

**Project Management Team/Stakeholder Advisory Committee  
Water Resources Management Decision Support System  
Meeting Minutes**

Weber's Inn  
3050 Jackson Road  
Ann Arbor, Michigan 48103  
October 1-2, 2002

**Attendees List**

Attachment #1

**Summary Minutes - Day 1**

Dick Bartz, Chair of the Project Management Team (PMT), welcomed the members from the PMT and the Stakeholders Advisory Committee (SAC), initiated self-introductions, outlined the meeting objectives and reviewed the agenda. The agenda was accepted as presented (Attachment 2).

Dick Bartz stated the following meeting objectives:

- Review and discuss the report content.
- Review and discuss the report's findings and recommendations.

The PMT/SAC members were encouraged to submit comments on the draft materials presented at this meeting via email to the Commission staff as soon as possible.

The minutes of the August 20-21 joint PMT and SAC meeting were distributed. The minutes went through a one-week review process that ended on October 1. It was modified and posted on the WRMDSS website (<http://www.glc.org/waterquantity/wrmdss>).

**Project Progress and Accomplishments to Date**

Dick Bartz and Tom Crane, Great Lakes Commission led the discussion on the project's schedule and timeline and a list of products (Attachment 3). A revised project schedule and timeline will be emailed to the PMT and SAC by October 8. Wendy Leger, Environment Canada, inquired about the review process of the draft final report for all of the project participants and members of their staff. Tom Crane welcomed comments from her staff. The deadline to receive comment for all report chapters is November 7. Crane described the Great

Lakes Commission's process of reviewing the report. Dick Bartz and Tom Crane will present the key highlights to Commission at the October 15 meeting in Ohio. By a resolution, the Commission will formally receive the report as a product of the Commission sometime in late 2002 or early 2003.

Becky Lameka, Great Lakes Commission presented the action items from the August 20-21 Joint PMT and SAC Meeting.

### Summary and Review of August 20-21, 2002 PMT/SAC Action Items

1. Edit and sent the "List of Products" and "Schedule and Timeline" handouts to the PMT and SAC listserves.
2. Post the latest draft outline on the WRMDSS secure website. Reference recommendations presented in the Executive Summary to the report chapters.
3. Great Lakes Commission staff will revise Chapter 8, *Pulling It All Together*. TSC chairs will be able to comment on the development of the next draft.
4. PMT/SAC/TSC comments on draft report materials are due to the GLC staff on Sept. 2.
5. A few descriptive paragraphs on a demand forecast project in Ontario will be added to Chapter 4.

**Action: Staff will put together a bulleted list of changes to be made to the document that will be placed on the secure website so that everyone knows what the planned revisions are and can review the document appropriately. Staff will post a Word version of the document on the secure website.**

### Chapter 2, Introduction

Before discussing Chapter 2, Tom Crane explained the revision process for the development the latest draft report. He mentioned the half-day authors meeting that occurred to resolve consistency problems. He pointed out that a table of contents was added to each chapter. Chapter 2, sections that contained detailed information about the project were taken out. Wendy Leger agreed to draft a few paragraphs to address the issues of scale and definitions of various water uses.

The following comments were raised:

- Add additional historical information related to the Boundary Waters Treaty of 1909.
- Add information on why water withdrawals are needed and important.
- In Section 2.2.3., Informing Regional Decisionmaking, consider showing how parts of this report bear importance to the Annex.
- The last sentence on p.13, Section 2.1, will be written as, "The project is a status assessment of the information."

- Generally define a decision support system (i.e., what it is) and the various nested scales in which it may inform decisions.
- Better define the report scope: what it is and what it is not.
- Organize Section 2.3 by chapter and delete references to project elements; include boxes for water conservation and resource improvement in Figure 1.

## Project Element 2, Chapter 3: *Status Assessment of Water Resources*

Jim Nicholas, USGS, (via conference call) and Brian Neff, USGS, (in person) briefly introduced Chapter 3, and asked for any comments on conceptual issues, findings and recommendations.

The following comments were raised:

- Provide a more neutral tone to chapter 3. Errors are not inherently bad and are acceptable for the purpose that measurements are used for.
- The major focus of this chapter is to assess the status on hydrologic data and information. How to use this data in making regional water resources management decisions should be addressed.
- Define metadata.
- In Figure 10 that addresses the flow of the Chicago diversion over 30 years, correct the data displayed.
- The finding related to the relation of uncertainties to potential withdrawals on a lake-wide scale (page 38), needs revisions in order to agree with findings from other chapters. Or, delete, “Therefore, effects of withdrawals on ecosystems in the Great Lakes and connecting channels cannot not be predicted.”
- Historical information of the connecting channels needs to be added.
- Historical information of lake level control and how lake level control encompasses minor changes should be added.
- Isostatic rebound needs to be addressed as a further complication to assessing impacts from withdrawals.
- Discuss the types of information and models needed to for a DSS.
- Insert a paragraph on the scope of the chapter in the introduction (i.e., what the study does and what it does not do).
- When describing predictions of hydrologic models, review the terms accuracy and confidence level. For example the 5<sup>th</sup> sentence in the 2<sup>nd</sup> paragraph on page 36, “Although the effects of a withdrawal on flows and levels cannot currently be detected, existing models can accurately predict the effects of a withdrawal on a connecting channel flow, lake level, or hydroelectric production.” “Accurately” could be substituted with “confidently.”
- Rearrange recommendations by applicability to the magnitude of diversion, rather than strictly by component of the water balance.
- In the discussion section on modeling impacts of withdrawals, state the confidence level of the modeling estimations.
- Section 3.2.1.2, Groundwater, page 23, states, “Groundwater that discharges to streams supports in-stream ecosystems, allows for computation of allowable point discharges during periods of low flow, and is significant source of non-point-source pollution in streams.” Change the “is” to “can be” or “may be.”
- In general, provide more specificity to the recommendations.

- Cumulative impacts should be discussed in this.
- Add an additional recommendation in pursuing a standardized binational approach to looking at the watershed and sub-watershed.
- At the beginning of the chapter and the recommendations section develop the context for the role of hydrologic information in assessing cumulative impacts.
- Clarify the last sentence above section 3.4, “The need for resources is implicit.”
- Recommendation on groundwater discharge should address scale. A lot of work in the groundwater area is not reflected in the chapter and the findings.
- Add another paragraph on improvements of modeling the system (routing water supply through the system).
- Add information about real-time hydrologic data access.
- Add a section prioritizing the recommendations and that if the recommendations won’t help the Annex 2001 process, they should not be present, i.e., de-emphasize lake-wide process based recommendations.
- In recommendation 1 replace “funded” with some other adjective in the last sentence. For example, “The Coordinating Committee for the Lakes Hydrologic and Hydraulic Data should be the group that is charged [instead of “funded”] to carry out these recommendations.”
- Standardizing US/Canada approaches to monitoring has value and is common thread in recommendations concerning groundwater, precipitation, evaporation, connecting channel flows, diversions, lake levels, and watersheds. It could be an important concept that deserves its own finding and recommendation.
- Regarding Figure 2 on page 22, connecting channels should be shown as inflows and outflows.

Dick Bartz asked for suggestions for key highlights to present at the next Great Lakes Commission meeting. Roger Gauthier proposed that improvements to modeling the hydrologic system should be mentioned.

### **Project Element 3, Water Withdrawal and Use**

#### *Chapter 4, Inventory of Water Withdrawal and Use Data and Information*

Tom Crane described the revisions made to Chapter 4 and described how the findings and recommendations were presented in the chapter. Then, he asked for the comments. The following comments were raised:

- Incorporate more graphics.
- Modify Table 1 to reduce confusion or take it out all together.
- Describe how the database will input information into a DSS.
- Add information about individual water use data vs. aggregate data.
- Add the finding: In order to analyze water use at various scales, one needs individual user data. The database isn’t adequate toward making individual decisions.
- Delete “mandatory” from recommendation 3 and include “accuracy and consistency of data”.

- In recommendation 2, address consistency and accuracy according to water use category. Specifically, irrigation where consistency may be low but accuracy may be high, and that is ok. Also, add estimations of a high degree of accuracy to the second sentence.
- Add to recommendation 5 a research component that drives accurate estimations of water use.
- Add to recommendation 4 a few sentences about reporting in terms of water use categories and add some language concerning scale.
- Develop a paragraph or two on the connectivity between water use reporting mandates and water withdrawal impacts to basin hydrology.

Dick Bartz asked for suggestions for key highlights to present at the next Great Lakes Commission meeting. The need to know what water is being used and the need for water use trend analysis were suggested.

### Chapter 5, *Water Conservation in the Great Lakes/St. Lawrence Region*

Dan Blake, GLC, briefly reviewed the revisions to Chapter 5. Then, he opened the discussion up to comments. The following comments were raised:

- Change the word, “requirements” into “goals” through out the chapter (example is Section 5.4.4) and make the point that everyone wins.
- Direct conservation toward consumptive uses with the exception of drought planning.
- Identify sensitive areas where conservation is needed.
- Section 5.3 and onward, the tone needs to be adjusted because it is too prescriptive, especially the third paragraph of the section. Focus more on data and support while providing options. Replace “consistent” and “uniform” with “coordinated.” (Recommendation 1) Also, “coordinated” is better than “common approach.”
- Delete the last sentence of section 5.3, “The presented items should not be considered comprehensive and can be used in conjunction with each other to maximize the benefits of water conservation.”
- A way to tie water conservation more clearly into a decision support system is to identify areas of high consumption to work on reducing use and developing watershed assessments to identify local sensitivities.
- Strike the last sentence of recommendation 1, “As one possibility, decisionmakers should consider using a standard that provides “environmentally sound” water use quantities related to per capita consumption or consumption per unit of output,” or place it in findings.
- Recommendations 2 and 6 seem connected. Put them in order, but keep them separate
- Add finding – better understanding of system sensitivities can apply to water conservation.

### Update on Online Water Use Database

Kevin Yam, GLC, presented the online water use database that has changed to accommodate the comments received during the August 20-21 Joint PMT and SAC meeting. The database is accessible at <http://www.glc.org/wateruse>. The following comments were raised:

- Metadata should somehow be linked to the downloadable data.
- The option of viewing the data via bar charts may be valuable.

**5:15 P.M. Adjourn for Day 1**

## **Summary of Previous Day's Progress – Day 2**

Dick Bartz convened day two of the meeting and introduced new attendees. He brought up the discussion of editing the report. He posed to the PMT the question of whether to maintain the unique style of each chapter or edit all the chapters to a consistent style. Member of the PMT agreed that the report chapter must maintain an overall consistency. Mike Donahue, GLC, volunteered to help edit the report. Donahue also clarified that the final report is a product of the Great Lake Commission in collaboration with the PMT and with input from the SAC. Member names would be listed in the report. The Commission will receive the report and make a resolution. The resolution was read during this meeting.

## **Project Element 4, Ecological Impacts**

### *Chapter 6, Ecological Impacts Associated with Great Lakes Water Withdrawal*

Joe DePinto and Wendy Larson, Limno-Tech, Inc., led the discussion of Chapter 4. Joe DePinto explained the revisions to the chapter and then open the discussion up for comments. The following comments were raised:

- Chapter 6 should address the findings in Chapter 3.
- In the Literature Review Section, 6.6.3, mention some examples of what has not yet been studied that should be. Include the example of a 40-centimeter drop in Michigan and Huron study.
- In the paragraph describing connecting channels on page 95, clarify the channels' sensitivity. Point out how a withdrawal that is not seen on a lake-wide scale may cause flow regime changes to the connecting channels.
- Mention the lack of baseline information.
- In the findings, give some rationale as to why these studies are lacking (e.g., sheer size of the Great Lakes system, complexity of agency cooperation, not knowing what questions to ask, etc).
- Models regarding geomorphic processes in the nearshore zone should be in the findings.
- Another finding is the need to look at river models. Rivers, and river mouths in particular, will be the location where water levels impacts could be analyzed.
- Add a sentence or two to the findings that captures the importance of cumulative impacts, which was a major conclusion of the scenarios workshop.
- Understanding ecological sensitivities should be included in the recommendations. This may be accomplished by a new recommendation to identify sensitivities and in order to do that, identify indicators and thresholds.

- Rephrase recommendation 4 so that “issues” is defined.
- Clarify “time and space scales” in recommendation 4.
- Rephrase recommendation 1 and delete the word “revisit”.
- “Adaptive management” should be clarified in recommendation 6 so it doesn’t appear to be a policy recommendation. [There were some divergent points of view on this concept].
- Add a new recommendation (between 2 and 3), similar to the following language: “Priorities for research and data needs on ecological impacts should focus on identifying sensitivities through the development of indicators and thresholds that allow a determination of ‘no significant adverse impacts’ in Directive #3.” Build appropriate support for this in the findings section.
- The phrase in 1<sup>st</sup> paragraph of page 106, “While there exists a reasonably good outline for how to assess potential ecological impacts of water withdrawals and there exists a large knowledge base, there are many information and understanding gaps and unresolved policy issues that limit the practical implementation of the Annex,” should be revised as “There are many information and understanding gaps that pose barriers to understanding ecological impacts of proposed withdrawals.”
- Model inventory is still largely U.S. and this needs to be pointed out.
- Make a point that economics is also important. Maybe incorporate through discussion of environmental currency (needs to fit within chapter 1, 7 and 8)
- Need a separate recommendation to address future scenarios of climate change (regional predictions), population growth, demand forecasting, land use trends, etc.

## Chapter 7, *Resource Improvement Standard for Water Resources Projects*

Wendy Larson, led the discussion of the content of Chapter 7, and Mike Donahue led the discussion of the chapter’s recommendations. The following comments were raised:

- Summarize the key points applicable to the resource improvement standard from the case studies in the findings (to make it easier to read and understand the findings of the chapter).
- Add a caveat to these findings that conveys the fact that these models largely but not exclusively related to mitigation.
- In the introduction, state the scope and how the chapter differs from the rest of the report more clearly.
- Add the new recommendation similar to the following language: “Many of the same data and knowledge base needs identified in Chapter 6 for assessing the significance of resource impacts are also needed for assessing resource improvements.”
- Restate recommendation 7 as an action and expand it to include the whole range of opportunities such as water harvesting.
- Revise recommendation 1 to include the content of current recommendation 3.
- Delete recommendation 2,4,5, and 6, and insert language of the findings into the body of the chapter as part of the resource improvement standard workshop.

## Chapter 8, *Pulling it all Together*

Tom Crane presented Chapter 8. He explained that the development of the chapter was a collaborative effort. He described the significant changes:

- 1) Expanded discussion on the Chapter, WRDA, and the Charter Annex.
- 2) Expanded on the data gaps and needs.
- 3) Added description to Section 8.3 on individual project reports.
- 4) Added section 8.4 on communication.
- 5) Section 8.5 contains recommendations.
- 6) Added the last section that looks towards the future.

The following comments were raised:

- Chapter 8, *Pulling it all together*, will become the new chapter 9. It will address the synthesis of the project elements.
- Chapter 9 will present the following major overarching findings:
  1. Sub watersheds are important geographic locations where water withdrawal impacts will be seen most clearly for assessment.
  2. The difference in the types of data and information needed to support decisionmaking at various levels (i.e., sub-watershed vs. a Great Lake) should be recognized.
  3. Assessment of cumulative effects of withdrawals on hydrology and ecology is an important part of a DSS.
  4. Evaluations of proposed withdrawals must account for watershed-specific hydrology, ecology, and human uses.
  5. Ongoing interdisciplinary group is needed to help integrate data and information needed for a DSS.
  6. Long-term changes in climate change, land use, demographics, etc., may substantially alter approaches to water management and need to be recognized.
- Eliminate judgmental adjectives.
- Add a brief paragraph on why a DSS was not directly addressed.
- Redefine the underlined information found on page 140.
- New Chapter 8 will focus on information and communications.
- The content from the old section 8.5 will be reworked in this new chapter.
- Retitle section 8.4 to “Making water resources information and data analysis available,” and include a discussion of models.

## Next Steps

Tom Crane requested written comments on Chapter 2-7 to be in at the October 31<sup>st</sup> deadline. Chapter 8 and 9 should be revised and available for review October 11.

## Meetings and Other Dates

Tom Crane reviewed the updated project timeline. The last meeting will take place via conference call on November 7 at 2 p.m. EST. Refer to Attachment 4, the updated schedule and timeline.

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Minutes Submitted by:

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## ATTACHMENT #1

**Attendance List**  
**Water Resources Management Decision Support System for the Great Lakes**

**Joint Meeting of**  
**Project Management Team and Stakeholders Advisory Committee**  
**October 1-2, 2002**  
**Weber's Inn, Ann Arbor, MI**

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