Time (EDT)</i>	<i>Agenda Item</i>	<i>Lead</i>
8:00-8:10	7. Welcome Round table introductions Housekeeping – Lunch order Approval of draft agenda	RCC Co-Chairs
8:10-10:00	2. New priorities has been and to be submitted <ul style="list-style-type: none"> • Great Lakes connecting channel (Michael, <i>Attachment 1</i>). • Great Lakes agriculture and nutrient issues (Ian). • Recommendations to sustainable restoration of the GL (Val, <i>Attachment 2</i>). <ul style="list-style-type: none"> • <i>Develop an outline - taking into account of recent work, publication and meetings to make stronger case; linkage to policy decision; include both US and Canada.</i> 	RCC Co-Chairs

	<ul style="list-style-type: none"> Others (Attachment 3, GL board project list) 	
10:00-10:15	BREAK	
10:15-11:00	<p>3. Overview of current RCC activities</p> <ul style="list-style-type: none"> GL Nutrient Adaptive Management – (Debbie/Gavin). GL Surface and Ground Water Model Integration (Yves/Norm). GL Early Warning System (Michael). Lake Erie CSMI Workshop (Chris W). Great Lakes Research Inventory (Mark Burrows) 	Work Group Co-Chairs
11:00-11:20	4. Preparation for Board Appearance, plan for future activities, and next in-person meeting	RCC Co-Chairs and all
11:20-11:30	5. Recognition of Norm’s service and contribution	RCC Co-Chairs and all
11:30	6. Adjourn	