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# **MINUTES OF 42nd MEETING**

## **COUNCIL OF GREAT LAKES RESEARCH MANAGERS**

### **U.S. EPA GREAT LAKES NATIONAL PROGRAM OFFICE**

### **CHICAGO, ILLINOIS**

### **OCTOBER 4-5, 2005**

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#### **U.S. Members Present**

Stephen Brandt (U.S. Co-chair)	Great Lakes Environmental Research Lab, NOAA, Ann Arbor, MI
Paul Horvatin	U.S. EPA-Great Lakes National Program Office, Chicago, IL
Joseph DePinto	Limno-Tech, Inc., Ann Arbor, Michigan
Tom Todd	USGS Great Lakes Science Center, Ann Arbor, MI (for Leon Carl)
Chris DeRosa	Division of Toxicology, CDC / ATSDR, Atlanta, GA
Janet Keough	U.S. EPA, Mid-Continent Ecology Division, National Health and Environmental Effects Research Laboratory, Duluth Minnesota
Jan Miller	U.S. Army Corps of Engineers, Great Lakes & Ohio River Division
Jeff Reutter	Ohio Sea Grant College Program; Ohio State University, Research Center, Columbus, OH
Steve Colman	Large Lakes Observatory, University of Minnesota, Duluth, MN
James Nicholas	USGS Water Resources Division, (Via Teleconference)

#### **Canadian Members Present**

Harvey Shear (Canadian Co-chair)	Environment Canada, Downsview, ON
William Meades	Forest Ecology, Natural Resources Canada, Canadian Forest Service
Alex Bielak	Science Liaison Branch, National Water Research Institute, Burlington, ON
Dan Bondy	Science and Innovation Partnerships, Health Canada, Tunney's Pasture, Ottawa, ON
Saad Jasim	Walkerton Clean Water Centre, Walkerton, ON

#### **Binational Members Present**

Dr. Patricia Chow-Fraser	International Association for Great Lakes Research
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## Secretary

Mr. Mark Burrows

IJC Great Lakes Regional Office, Windsor, ON.

## IJC Section Liaisons

Mr. Joel Weiner

## IJC Section Office, Ottawa, ON

Mr. John Nevin

## IJC Section Office, Washington, DC

## Introductions & Approval of Agenda

The Council members introduced themselves. Tom Todd attended the meeting in place of Leon Carl (USGS). A discussion of the reorganization of Environment Canada was moved to day 1 and an update on the status of the Health Advisory Group was added to the agenda for day 2. A copy of the revised final agenda is attached.

## **Council Membership & Status of Environment Canada Reorganization**

A brief update on the status of council member terms was given by Mark Burrows. Several member terms are scheduled to end in 2005: Dale Henry (12/05), Robert Andrews (12/05), Jan Ciborowski (12/05), Pat Chow-Fraser (12/05), Jan Miller (12/05), and Harvey Shear (12/05). In addition, Harvey Shear announced that he will be retiring from his position as Regional Science Advisor for Environment Canada. Members discussed impact on Council, options for recommending a new Canadian Co Chair and the status of the reorganization of Environment Canada.

Environment Canada is reorganizing around “national projects”, for example, the State of the Lakes Ecosystem Conference (SOLEC) will become part of a national project on indicators. The regional science advisor position will not be maintained and the Great Lakes region will probably become part of an “Americas Branch.” Identifying the appropriate nomination from Environment Canada for both the CGLRM and the WQB is not possible at this time. The option of appointing an interim Canadian Co Chair was discussed and ruled out. Considering the state of the reorganization of Environment Canada, that no one would be named to fill the position vacated by Dr. Shear and his willingness to continue to lead the Council in his new capacity with the University of Toronto; it was decided to re-nominate Dr. Shear for a new three year term.

Dr. Chow-Fraser reported that the International Association for Great Lakes Research (IAGLR) would be meeting in February and would recommend a replacement for her position as the IAGLR representative on the Council. She will continue to serve until a replacement is named. The Council secretary was tasked with drafting the appropriate memos to the section offices to re-nominate members desiring to continue to serve, and to recommend that Dr. Shear be appointed for another term as Canadian Co Chair.

## **“Great Lakes 101” Presentation and Great Lakes Regional Collaboration (GLRC) Activities**

Jan Miller presented “Great Lakes 101”, an executive briefing intended to show how Great Lakes institutions and organizations work together. It was noted that a parallel

link could be made between the Canada – Ontario agreement (1971) and the Great Lakes Regional Collaboration, in terms of national/regional cooperative efforts. The members discussed the presentation, organization and possible uses, and members requested that a copy of the presentation slides be posted on the website for future reference. (See: <http://www.canamglass.org/rcc/pdf/GL101ExecutiveVersion.ppt>).

The GLRC involved 1500 people addressing 40 priorities. The final report is due out on December 12, 2005. Noting that the draft report had a list of projects amounting to \$20 B, no expectations of “hard commitments,” the working groups have been tasked with identifying short term initiatives. The upcoming GLRC meeting in Rochester, NY was discussed, as well as the process for addressing the many comments received on the draft report. (<http://www.glrc.us>).

There was discussion of separating a GLRC “strategy” from an “implementation plan.” The Indicators and Information Group has mentioned the CGLRM in their input to the GLRC report, emphasized working within the existing structures and avoiding the creation of new administrative bodies. The process for establishing priorities and overarching themes was discussed and it was felt that more time could have been spent on that task.

One weakness that has been recognized in the GLRC effort is sparse Canadian participation; however the task force has recognized the need for U.S. and Canadian coordination.

### **Finalizing the Research Strategy Document**

The draft research strategy document was reviewed and discussed. The need for an introductory section, ties to other groups like the International Association for Great Lakes Research and the Great Lakes Fisheries Commission and an interdisciplinary approach to research coordination was discussed. The concept of having “priority themes” was introduced, discussed and it was generally agreed that resource limitations forces prioritization. Members agreed with the concept of sponsoring theme-based workshops based on policy and priority needs. Members debated the need to make a distinction between “applied” and “basic” scientific research and it was generally agreed that all CGLRM agencies deal with applied research and there is an overlap between applied and basic research. It was recommended that the strategy emphasize applied research, using existing networks and building local capacity to answer important scientific questions.

It was suggested that the strategy provide a means for researchers to “break in” to other groups, to learn about new initiatives and to add scientific value. Adding a graphical representation of what we are trying to do was recommended as well as creating a concise public document. Specific edits to the draft document were suggested and the CGLRM co-chairs, secretary and Ottawa liaison were charged with coming up with a finalized document that incorporates these changes in December 2005.

The meeting adjourned for October 4<sup>th</sup> and it was decided to address plans for research coordination strategy workshops for the following morning.

### **Plans for Research Coordination Workshops**

The meeting reconvened at 8 am on October 5<sup>th</sup> with a discussion of workshop proposals/ideas beginning with a workshop that would focus on lessons learned from the 2005 International Field Year of Lake Erie study. It was suggested that the workshop should expand beyond IFYLE 2005 and look at 3 large coordination efforts and evaluate each. A template could then be developed from the test cases. It was noted however, that this would replicate some of the work already done by the Council during the April 2004 research coordination strategy workshop.

The idea of sponsoring a large scale Research Coordination Summit in 2007 was introduced. This event would seek foundation funding and leverage resources to make a large impact. It would require about two years of preparation time to get the maximum effect, and could possibly tie in with the IJC Biennial Meeting in 2007

It was also suggested that an event could be tied to the International Watershed Initiative and that the Council should work within a schedule that could pull in the Lakewide Management Plan (LaMP) Technical Committees. The LaMPs could be used to help identify information needs. It was noted that the Binational Executive Committee (BEC) had plans to lead efforts in Lake Huron in 2007 and Lake Ontario in 2008 that could also be tied into research coordination workshops. The need to align with and support university efforts along with BEC-led initiatives was discussed as well as the need to draw funds from all sources, including the Great Lakes Protection Fund, the National Science Foundation and private foundations.

It was suggested that large scale efforts could include comparative work on more than one lake at the same time; coordinating and synthesizing research from both areas. This activity would represent a more "operational" role for the Council.

Outline of workshop descriptions:

Why a particular research theme is important

What we intend to accomplish

How it will be carried out.

One member suggested that the composition of the CGLRM would need to be examined and that social scientists, economists, health effects experts and others may need to be added to the mix.

For the first workshop it was decided to explore combining efforts with the Lake Erie Millennium Network, possibly incorporate sessions by the IFYLE Principal Investigators (IFYLE All-PI Meeting), and also a discussion of the CGLRM research coordination strategy. The members appointed a sub-committee, consisting of Jeff Reutter, Jan Ciborowski, Steve Brandt, Joe DePinto and Stu Ludson (NOAA-GLERL), and charged the group with identifying a viable date for the event and organizing the sessions. (Note: Following the CGLRM meeting, the subcommittee agreed upon Feb 28-Mar 3, 2006 for the LEMN event which will be held at the University of Windsor.)

### **Discussion of Potential changes to the Great Lakes Water Quality Agreement and CGLRM Recommendations in the 2003-2005 Priorities Report**

The council secretary briefly outlined the **current requirements** of the GLWQA as amended in 1987, these include:

Article V Paragraph 2 - federal governments agreed to use their best efforts to ensure that:

- Their principal research funding agencies would orient programs in response to research priorities identified by the SAB and recommended by the IJC.
- Develop mechanisms for appropriate cost-effective international cooperation; and
- Research priorities are undertaken in accordance with Annex 17

Article VII, Paragraph 1. (f) - IJC was tasked with rendering assistance and advice to Federal, State and Provincial governments in U.S. and Canada on matters related to research in the Great Lakes ecosystem.

Annex 17 – provides a list of research topics.

GLWQA ('87) Terms of Reference for the Joint Institutions and the Great Lakes Regional Office:

- Establishes and describes duties of the WQB and SAB
- Assigns SAB with matters related to research management
- Assigns duties to the GLRO in support of IJC, WQB and SAB

### **Possible Amendments that could be considered during the Great Lakes Water Quality Agreement Review:**

The group briefly reviewed a list of possible amendments including:

Revise the governments approach to the Agreement, making it a visionary document that states goals and expectations in a general sense, defines roles of Boards, Council and GLRO in a non-prescriptive way and allows for implementation plans to be developed and revised on a regular basis.

### **Other *specific edits that could be made*:**

Article V Paragraph 2 - federal governments agree to ensure that:

- their principal research funding agencies coordinate major research initiatives binationally in accordance with a research strategy developed and maintained by the Council of Great Lakes Research Managers.
- mechanisms for sharing information about U.S. and Canadian research are developed and implemented (i.e. binational research inventory portal)
- Research priorities are coordinated, reviewed and periodically updated.

Article VII, Paragraph 1. (f) – IJC render assistance to governments to carry out research strategy

Annex 17 – Delete

Revise Terms of Reference for GLRO

- Establish advisory boards and council & describe duties of WQB, SAB and CGLRM

- CGLRM duties mirror research strategy, current terms of reference and GLRC recommendations
- Provide open forums for communications among scientists and granting agencies, to maximize collaboration and effective use of resources.
- Revise SAB terms of reference to focus on serving as a pool of expert scientific advice for informed decision making
- Task GLRO w/support of IJC, WQB, SAB & Council without being prescriptive.

Members present generally agreed that these options and amendments incorporate recommendations brought forward during past discussions with the IJC and should be considered by the Parties during their upcoming review of the agreement.

### **2005-2007 Priority Work Proposals to the IJC**

The proposals to the IJC for funding 2005-2007 work by the Council that were provided in the briefing material distributed before the meeting were approved without further discussion or modification. (Attachment 2)

#### **Research Inventory – Proposal to make AIS data available via a “NISbase-Projects” web portal.**

The proceedings and results of the AIS database summit held at Stone Lab, September 12-14, 2005 were discussed and it was proposed that the CGLRM/IJC consider funding a project to link AIS projects in the Research Inventory with Sea Grant database projects and others through a single portal “NISbase-projects.” (see: [www.NISbase.org](http://www.NISbase.org)) This would create a “distributed database” portal for research projects dealing with aquatic invasive species. The cost for programming the changes was not available at the time of the meeting and the Council members approved the idea in concept, however with held approval pending a cost estimate from the Smithsonian Environmental Research Center.

Current activities with the Research Inventory were briefly discussed, including an analysis of AIS projects in the inventory and efforts to partner with the BEC monitoring inventory. The proposal to create a page that directs users to the appropriate inventory for either research or monitoring projects was approved.

#### **Proposed Science Vessel Coordination Session at the 2006 International Association for Great Lakes Research (IAGLR) Conference**

The council secretary briefly outlined the science vessel coordination workshop scheduled for Traverse City, MI on January 25-27, 2006. The workshop agenda is being planned in partnership with the Great Lakes Maritime Academy (GLMA) and the Great Lakes Captains Association and takes advantage of the unique training facilities available at the GLMA. This partnership increases attendance, promotes professional development, improves coordination and communication between vessel operators. An effort has been made over the past several years to include educational vessels in the program and to promote outreach efforts. The program agenda, registration information

and other background information may be found at the Great Lakes Association of Science Ships (GLASS) web site: <http://www.CanAmGLASS.org>.

In 2004 the need to hold multiple events to target both operators and researchers was recognized and addressed with a poster session display at the 2005 IAGLR conference. A proposal has been made by the steering committee to expand this outreach in 2006 by sponsoring session at the IAGLR conference. The following half-day session was proposed:

Title: Advances in Shipboard Research and Science Vessel Coordination

Description: Cover new shipboard technology for gathering research data, initiatives for coordinating and optimizing vessel based research operations, lessons learned from major coordinated research studies and efforts to acquire new vessels.

Proposed session chairs: Michael Quigley (NOAA) & Mark Burrows (IJC-GLRO)

The CGLRM members approved of going ahead with the effort, however because concurrent sessions are held at IAGLR, it was recommended that the GLASS display be set up in order to reach those who may not attend the session. This could require additional resources to pay for display space and the Council secretary agreed to carry out that task.



Picture of the Great Lakes Association of Science Ships (GLASS) display as shown at the 2005 IAGLR Conference

## Health Advisory Group (HAG) Activities

The CGLRM has two representatives working with the Human Health Advisory Group, Chris DeRosa (CDC/ASTDR) and Dan Bondy (HC). The group was formed by the IJC for the purpose of providing advice as to how human health could be addressed in a revised Great Lakes Water Quality agreement. Dr. DeRosa briefed the CGLRM on the group's activities and recommendations.

Points noted during his presentation include:

The agreement must clearly define what is meant by "human health," which may include psychological effects, well being, no perceived loss, etc...

Needs to be addressed include:

- Human cohort studies with common metrics so that large scale comparisons can be done, comparison, syndrome surveillance, “OMEX” detection of patterns of protein synthesis.
- Enhanced fate and transport models
- Public health education
- Human tissue “banks” as a means to conduct retrospective studies – this is needed to address the ever increasing number of chemicals that are recognized and tracked in the population 170 chemicals being tracked in the population will increase to 350 in 2007 – CDC “meta-analysis”
- The human health costs of **not** remediating Areas Of Concern
- Functional deficits (IQ loss, etc.) in population studies.
- Joint toxic actions and synergistic effects

The Health Professional Task Force may continue to serve as a resource group for other boards.

### **Update on the transfer of responsibilities for Great Lakes fish contamination study from DFO to EC**

It was reported that the fish contaminant tissue archive maintained by the Department of Fisheries and Oceans(DFO) will continue to be maintained due to an agreement with Environment Canada to take over responsibility for both the tissue archive and the fish contaminants program. The following description of the program is provided on the DFO website:

“For more than 20 years, DFO's Great Lakes Contaminants Surveillance Program has provided annual updates on contaminant trends in fish communities throughout the Great Lakes. Collections of top predator fish species (e.g., lake trout and walleye), major prey species (e.g., smelt, alewife, sculpin) and the invertebrate forage base are analyzed for whole body contaminant burdens to determine trends in time and space throughout the lakes. The program can also use the contaminant burden data to identify emerging toxic chemical issues, and the toxicological significance and potential combined impacts of a range of toxic chemicals and their breakdown products. GLLFAS also maintains a Tissue Archive, which contains more than 15,000 samples of fish and invertebrates. Samples from the Archive are used to conduct retrospective chemical and biological analysis, which can indicate both changes to the dynamics of the Great Lakes ecosystem over time plus alterations to contaminant pathways and fate. It can also be used to identify the historical trends of recently identified toxic chemicals and track their impact over more than two decades.”

More information about the program is available on DFO's Bayfield Institute web page. The Institute is located at 867 Lakeshore Road, Burlington, ON, and the contact for the program is Mr. Mike Whittle (905) 336-4565.

(Note: In the process of editing these minutes, the status of the transfer was checked January 12, 2006. As of this date the transfer of responsibility for the fish contaminants surveillance program from DFO to EC has not been completed and little to no progress has been made. No samples were added to the archive for 2005 and funding is being taken from other operational areas to keep the tissue archive freezers running and to save the archive until the transfer is made. The reorganization of EC and intransigence on the part of managers in both organizations was said to be responsible for the delay.)

**Next Teleconference/Meeting(s) -**

A teleconference was scheduled for October 24, 2005 at 10 am eastern time. The next CGLRM meeting will be held in conjunction with the Lake Erie Millennium Network conference at the University of Windsor February 28 to March 2, 2006.

**Attachments:** (1) Council Meeting Agenda as revised October 4, 2005  
(2) Proposed priority work for 2005-2007

**Attachment 1 to CGLRM Minutes of October 4-5, 2005**

Rev. 10/4/2005

**Agenda**  
**42<sup>nd</sup> Meeting of**  
**Council of Great Lakes Research Managers**  
**October 4-5, 2005**  
**Chicago, IL**  
**(as amended)**

Time	Item	Topic	Responsibility
<b>October 4, 2005</b>			
1:00 p.m.	1	Welcome	Horvatin, Brandt, Shear,
1:15 p.m.	2	Introduction & Membership – Solicitation of Nominees for Canadian Co-Chair and the Appointment Process	Brandt, Shear
	3	Status of the Reorganization of Environment Canada	Shear, Bielak
1:45 p.m.	4	“Great Lakes 101” Presentation followed by discussion & update on Great Lakes Regional Collaboration activities	Miller, Brandt
3:00 p.m.	5	Coffee Break	
3:15 p.m.	6	Finalizing the Research Strategy Document	Shear, Horvatin, Brandt, Burrows
6:00 p.m.	7	Adjourn - Dinner at local Restaurant (Berghoff's)	Horvatin
<b>October 5, 2005</b>			
8:00 a.m.	8	Welcome – Opening Remarks	Brandt, Horvatin
	9	Strategy Implementation - Plans for Research Strategy Workshops	Shear, Brandt
	10	Possible text changes to the GLWQA to expand on CGLRM recommendations in the Priorities Report - Group Discussion	Burrows/Weiner
	11	2005-2007 Priority Work Proposals to the IJC –Review of Semi-Annual Co-Chairs discussion/presentation to the IJC (Ref: Aug. 22 e-mail regarding draft proposed priorities/activities and estimated budgets for the 2005-07 biennial cycle; Draft statement of work for Observing System white paper. Copies attached; )	Brandt, Shear, Burrows
10:00 a.m.	12	Coffee Break	
	13	Research Inventory Activities; NIS data base summit at Stone Lab hosted by Jeff Reutter; proposal that the CGLRM/IJC consider funding project to link AIS projects in the Research Inventory and Sea Grant database through a single portal NISbase (see: <a href="http://www.NISbase.org">www.NISbase.org</a> )	Reutter; Burrows
	14	Proposed Science Vessel Coordination Session at IAGLR	Burrows
	15	Health Advisory Group Activities	DeRosa
	16	Update on the transfer of responsibilities for Great Lakes Fish Contamination study from DFO to EC, upkeep of tissue archives, disposition of equipment and staff.	Shear
	17	Other Business / Schedule Next Teleconference or Meeting	Brandt
12:00 p.m.	18	Adjourn	Brandt/Shear

**Attachment 2 to CGLRM Minutes of October 4-5, 2005**

**DRAFT**  
**PROPOSED PRIORITIES 2005-2007**  
**(Draft Priorities Document of August 16, 2005)**

**PRIORITY: Review of the GLWQA; Advice on Agreement Review**

**BOARDS COLLABORATING:** WQB, SAB, CGLRM, IAQAB

**ESTIMATED BUDGET:** \$60,000

**DESCRIPTOR:** The WQB held a Watershed Approaches Workshop in March, 2004 to identify the ways and means of strengthening linkages between jurisdictional watershed planning and Lakewide Management Plans (LaMPs). Many gaps were identified, but the common theme in watershed planning in both the U.S. and Canada that emerged from the workshop was non-point source pollution control. The WQB will conduct a case study of the Lake Erie watershed to address how the Agreement might be revised to explicitly strengthen watershed-lake water quality linkages. The case study will allow translation of rather abstract issues into concrete advice and recommendations. The case study will focus on watershed plans, RAPs, LaMPs, fishery management plans, etc., and the institutional arrangements for implementation. Lake Erie has been chosen because: 1) environmental changes usually occur first in Lake Erie, whereby Lake Erie is the bellwether for changes in the other Great Lakes, and 2) the Lake Erie LaMP community has expressed interest in participating in such a case study. The outcome of the case study is advice on Agreement review, particularly Annexes 2, 11, and 13.

The SAB will conduct an expert consultation on a Science-based Approach to Great Lakes Water Management through Enhanced Institutional Arrangements and Governance in January 2006. This consultation will provide recommendations for future science-based institutional arrangements for the governance of the Great Lakes. These recommendations will provide the Commission with background information for its use during the review of the Great Lakes Water Quality Agreement. Members of the IAQAB will be among those invited to participate.

The CGLRM's work on the research coordination strategy and Great Lakes Observing System will provide advice on the Agreement review, in particular Annexes 11 and 17.

**PRIORITY: Urbanization**

**BOARDS COLLABORATING:** SAB, WQB, IAQAB

**ESTIMATED BUDGET:** \$57,000

**DESCRIPTOR:** This collaborative priority will address significant water quality issues related to urbanization in the Great Lakes basin, including best management practices (SAB), decaying infrastructure (WQB) and urban transportation (IAQAB). An initial collaborative scoping meeting is tentatively scheduled for early November, 2005.

The SAB will organize a major Binational Urbanization Symposium on the causes of, and solutions for, water resource impacts of urbanization in the Great Lakes basin. Expert white papers (US & CAN) will be contracted and a "Science Horizons" intern will be

employed. Pertinent issues related to groundwater and surface water quality, urban contaminants and their sources, urban heat-island effects, etc. will be addressed. This work will result in detailed technical guidance on site evaluation for, and implementation of, recharge-based storm water management and advice on watershed management issues related to escalating urbanization in the basin.

The WQB will contribute a better understanding of the current status of what is being called "decaying infrastructure" of urban wastewater treatment and storm water runoff containment and treatment facilities. Based on this information, the WQB will make projections on urban infrastructure needs to protect Great Lakes water quality in the face of projected population increases in Great Lakes municipalities.

In conjunction with the WQB and the SAB, the IAQAB proposes to examine the contribution of the transportation sector to air and water quality impairment in urban settings. Its focus will be on the current and projected contribution of on and off-road gasoline and diesel vehicles to urban air pollution. Some correlation between the growth in the number of vehicles and vehicle miles traveled and the prevalence of hardened surfaces associated with driving and parking will likely be attempted. The increase in the volume and contamination of storm water runoff associated with these surfaces will be an aspect of this work.

**PRIORITY: Annex 2**

**BOARDS COLLABORATING:** WQB, SAB

**ESTIMATED BUDGET:** \$48,000 (+ Journal of Great Lakes Research special issue on beneficial uses restoration, estimated: \$22,000)

**DESCRIPTOR:** The WQB observes that much of the initial enthusiasm and interest in RAPs and LaMPs is waning in the Great Lakes. The WQB Annex 2 Work Group will conduct activities designed to raise the profile of RAPs and LaMPs in the Great Lakes basin. Through annual AOC site visits and consultations and by holding a workshop on the 5 binational AOCs, the WQB will: identify and recommend solutions for removing road blocks to better management of resources; recommend improvements to the accountability of governments; recommend improved mechanisms for reporting progress and overcoming obstacles to implementation; and facilitate communication of lessons learned between RAPs and LaMPs. The WQB Annex 2 Work Group will also assist in the acceleration of beneficial uses restoration, through the sponsorship of white papers, workshops, and symposia, the development of quantitative, measurable delisting targets for the Beneficial Use Impairments (BUIs) and related assessment, monitoring, and evaluation protocols and guidelines.

**COMMISSION STAFF:** GLRO, Section Offices (review activity)

**ESTIMATED BUDGET:** \* \$47,000 – It should be noted that this is a Commission Activity as opposed to a Board Priority, but is included for information purposes.

**DESCRIPTOR:** As specified in Annex 2 of the GLWQA, ongoing efforts to review and comment on completed Remedial Action Plans (RAP) and Lakewide Management Plan (LaMP) documents will be continued. Lessons learned from these activities will be reflected in a biennial RAP and LaMP workshop.

**PRIORITY: Health Effects of New Chemicals**

BOARDS COLLABORATING: SAB, IAQAB, WQB

ESTIMATED BUDGET: \$15,000

DESCRIPTOR: The SAB has begun organization of a special session to be conducted at the Mercury 2006, a conference on mercury as a global pollutant. This session will provide an overview of science and policy approaches to mercury in the Great Lakes region. The conference will be held August 6-11, 2006 in Madison, Wisconsin.

**PRIORITY: Mercury Modeling**

BOARDS COLLABORATING: IAQAB, WQB, SAB

ESTIMATED BUDGET: \$25,000

DESCRIPTOR: Currently, the various components of the multicompartment model, including the Atmospheric Deposition model (Cohen), the Water/Sediment/Biota Transfer model (Sunderland/Johnston) and the Transfer of Contaminants to Humans model (Georgopolous and Wang) are individually being polished. They will be assembled in the Fall and this first iteration of the multicompartment model will be the subject of a workshop in the late winter 06. Comments and suggestions from the workshop will be incorporated into the model and then applied to various available data sets and outcomes checked against available information. The revised model and its predicted outputs will be the subject of an Expert Meeting in the Fall of '06. The refined model would then be presented to the Commission and described in the 2007 Great Lakes Priorities Report. Support from and involvement with other Boards will be sought, particularly the most current point source discharge information on mercury and its species from the Water Quality Board and the guidance of the SAB on the modeling of human uptake associated with Lake Ontario subpopulations.

**PRIORITY: Pathogens**

BOARDS COLLABORATING: SAB

ESTIMATED BUDGET: \$10,000

DESCRIPTOR: In order to more fully consider a potential Environmental Pathogens Strategy for the Great Lakes basin, the Workgroup on Ecosystem Health will continue planning of a workshop to assess use of a Hazard Analysis and Critical Point plan to manage risks associated with waterborne microbial pathogens in the waters of the Great Lakes. This effort will build upon the work that is published in the 2003-2005 priorities report.

**PRIORITY: AIS**

BOARDS COLLABORATING: WQB

ESTIMATED BUDGET: \$35,000

DESCRIPTOR: The WQB published its 2001 white paper on the aquatic invasive species (AIS) problem in the Great Lakes, with emphasis on the ballast water vector. The WQB will prepare a complementary report updating the ballast and NOBOB vectors and addressing the urgency of addressing the other AIS vectors, including canals, recreational boating, baitfish, live food fish, and the import trade for aquaria and water gardens. The WQB also recognizes that AIS is only cursorily mentioned in Annexes 6 and 17. The WQB will review the Agreement and provide advice on how it might be strengthened to better address the prevention and spread of AIS in the Great Lakes.

**PRIORITY: Groundwater**

BOARDS COLLABORATING: SAB, CGLRM

ESTIMATED BUDGET: \$16,000

DESCRIPTOR: This collaborative priority will assess the state of groundwater in the Great Lakes basin 20 years after Annex 16 was added to the GLWQA. A Binational Groundwater Symposium is planned to discuss new Michigan and Ontario groundwater mapping and monitoring efforts. Expert white papers (US & CAN) will likely be contracted. This work will result in a *2007 State of the Great Lakes Basin Groundwater Report*; an expansion and update of the IJC's 1993 "Groundwater Contamination in the Great Lakes Basin" report and the IJC's 2000 "Protection of the Waters of the Great Lakes" report. It will also provide information on emerging groundwater issues and concerns, linkages with other priorities (e.g. Urbanization and Pathogens) as well as Annex 2001/Great Lakes Charter implications, etc. The USGS representative on the CGLRM will advise on the project and provide SAB liaison.

**PRIORITY: Observing Systems**

BOARDS COLLABORATING: CGLRM, WQB, IAQAB

ESTIMATED BUDGET: \$20,000

DESCRIPTOR: The CGLRM will build on work completed at the 2004 open water observation technology workshop and done with the GLOS steering committee on GLOS implementation. The Council will seek to collaborate with the IAQAB, which is actively involved in GEOSS implementation from an agency standpoint, and serving as advisor to IJC on the status of global system development. Activities will be coordinated with the WQB, by including an examination of policy & management questions that need to be addressed by an observing system. CGLRM & WQB: Contract 2 discussion papers for delivery by end of March 2006 to serve as a lead-in to a multi-board discussion that will address both management and technology questions.

**PRIORITY: Research Coordination**

BOARDS COLLABORATING: CGLRM

ESTIMATED BUDGET: \$75,000

DESCRIPTOR: Three workshops organized in line with the draft research strategy targeted at better informing the research granting process and providing a "roadmap" for binational coordination of large scale projects. Recognizing the International Field Year of Lake Erie (IFYLE) provides a good opportunity to improve coordination on large scale projects, the first workshop will be co-sponsored with NOAA and focus on lessons learned in the first year of the project. The second workshop will represent a "start-up" focused on kicking off IFYLE 2007 and implementing the coordination strategy, and a third workshop will be developed that will be either on a thematic research topic or on impending grants to be awarded.

**PRIORITY: Research Inventory**

BOARDS COLLABORATING: CGLRM

ESTIMATED BUDGET: \$5,000

DESCRIPTOR: Efforts will focus on data input, analysis, outreach efforts to major users and harmonization with the Binational Monitoring Inventory. Provide output of monitoring projects to BEC and strengthen links between the binational data exchange site and the research inventory. Complete data entry, validation and study of aquatic invasive species research with assistance from Hugh MacIsaac and use that experience to

guide analysis of all inventory data. Conduct input/validation of existing data, analysis and comparison of trends with earlier research studies.

**PRIORITY: Science Vessel Coordination**

**BOARDS COLLABORATING:** CGLRM

**ESTIMATED BUDGET:** \$5,000

**DESCRIPTOR:** Sponsor and organize the Science Vessel Coordination Workshop

January 25-27, 2006 in Traverse City, MI and hold an additional session, focused on user needs, at the May 22-26, 2006 IAGLR conference in Windsor.

**(Draft Priorities Document of August 16, 2005)**