

Comments on the WRMDSS Final Report Received as of Wednesday, November 20, 2002

Compiled comments were provided by the following individuals and groups:

- Council of Great Lakes Governors staff, Peter Johnson and Dave Naftzger (CGLG)
- Ontario Ministry of Natural Resources (OMNR), Danielle DuMoulin
- Minnesota Dept. of Natural Resources (MN DNR), Jim Japs and Sean Hunt
- Indiana Dept. of Natural Resources (IN DNR), Ralph Spaeth
- Fisheries and Oceans Canada (DFO), Karen Smokorowski
- Marc Hudon, Strategies St. Laurent (Hudon)

Preface

Page i: (CGLG) **We would ask that the sentence stating that “The recommendations presented in the report were discussed and agreed to, unless otherwise noted, by the Project Management Team and the Stakeholders Advisory Committee” be either struck or softened to indicate that this is a compromise document and that not all members may endorse every single recommendation in its entirety.** Further, we are concerned about the perception that as members of the Project Management Team the Council of Great Lakes Governors staff may be perceived as speaking on behalf of all its member States and potentially the Provinces as well. Thus, we recommend that the language be struck or softened to indicate that no objection has been raised by members of the Project Management Team or Stakeholders Advisory Committee to the recommendations. An additional sentence should be inserted indicating that lack of an objection by the PMT and SAC members does not represent an endorsement by the organizations they represent (i.e. the Council of Great Lakes Governors).

Acknowledgements

None

Chapter 1. Executive Summary

Page 2-11: (OMNR) Not sure about the use of “inform” throughout the first chapter. (p.2, 1.1.2, 1st paragraph; p.5, 1st sentence of 4th paragraph; p.8, 3rd paragraph, 3rd line; p.9, 1.7, 2nd paragraph, 3rd line; p.11, 1st paragraph, 2nd line

Page 2 (Hudon): at end of first paragraph on the page and first sentence under 1.1.3, add, “at the federal, state, provincial and municipal level.”

Page 2 (Hudon): 1.1.2, second paragraph, last sentence, which water withdrawals, can we name them?

Page 2 (Hudon): 1.1.2, last sentence – clarify that WRMDSS project supported Annex process in part.

Page 5: (MN DNR), first full paragraph, first sentence. After "management tool" add "because it does not include site specific data" delete "due primarily to" and add "and there are constraints..."

Page 5: (MN DNR), first full paragraph, last sentence "This level of data quality is inadequate for identifying" Add "impacts from specific withdrawals, annual, or seasonal, trends of water use....."

Page 5: (MN DNR), second full paragraph, at end of first sentence, add ", except the level of confidence is much lower because the amount of water lost to the system is not easy to determine."

Page 6: (MN DNR), first paragraph, first sentence. Replace "water conservation research" with "water conservation information"; Second sentence replace "This research" with "Existing efforts" or "Information collected".

Page 7 (Hudon): 1.5, second paragraph, first sentence. I think this statement goes too far. Personally, I found that the Experts Workshop brought to light the huge quantity of relevant questions for which there were no quick answers.

Page 8: (MN DNR) Section 1.6 should discuss difference between mitigation and resource improvement.

Page 9 (Hudon): 1.7 last paragraph, second sentence, specify if meetings are public.

Page 10 (Hudon): 1.8.1 Add "Meeting Present and Future" to title and in preceding paragraph; add precision to first sentence on the "needs" and "originally intended" (examples?) and in second sentence on "evolve" (from what to what?) and "new needs" (approving withdrawals or evaluating cumulative impacts?)

Page 11: (OMNR) In 1.8.3, there is a fundamental disagreement with the description of cumulative impacts. Cumulative impacts are the net result of many small changes resulting in a large change not the impacts that accrue over time. This is a serious problem because the definition used here (that I disagree with) is not used in other places.

Page 11 (Hudon): 1.8.3 last sentence, Does this mean that the issue has been pushed to the back burner? There should be some sort of recommendation to begin working on what or how or where the scientific experts will address it in the very near future.

Page 11 (Hudon): 1.8.4 first sentence, Add "present," to "new and increased water withdrawals."

Page 11: (MN DNR) Section 1.8.4, last paragraph, fourth line, after "groundwater monitoring networks" add "as well as water withdrawal data on a sub-watershed scale will be critical..."

Chapter 2. Introduction

Page 18-21: (OMNR) For 2.2.1, the legislation that required the US government to dredge channels during low levels on the Great Lakes in order to preserve navigation contrasts with the requirements of the Charter and should be mentioned in this chapter along with the implications.

Page 20: (OMNR) In the second paragraph, when the request for bulk withdrawal was thwarted in Ontario, we should mention the regulation passed by MOE and what it said (I.e. a ban on further applications.)

Page 22: (OMNR) In the second to last paragraph of 2.2.3, what does ascertained mean here? Does it mean the effects can be measured? Observed? Does it mean the cause can be measured? Observed?

Page 22: (OMNR) Also in the second to last paragraph of 2.2.3, I believe here is one case where cumulative effects fits my definition.

Page 25: (OMNR) First couple of lines, change "quantitatively identify errors associated with measures" should be quantitatively identify measurement accuracies. More generally, throughout this paper the terms errors, accuracy and uncertainty come up we need to be sure we are consistent in their usage and we want the term we are using. Specifically we do not want to convey the idea of errors when

we want to say accuracy when there isn't any error. Sometimes there are errors and sometimes there are measurement accuracies.

Chapter 3. Status Assessment

Page 30: (IN DNR) concerns over references to 2003 publications.

Page 32: (OMNR) Third paragraph, why do we define seiches but not set-up and set-down?

Page 32: (OMNR) Second to last paragraph, we need some indication of the relative size of isostatic rebound.

Page 33: (OMNR) In this first big paragraph, what are the standards of the US network? Mixed? Same as Canadian?

Page 33 (Hudon): 3.2 after first sentence, should measurements within the St. Lawrence River also be discussed?

Page 33: (OMNR) In 3.2.1.1, do not refer to stage-discharge relationships as models they are relationships and this is how they are referred to in section 3.3.

Page 36: (OMNR) In 3.2.1.3 second paragraph, we do not actually calculate precipitation with radar we estimate it.

Page 41-42: (OMNR) 3.3 Again, throughout this paper the terms errors, accuracy and uncertainty come up we need to be sure we are consistent in their usage and we want the term we are using. Specifically we do not want to convey the idea of errors when we want to say accuracy when there isn't any error. Sometime there are errors and sometimes there are measurement accuracies.

Page 42: (OMNR) 3.3.1 We should also mention that the accuracy may be less for streamflows under low water conditions because the reading error is more subject to siltation and instream plant growth than at high flows.

Page 42: (OMNR) 3.3.2 First paragraph, the precipitation input to an ungauged watershed can dwarf other uncertainty such as reading error therefore the paragraph should be reworded to put #2 up front and there refer to #1 as another source of inaccuracy.

Page 46: (OMNR) In 3.3.8, do we need to explain that the accuracy here is so great because of the number of stations used to calculate the lake level reduces measurement error to below that of any 1 gauge?

Page 48 (Hudon): In fourth paragraph, fourth sentence, What about the predicting capabilities related to the St. Lawrence River, since we're mentioning connecting channel flows?

Page 48-50: (OMNR) **These recommendations need some form or order:** 1,7,10,11 and 15 deal with Standards, 2,4,13 deal with networks, 14,8,9 deal with Models, others deal with monitoring

Page 49: (CGLG) **We would ask that recommendation 3 be replaced with the following language: "Create a single storage area for data so that data is consistently collected and is both easily available and considered to be reliable for decision makers."** How the information is collected and disseminated could become a very sensitive issue, particularly for those who consider how their water is

used to be a trade secret. Therefore, we are suggesting the above language so that the needs of the decisionmakers are met without causing undo concern amongst the stakeholder community that a decision has already been made to make specific user by user water use information publicly available.

Page 49: (OMNR) Recommendation #5 we also need to better estimate precipitation on ungauged watersheds. (i.e. like in #8)

Page 49: (OMNR) Recommendation #11 needs a periodic evaluation of the methods for calculations as in #10.

Chapter 4. Withdrawal and Use

Page 61: (OMNR) 4.2.3, fourth paragraph, does the St. Lawrence basin include the Ottawa River? We should say whether it does or doesn't.

Page 62: (MN DNR) The second full paragraph says, "Because the database is missing four years of data" and at the end refers to "...data for 1994 to 1997 will be gathered and incorporated into the database." Does this represent the current state of the water use database/dataset? Minnesota submitted 1994-1997 data several years ago. I was under the impression most other jurisdictions had also submitted this information. Also, replace the sentence "Reports for subsequent years (1999 and 2000) ..." with "Water use data for 1999 and 2000 was recently submitted by the jurisdictions and reports for these years will be prepared shortly."

Page 62: (MN DNR) last paragraph, delete 3rd and 4th sentences. These sentences are inconsistent with other sections of the report including, Chapter 6 and Chapter 8.

Page 62: (MN DNR) after last sentence, we could add a sentence saying a prime example of this is the ability to track self-supply domestic separately from self-supply commercial water use.

Page 63: (IN DNR) The end of the paragraph has a discussion of the need for more specific withdrawal data is discussed, but nothing is said about the problem associated with that: as the level of withdrawal data aggregation decreases, the degree of accuracy also decreases. (i.e., there will be less of a tendency for instances of over-reporting and under-reporting to cancel each other out as the data becomes more "localized") Inaccurate data is worse than no data.

Page 69: (MN DNR) Section 4.3.3, first paragraph, sentence starting with "Consumptive use figures are perhaps most reliable..." (5th line from bottom) Delete "perhaps" and replace "figures" with "data".

Page 73: (IN DNR) At the top of the page, a study shows "a lowering of water levels of up to one meter," but nothing about where this would occur or what type of water bodies affected.

Page 74 (Hudon): Recommendation 1, Isn't this proposition a green light to any and all water withdrawal projects on the table now?

Page 74: (OMNR) Second paragraph, the reference to no more than 10 years, where does this come from? I have heard that most municipalities do 20 year projections.

Page 74-77: (OMNR) The recommendations could be reordered, 4 may go before 2. Also recommendations between sections are related – 3 relates to 1. Recommendation 7 does not refer to the need to develop the consumptive use coefficients and is misleading.

Page 76: (OMNR) Table 7, Point 2 all data should be geo referenced; Point 4 with GIS applications and tools not just display; Point 6 for reasons of confidentiality some numbers will have to be aggregated.

Page 76: (MN DNR) Recommendation 7, At the end of the sentence Add ", until better methods of determining actual consumptive uses are established." (that way this concept carries through into the executive summary as well.

Page 77: (OMNR) Recommendation 8, many areas already do 20 year demand forecasts for municipal planning.

Chapter 5. Water Conservation

Page 80: (MN DNR) Page 80, Section 5.1.1, 2nd paragraph. The well interference problem in western Saginaw County where unregulated irrigation wells impacted over 30 domestic wells would be another good example.

Page 80-81: (OMNR) 5.1.1, There is a perception problem in the Great Lakes basin that we have so much water that there is no water supply problem. We need to bring that out here and in this section.

Page 81: (OMNR) 5.1.2, We need to briefly expand on how international trade laws implicate this activity.

Page 81-85: (OMNR) 5.2, Should we put references to the various drought contingency plans in our text? We should at least include these plans' web sites in the bibliography at the end of the section.

Page 88: (CGLG) **Strike or edit the first sentence in the last paragraph of Section 5.3.** While this may be a wise policy decision, and one that is eventually adopted by one or more of the Great Lakes Governors or Premiers, the language of the Annex states that the new standard principles, including the principle of conservation, will be applied only to new or increased uses. It would be fair, of course, to state that conservation should be applied to new uses and old uses that are increased, and the sentence could be changed accordingly.

Page 90 (Hudon): 5.5.1. Second paragraph, change "may" to "will" in both first and last sentences.

Page 90: (CGLG) **Strike the second sentence in section 5.5.1.** This sentence is redundant to the preceding sentence.

Page 90: (CGLG) **Strike the first recommendation in section 5.5.2, or delete references to "biased decision making", the prescription of setting regional goals, and the prescription of applying those goals to old withdrawal projects.** Our concern is that while these may be wise policy goals, they go beyond the language of the Annex and should therefore not be included in this report.

Page 91: (CGLG) **In recommendation 2, replace the word "guidance" with the word "models" or "conservation measure models" as appropriate.**

Page 91: (MN DNR) Change recommendation 3 to read something like "Develop a list of best management practices for water conservation by individual water use sector and establish an information clearinghouse,"

Page 91: (OMNR) Recommendation 4 is not clear. How does it relate to the project?

Page 91: (OMNR) Recommendation 4, We also need to better understand the range of natural variation of the resource and how to plan for the extremes.

Page 91: (OMNR) Recommendation 6, We should acknowledge the jurisdictional analysis that have already been done and work to incorporate these into the recommended analysis.

Page 91 (Hudon): Add to recommendation 6, "and use local communities to promote the benefits."

Page 91: (OMNR) Recommendation 7 should mention the perception problem here. (There is a perception problem in the great Lakes basin that we have so much water that there is no water supply problem.)

Page 91 (Hudon): Recommendation 7, include discussion on the need to follow up on the performance of the program and update it regularly.

Page 91 (Hudon): Add new recommendation (8): Develop a yearly state and provincial award "certificate" with "fiscal benefits" for the municipality that has made the most significant progress in water conservation.

Chapter 6. Ecological Impacts

Page 109: (OMNR) In this table, the wrong reference is given to the GAWSER model. Under supporting Agency, it should say "Schroeter and Associates, under sponsorship of the OMNR and the Grand River Conservation Authority"

Page 116 (Hudon): 6.5.1, before last sentence add, "In such cases, mandatory periodic review of any approved project would be done, including public consultation to evaluate any unforeseen impacts since its implementation."

Page 118: (OMNR) Recommendation 2 -- a include a reference to the spatial scale (i.e., watersheds as opposed to basin-wide, or even sub-basin studies) in the last sentence of the actual (bolded) recommendation In other words, the targeted studies should be designed around specific watersheds.

Page 118: (CGLG) **The third recommendation (especially with regard to its applicability to "no significant adverse impact") is a new recommendation and needs further discussion.** While the Project Management Team has discussed the priority of obtaining research and data on ecological impacts and identifying relevant indicators, these discussions have not been in the context of determining "no significant adverse impacts." It is important that this recommendation be fully reviewed, as the recommendation may have policy implications not fully explored thus far. In the absence of this discussion, the second half of the sentence beginning with "...that allow a determination..." should be stricken.

Page 118: (OMNR) Recommendation 3, Suggest that MNR should endorse the recommended link to the SOLEC indicator process: we can't afford a parallel indicator processes dealing with the same geography and resources that SOLEC does.

Page 118 (Hudon): recommendation 3, What about using indicators and thresholds to determine "significant adverse impacts" in Directive #3 (the reverse)?

Page 119: (OMNR) Recommendation 6, the reference to "Improve data" is not very clear; suggest rewording to include a reference to "...establishment of long-term monitoring programs..."

Page 119: (CGLG) **In recommendation 7, change the first sentence so that it reads “*Improve understanding of variability and uncertainty in flows and levels to bolster the decision support system.*”** By changing the language as above, we would be indicating that greater data collection is needed and that we need to improve our understanding of variabilities and uncertainties, but that it is up to the decision makers as to how that information will be incorporated into the decision making process.

Chapter 7. Improvement Standard

Page 124: (OMNR) 7.2.1, second paragraph, what is the point of the statement the public’s perception will very likely continue to evolve. Of course it will. Please delete the obvious. We need to capture here that the public is starting to understand that a healthy ecosystem results in a healthy natural resource.

Page 130: (OMNR) 7.3.2.1, last paragraph under “Potential Applicability,” there was a prevailing attitude that trade-offs need to be within common hydrologic regions that are within the same watershed and, in some cases, the same reach. Need to bring out that concern here.

Page 130-134 (and 142, 2nd paragraph): (OMNR) 7.3.2.2 and 7.3.3, Do not allow double counting. With more than one program underway it would defeat the purpose if various programs of banking and trade-offs resulted in one trade-off or one banking to be used for more than one program.

Page 136: (OMNR) 7.3.5, under “Potential Applicability,” A net gain is only a net resource improvement in this case if it provides gains to the resource in question rather than habitat. For Instance, the fisheries program needed to result in more fisheries (done through habitat) a water use program should result in more water for use.

Page 137: (OMNR) 7.3.6, under “Associated Issues,” wetland restoration has too many benefits such as improved productivity and hazard mitigation for us to be referring to wetland restoration as the price of doing business. Where is all that evolved public understanding we were talking about? The section puts too much of a negative spin on wetland restoration.

Page 142: (OMNR) Point 4 We need to be clear on our definition for cumulative impacts. This point speaks to cumulative impacts as I would define them not as defined in section 1.8.3

Page 143: (CGLG) **Strike the third paragraph as well as the fourth paragraph, beginning at “One part of measuring resource improvement....”** As agreed to at the October 1-2, meeting this language was to be pulled. We believe it to be too prescriptive in nature.

Chapter 8. Information and Communications

Page 146: (OMNR) 8.2, end of third paragraph, ...information has inherent uncertainties and limitations.

Page 147: (OMNR) Add words around Remote Sensing (new subtitle?) - satellite and airborne imagery is becoming much more affordable for operational applications. These data have applicability in classification for land use, land cover and wetlands. Imagery collected at different times can be used to monitor change over time.

Page 147: (OMNR) Take out subtitle heading “Information Overload” since it’s not technology.

Page 149: (OMNR) End of first paragraph, beginning at “Allowing all applications ...” should be moved up to section 8.2. (anywhere in particular?)

Page 149: (OMNR) “Quality of Data” should include currency, temporal and resolution issues.

Page 150: (CGLG) **In the lead off paragraph of section 8.6, the following sentence needs to be added to the end of the paragraph—“These tools and approaches are meant to be only illustrative in nature and by no means represent an exhaustive list of all the tools and approaches that may be available for enhancing communications.”** It is important that this list not be characterized as an exhaustive list of tools or an endorsement of these specific instruments, but instead examples of tools that are available.

Page 151: (CGLG) **In the section entitled “Intranet Portal”, strike the last sentence.** This particular sentence has not been discussed fully and may be too prescriptive in nature. In the absence of further discussion, we are unclear on what exactly the function and content of such a portal may be.

Page 151-152: (CGLG) **In the second to last paragraph on page 151, strike the last sentence and the next two paragraphs.** This particular text has not been discussed fully. Further, this text makes recommendations that would need to be discussed in that section of the document (i.e. the recommendations section).

Page 152: (CGLG) **Strike the second paragraph in section 8.7 in its entirety.** It was our understanding that the Project Management Team agreed that this paragraph would be stricken because this outline could be perceived as too prescriptive in nature. If it is to be included, further discussion will be necessary to edit the text to reflect our concerns.

Page 152: (MN DNR), Section 8.7, second paragraph. This example infers that all necessary data that an applicant needs would be available via the decision support system. The system should also identify items and studies the applicant will need to provide to complete the application and DSS process. A flow chart with the basic elements of a DSS could improve this section/ chapter.

Page 153 (Hudon): (cleaner version on Page 9) Recommendation 1, add “public” to web pages.; Recommendation 3, What about “yearly public meetings” to get the pulse of the local communities living near a withdrawal. Recommendation 4, add public.

Chapter 9. Pulling it All Together

Page 155 (Hudon): 9.1, second paragraph, how can uncertainties be both understood and applied?

Page 155 (Hudon): 9.1.1. second sentence is not needed, but could be changed to “... assumes somewhat of a responsible approach by scientists and government officials at scrutinizing over all available data facts and gaps to determine the limit we’re at in needed knowledge to best equip the deciding authorities in making”

Page 156 (Hudon): 9.1.2, point 4, add to the end of the sentence, “and the livelihood the impacted communities have come to cherish.”

Page 156 (Hudon): 9.1.2, final sentence, “Water conservation” is frozen in this sentence when it could be implemented at various levels in various ways throughout the system to preserve the resource. We have to enhance the efforts that are being done under this topic and send a clear message that it is unavoidable and necessary.

Page 157 (Hudon): 9.2, at the end, What about climatic changes – shouldn’t we include the massive uncertainties they have on the system?

Page 158: (MN DNR) Figure 1. Can this graphic be improved? It's not real easy to understand.

Page 159 (Hudon): Third full paragraph, first sentence, Why don't we initiate educational packages on these sensitivities for various levels of people within society instead of reserving it for the selected few "water resource management"; third sentence, strategy is one thing, education is another and is getting let go in this study.

Page 159: (MN DNR) Third full paragraph, second to last sentence "Water conservation strategies" Waiting until there is a problem to conserve is old school thinking, conservation should be done to prevent problems and eliminate or postpone the need for more restrictive conservation measures. Suggested replacement: "Water withdrawal limits or allocation strategies, for example, might then be targeted on highly sensitive watersheds that are already stressed by overuse."

Page 159: (OMNR) 9.3, first paragraph, "...groundwater that discharges directly into the Great Lakes and connecting channels is small relative to other flows. (Not sure this is actually quantified anywhere)

Page 160: (OMNR) 9.3, 2nd paragraph, Expansion of monitoring networks – include climate.

Page 160: (OMNR) In the second paragraph of 9.4, and more specifically in 1.8.3 of the executive summary, there is a fundamental disagreement with the description of cumulative impacts. Cumulative impacts are the net result of many small changes resulting in a large change not the impacts that accrue over time. This is a serious problem because the definition used here (that I disagree with) is not used in other places.

Page 161: (CGLG) **In the first paragraph beginning in the second line, strike the following language "...unresolved policy issues that may limit the practical implementation of the Annex."** It was our understanding that the Project Management Team agreed that this language would be stricken.

Page 161 (Hudon): after first full paragraph, Without slowing progress, this report should be followed by clear engagement, objectives and steps with a timetable to close understanding and data gaps.

Page 161: (CGLG) **Under section 9.5 in the first paragraph, beginning in the second line, strike the following language "...and how, or if, decisionmaking can occur without pieces of information."**

Page 161: (OMNR) First bullet,cumulative impact assessments is limited and ~~will likely be a weak link~~ must be addressed in the development

Page 161 (Hudon): 9.5, first bullet, replace "a weak link" with "an important factor in defining follow-up procedures."

Page 162: (CGLG) **Strike the two bullets that begin with "Socioeconomic and human health issues...." and "Dedicated and long-term monitoring programs...."** We are unclear on the meaning of these bullet points. Further, and to the extent that we understand their meaning, these points seem to be prescriptive in nature and should be left to decision makers.

Page 162: (CGLG) **In section 9.6, changes need to be made to the two bullet points.** These two bullet points may be controversial and would need further discussion before these findings are included in this report.

Page 163: (OMNR) 9.6, 2nd bullet, Increased computing speeds and evolving software tools will make integrated products....

Page 163: (IN DNR) 9.6, 3rd bullet, 2nd to last line, define what is meant by "metrics."

Page 163 (Hudon): 9.7, first bullet, replace it with, "Scientists, managers and decisionmakers will consistently do their best at obtaining all of the data and information that is considered relevant to water resources planning and management. It may be very difficult to obtain all the needed data;

Page 164: (OMNR) very last bullet and last sentence falls short of what is needed as a concluding statement. Given the acknowledged uncertainties and the implications of making a "wrong" decision, managers should apply the precautionary principle. Related to this point is the question of whether or not approval of a withdrawal can include a "sunset clause" or the right to modify the conditions of the approval, should it become apparent that significant adverse impacts are occurring (this may be addressed elsewhere in the report - I wasn't able to review all of it)

General Comments

(OMNR) Given the nature of the key issues - knowledge and data gaps; difficulties in assessing impacts at large spatial scales, many of the recommendations call for further research/study/analysis (e.g., Chapter 6, recommendations 2, 3 and 4). At some point, specific funding programs/opportunities, and agency participants, need to be identified. This isn't an issue if, as a next step, there are plans to produce an implementation plan.

(DFO) The recommendations are not directed anywhere and could just fall off the radar. The governors and other powers that be may find it easier to support a more specific recommendation via financing and direction. Perhaps an estimate of cost for the easier to quantify subjects would be a good idea and a prioritization of the recommendations. Also, what type of explicit plan is there that outlines how this report will be disseminated?

(Hudon): Offer recommendations to the 8 states and 2 provinces.

(Hudon): include St. Lawrence River in use of Great Lakes basin (for example, recommendations 6 and 12 of Chapter 3, second paragraph of Chapter 5 findings, Chapter 6 title, etc.)