International Joint Commission
Commission mixte internationale

March 16, 1999

Ms. Sarah Miller
Canadian Environmental Law Association
517 College Street, Suite 401
Toronto, ON M6G 4A2

Dear Ms. Miller

As promised in the letter which I sent you earlier (by fax), I am providing further information about the Experts' Workshop in which you have agreed to participate.

The following are enclosed in this package (by fax):

- Reference to the IJC from the governments on the consumption, diversion and bulk removal of water from the boundary region.
- List of experts invited to the workshop --- not quite complete.
- Agenda for the two days of the workshop.
- Questions for the experts to consider before and during the workshop.
- Names of the Study Team Members.
- Executive summary of the Commission's 1985 Report on Consumptive Uses and Diversions in the Great Lakes Basin

In addition, I am sending by courier the 1985 IJC report which responded to an earlier reference from governments and which focussed on diversions and consumptive uses of water in the Great Lakes.

The Commission would appreciate you familiarizing yourself with these documents. After reviewing the questions which form the basis for discussion at the workshop, I ask that you draft a preliminary response to them in 2-3 pages. It need not be comprehensive. You may address *any aspect of the subject matter which you consider important or in which you have a special interest.* If there are other perspectives, issues or questions which you feel are not included, please feel free to raise them as you see fit. Your response should be returned to me no later than Wednesday, March 24 by FAX (613-993-5583) or e-mail (clamenm@ottawa.ijc.org), so that all responses can be circulated to participants before the workshop.

Please forward also a brief biographical sketch (one page or less) which will be circulated to participants with your preliminary response.

Thank you for agreeing to help the Commission pursue a reasoned approach to the issues we will be discussing later this month.

Yours sincerely,

Murray Clamen
Secretary
Canadian Section

Department of Foreign Affairs and International Trade

CANADA

Ministère des Affaires étrangères et du Commerce international

Ottawa K1A 0G2
February 10, 1999

URE-0023

Mr. Murray Clamen
Secretary
Canadian Section
International Joint Commission
100 Metcalfe Street
Ottawa K1P 5M1

Dear Mr. Clamen,

I have the honour to inform you the Governments of the United States and Canada have agreed, pursuant to Article IX of the *Boundary Waters Treaty* of 1909, to request the Commission to examine into and report upon matters concerning the use of waters along our common border.

Recently, a proposal to export water by tanker from Lake Superior arose. The Governments are concerned that individual projects of apparently minor effect will set a precedent of bulk removal of water from the Great Lakes basin, opening the Great Lakes and other water bodies to subsequent water removal initiatives, with unpredictable consequences. The bulk removal of water raises serious concern over cumulative impacts on lakes, rivers and other water sources.

Boundary water resources continue to be the subject of ever-increasing demands in the light of expanding populations. Proposals to use, divert and remove greater amounts of such waters can be expected.

The Governments are concerned that current management principles and conservation measures may be inadequate to ensure the future sustainable use of our shared waters.

The Commission is requested to examine, report upon, and provide recommendations as the Commission deems appropriate on the following matters which have, or may have, effects on levels and flows of waters within the boundary or transboundary basins and shared aquifers:

.../2

a) Existing and potential consumptive uses of water.
b) Existing and potential diversions of water in and out of the transboundary basins, including withdrawals of water for export.
c) The cumulative effects of existing and potential diversions, and removals of water, including removals in bulk for export.
d) The current laws and policies as may affect the sustainability of the water resources in boundary and transboundary basins.

The Governments note that extensive research has already been conducted about the Great Lakes, in particular, the Commission's January 1985 report *Great Lakes Diversions and Consumptive Uses*. The Governments believe that the Commission's 1985 Report with respect to the Great Lakes, including Lake Michigan, provides a good basis on which to begin the study. In the light of this existing body of knowledge pertaining to the Great Lakes, as well as the urgency of this issue precipitated by export proposals, the Governments request that the Commission give first priority to an examination of the Great Lakes basin, focussing on the potential effects of bulk water removal, including removals for export and provide interim recommendations for the protection of the waters of the Great Lakes, as can be developed from available data, in six months from February 10, 1999.

The Governments further request that the Commission subsequently complete other work on the Great Lakes as may be needed. The Commission is asked to submit its final report on the Great Lakes at the latest six months after the interim report.

In its final report on the Great Lakes, the Commission is further requested to report on additional work that may be required to better understand the implications of consumption, diversions and removal of water, including removals for export from other boundary waters, waters of transboundary basins, and groundwater of shared aquifers. In this regard, the Commission is asked to prepare a plan proposing the phasing of such additional work.

In preparing recommendations, the Commission shall consider in general terms such matters as potential effects on the environment and other interests of diversions and consumptive uses and where appropriate, the implications of climatological trends and conditions.

In the conduct of its investigation and the preparation of its report, the Commission shall have use of information and technical data available to the Governments and that may become

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available to the Governments during the course of its investigations. In addition, the Commission shall seek the assistance, as required, of specifically qualified personnel in the two countries.

The Governments shall seek to make available, in equal shares, the funds required to provide the Commission with the resources needed to discharge the obligations under this reference. The Commission shall develop, as early as practicable, cost projecting for the studies under reference, for the information of the Governments.

An identical letter is being sent to the Secretary of the U.S. Section of the Commission by State Department.

Yours sincerely,

David Preston
Director
U.S. Transboundary Division

List of Experts Attending
IJC Experts Workshop on
Water Consumption, Diversion and Removal
Toronto, ON March 30-31

Canadian Experts

Dr. Peter Pearse
6450 Elm Street
Vancouver, B.C. V8V 1B3
Tel: 604 261-4060
Fax: 604-261-7853

Mr. Dean Jacobs, Executive Director
Walpole Island Heritage Centre
RR #3
Wallaceburg, ON N8A 4K9
Tel: 519-627-1475
Fax: 519-627-1530

Ms. Sarah Miller
Canadian Environmental Law Association
517 College Street, Suite 401
Toronto, ON M6G 4A2
Tel: 416-960-2284
Fax: 416-960-9392

M. Paul-Emile Barbeau
105 Côte de la Montagne, bureau 701
Québec, PQ G1K 4E4
Tel: 418-694-0543
Fax: 418 694-2259

Mr. James Bruce
1875 Juno Avenue
Ottawa, ON K1H 6S8
Tel: 613-731-5929
Fax: 613-731-3509

Dr. Ronald Loucks
Loucks Oceanology Ltd
24 Clayton Park Drive
Halifax, NS B3M 1L3
Tel: 902-443-1113
Fax:

US Experts

Dr. Gilbert F. White
National Hazards Research &
Applications Center
University of Colorado at Boulder
Campus Box 482, IBS #6
Boulder, CO 80309-0482
Tel: 303-492-6311
Fax: 303-492-2151

Mr. Richard Wahl
2575 Briarwood Drive
Boulder, CO 80303
Tel: 303-499-8638
Fax: 303-499-8638

Mr. A. Dan Tarlock
Professor of Law
Chicago-Kent School of Law
565 W. Adams Street
Chicago, IL 60661
Tel: 312-906-5217
Fax: 312-906-5280

Mr. Ric Davidge
Alaska Water Exports
3705 Arctic Blvd., Suite 415
Anchorage, AK 99503
Tel: 907-274-7074
Fax: 907-258-7072

Draft 1

EXPERTS POLICY WORKSHOP
Related to the
WATER USES REFERENCE

March 30 - 31, 1999

WESTIN HARBOUR CASTLE HOTEL, HARBOUR A ROOM, TORONTO

DAY 1. MARCH 30, 1999

Continental Breakfast available outside room from 8:00 a.m.

1. INTRODUCTION

8:30- 9:00
- Welcome by Commission Chairmen Legault & Baldini
- Introduction of participants
- Introduction by Chairmen regarding the Reference, and the purpose of the workshop

9:00- 9:30
- An Overview of Projects and Proposals to move water - Frank Quinn, Environment Canada, on assignment to the Reference Study Team

2. SESSION A[1]

Laws and Policies that bear on the sustainability of the water resources in boundary and transboundary basins, including shared ground water resources

9:30-10:30 • Law and Policy

10:30-10:45 • Break

10:45-12:00 • Law and Policy (continued)

12:00- 1:00 • Lunch (provided)

1:00- 2:30 • Law and Policy (continued)

2:30- 2:45 • Break

2:45- 5:00 • Management Principles and Conservation Measures

6:00- 7:00 • Reception, Regatta Room

Dinner on your own

END OF 1ST DAY SESSION

[1] In Session A and Session B, participants should be guided by the suggested Questions attached to this Agenda

1999/03/16

Workshop Questions

Introduction

In reviewing the language of the reference, it would appear that a common understanding of the terms **"sustainable use of our shared waters"** and/or **"sustainability of the water resources in boundary and transboundary basins"** is important to participants in addressing the substantive issues raised in this workshop. Therefore, as a guide to participants in their deliberations, the following text on sustainability/sustainable use is offered:

"One should not consider the sustainable use(s) of water as simply those to meet burgeoning human needs. The sustainable use of water should incorporate the "ecosystem approach" which is endorsed by both Parties. This holistic and integrated approach emphasizes system elements and relationships which link people, societies, economies and the environment. It has directed people's thinking to ways of linking water quality and quantity, ground and surface water, water to land and other environmental aspects, water to the economy and society's needs, and water to the biological diversity and integrity of ecosystems. Sustainable use outcomes should be consistent with the purpose of maintaining or improving the particular (in this instance, the Great Lakes) ecosystem's (evolving) integrity and contributing to the well-being of that ecosystem's living systems, including humans, both now and into the future."

The questions below are offered to participants in the workshop to stimulate discussion and elicit helpful views and ideas from which the Commission can draw in preparing its reports to governments. If there are issues and/or questions missing, feel free to raise them. While participants can provide a global and North American perspective on any question or issue, the prime focus should be on the Canada-US border region, with priority to the Great Lakes basin.

The questions are arranged under two broad subject areas as shown.

A. Laws and policies that bear on the sustainability of the water resources in boundary and transboundary basins including shared ground water aquifers.

Questions on law and policy:

To what extent is the concept of sustainability of surface and groundwater resources incorporated into the legal and policy regimes of both countries, particularly in the Great Lakes basin? What legal and policy instruments have been used by jurisdictions (federal, provincial/state, first nations) in the two countries to conserve water or otherwise to support this concept of sustainability?

How effective have these instruments been in support of sustainability? If not (or only partially) successful, what needs to be done to assure such success? If serious gaps in law and/or policy remain on moving towards sustainability, what realistic options are available to fill those gaps?

Are the international legal principles governing groundwater resources different from those that apply to surface water, both generally and specifically in the Great Lakes basin, and how do these principles give weight to the concept of sustainability?

Since good policy is founded on sound science, are there scientific needs that also need to be addressed before these policy/law gaps can be filled?

Questions on management principles and conservation measures:

The Governments have expressed concern that current management principles and conservation measures may be inadequate to ensure the future sustainable use of our shared waters. For instance, while trends in consumption of water appear to be not as high as originally projected in the Commission's 1985 report, nevertheless, it represents a substantive (potential) removal from the Great Lakes basin. Also, increased pressures for use of the shared water supplies of the two countries are forecast for the 21st century, which may be compounded by climate change.

Can you suggest ideas on how the waters of the Great Lakes can be protected for the long term to ensure sustainable use of these waters for both countries, including sustaining the Great Lakes indigenous aquatic ecosystems? How does one place a value on the many uses to which waters are or could be put, including in-stream uses, in order to inform the decisions of those who allocate water?

What are realistic alternatives for promoting water conservation, reducing demand and/or extending/stretching available water supplies?

B. Existing diversions, past proposals, and reasonably foreseeable proposals for diversions of water in and out of boundary and transboundary basins, including bulk removals of water for export.

Questions on the experience and impacts/effects of diversions, and the legal mechanisms used :

What has been the experience in the United States and Canada, and elsewhere in the world, regarding inter-basin diversions and bulk shipments of water? What have been the economic, social, environmental/ecological benefits and/or adverse effects for both the sending and receiving areas? What lessons have been learned? What were the legal/policy mechanisms to accomplish, regulate or prohibit such inter-basin transfers?

In particular, what might be the cumulative effects (economic, social, environmental/ecological) of existing and potential consumption, diversion and other bulk removals of water, including the potential effects of climate change, on the Great Lakes basin/ecosystem?

What legal/policy barriers have been imposed in either the US or Canada to the transfer of water between basins or states/provinces? How effective have these been? In particular, the Great Lakes Charter and the US Water Resources Development Act (1986) either seek and/or require the consent of all Great Lakes States for diversions or bulk removals of Great Lakes waters. Would a similar requirement at the binational level provide a sound and feasible basis for management of Great Lakes waters?

Is a prohibition of inter-basin diversions or other bulk removals a sound policy for management of Great Lakes waters? Is it feasible in law and practice?

Questions on trade and commerce:

To what extent have legal issues related to commerce or trade been involved with water removals in North America? Do past legal/court decisions create precedents

which influence/dictate the future as regards the transfer of water between basins or jurisdictions?

Do trade agreements(GATT and NAFTA) impose constraints on and/or risks to policy/law making relating to bulk removals of water for export/sale? How can these constraints/risks be minimized/reconciled?

Questions on markets for water, business case studies, costs of delivery of water as compared with alternative supply options to satisfy the demand for water in areas of need.

Can a business case be made for the bulk export and sale of water from the Great Lakes to distant regions/ countries? Where are the (potential) markets --- continental and/or global --- and is there a demand, or likely to be a demand, in the future? Have any such business cases been done for Great Lakes water? Are there realistic proposals for short or long-distance transfers of water from one basin to another involving U. S. and/or Canadian watersheds? What are the available alternatives (to removals) to regions in need, and how do the costs of these alternatives stack up against bulk transfer by tanker or pipeline? Do business cases typically take social and environmental factors/costs into account?

For those constituencies which oppose bulk removals of water, including bulk export for sale, are there circumstances in which the removal/export of water might be considered appropriate?

Is groundwater currently being moved across the Canada-US boundary (or across the perimeter of the defined surface watershed of the Great Lakes basin), caused either by greater draw-down on one side or by bulk transfer/transport of water, and if so, how much, and from where? (Note: Groundwater basin boundaries are not always coincident with surface water basin boundaries). Are there any safeguards in place for existing users of those aquifers in the event that groundwater supplies might be depleted over time?

Clarke/Chandler

Updated February 16, 1999

CONSUMPTION, DIVERSION AND BULK REMOVAL OF WATER REFERENCE

Canadian Section

Mr. Ralph Pentland, Co-Director
International Joint Commission
100 Metcalfe Street, 2nd floor
Ottawa, ON K1P 5M1
Tel: 613-995-9611
Fax: 613-995-9644
E-Mail: pentlandr@ottawa.ijc.org

Mr. Douglas Cuthbert
Manger, Water Issues Division
Environment Canada
Box 5050
867 Lakeshore Road
5th floor, Room L523
Burlington, ON L7R 4A6
Tel: 905-336-4713
Fax: 905-336-8901
E Mail: doug.cuthbert@cc.gc.ca

Mr. J. Owen Saunders, Executive Director
Canadian Institute of Resources Law
MF-3300
The University of Calgary
Calgary, AB T2N 1N4
Tel: 403-220-3979
Fax: 403-282-6182
E-Mail: josaunde@ucalgary.ca

Member from Québec

Ms. Paula Thompson
Water Policy, Program Advisor
Waters Management Section
Lands & Natural Heritage Branch
Ministry of Natural Resources
P.O. Box 7000, 300 Water Street
Peterborough, ON K9J 8M5
Tel: 705-755-1218
Fax: 705-755-1267
E-Mail: thompsp@gov.on.ca

IJC Liaison
Mr. Anthony Clarke
Senior Environment Advisor
International Joint Commission
100 Metcalfe Street, 18th floor
Ottawa, ON K1P 5M1
Tel: 613-995-0930
Fax: 613-993-5583
E-Mail: clarket@ottawa.ijc.org

Dr. Frank J. Quinn
International Joint Commission
100 Metcalfe Street, 2nd floor
Ottawa, ON K1P 5M1
Tel: 613-947-0003
Fax: 613-995-9644
E-Mail: quinnf@ottawa.ijc.org

Updated February 15, 1999

CONSUMPTION, DIVERSION AND BULK REMOVAL OF WATER REFERENCE

United States Section

Colonel James Hougnon, Co-Director
Deputy Regional Commander
Great Lakes Regional Office
U.S. Army Corps of Engineers
111 N. Canal Street, 12th floor
Chicago, IL 60606-7205
Tel: 312-353-6310
Fax: 312-353-5439
E-Mail: James.R.Hougnon@usace.army.mil

Mr. Gary N. Paulachok, P.G., District Chief
Water Resources Division
U.S. Geological Survey
840 Market Street
Lemoyne, PA 17043-1586
Tel: 717-730-6913
Fax: 717-730-6997
E-Mail: gnpaulac@usgs.gov
Alternate: Mr. Bill Shope,
USGS, Reston, VA
Tel: 703-648-5364
E-Mail: wgshope@usgs.gov

Dr. Michael J. Donahue
Executive Director
Great Lakes Commission
The Argue II Building
400 Fourth Street
Ann Arbor, MI 48103-4816
Tel: 734-665-9135
Fax: 734-665-4370
E-Mail: mdonahue@glc.org

Ms. Shannon E. Cunniff
Bureau of Reclamation
Department of Interior
1849 C Street, NW, Mail Stop 7060
Washington, DC 20240
Tel: 202-208-5007
Fax: 202-208-3887
E-Mail: scunniff@usbr.gov

Ms. Margaret Grant, Executive Director
Council of Great Lakes Governors
35 East Wasker Drive, Suite #1850
Chicago, IL 60601
Tel: 312-407-0177
Fax: 312-408-0038
E Mail: mgrant@cglc.org
Alternate: Mr. Jeffrey Edstrom
CGLG, Chicago, IL
E-Mail: edstrom@cglg.org

IJC Liaison
Mr. James Chandler, Legal Advisor
International Joint Commission
1250, 23rd Street, NW, Suite #100
Washington, DC 20440
Tel: 202 736 9017
Fax: 202-736-9015
E-Mail: chandlerj@washington.ijc.org

Mr. Bruce Bandurski, Ecomanagement Advisor
International Joint Commission
1250, 23rd Street, NW, Suite #100
Washington, DC 20440
Tel: 202-736-9011
Fax: 202-736-9015
E-Mail. bandurskib@washington.ijc.org

Great Lakes Diversions and Consumptive Uses

A Report to the Governments of the
United States and Canada under the 1977 Reference

January 1985

EXECUTIVE SUMMARY

Introduction

The Great Lakes, their connecting channels and the St. Lawrence River have been the key to the development of the industrial heartland of North America, providing economical and efficient transportation; low-cost hydro-electric power; abundant water supplies for domestic, agricultural and industrial needs; and for depositing municipal and industrial discharges. Estimates of economic activity in 1975 amount to some $155 billion in the United States portion of the basin and some $27 billion in the Canadian portion. In addition to their economic and social value and the contribution the Great Lakes make to the quality of life of the citizens of the basin, their environmental value is incalculable, containing as they do numerous species of mammals, reptiles, birds, fish and plants.

The basin's abundant water supply has largely been taken for granted, for the lakes are the largest freshwater chain in the world and store about one-fifth of the world's fresh water. Serious disputes have not arisen between the United States and Canada regarding the use of this shared resource, even though all of the water the basin contains is currently being utilized in some way. There is in effect no 'surplus' resource, but rather competition among users. Yet if demands on the resource increase, the competition among users, both domestic and international, will do likewise. It is appropriate, therefore, to examine existing and potential activities that have or could have a significant impact on the supply and consequently the sharing of the resource.

This Report of the International Joint Commission concerning diversions and consumptive uses of Great Lakes water has been prepared in response to a reference from the Governments of Canada and the United States, dated February 21, 1977, and continues the Commission's long involvement in Great Lakes water quantity issues, which first emerged through concern about lake levels. The Commission established the International Great Lakes Diversions and Consumptive Uses Study Board (the Study Board) to conduct the required technical investigations.

The Commission's Report on the reference is in two parts. Part One examines the effects of existing diversions, the potential to improve extremes in Great Lakes levels by changing existing diversion flow rates, and existing and projected consumptive uses in the Great Lakes basin. Part Two provides a broader and more appropriate context within which to address the longer-term prospects for the use of Great Lakes water.

Part One: Diversions

The Commission reviews the existing diversions at Long Lac, Ogoki, Chicago, and the Welland and New York State Barge Canals. The review shows that the diversions at Long Lac, Ogoki, Chicago and the Welland Canal have produced changes in Great Lakes levels and outflows, though the hydraulic effects are small in relation to the natural ranges on the lakes. The New York State Barge Canal diversion has no hydraulic effect on any of the Great Lakes. The diversions have also increased the long-term mean outflows from each lake, but the current regulation plans for Lakes Superior and Ontario have been designed to accommodate these diversions.

The Commission finds that while each diversion has been analysed to the extent possible within the constraints of the investigation, the information available is insufficient to draw any cumulative basin-wide economic or environmental implications. For many reasons discussed in the Report, the economic analysis must be treated with caution as a basis for decision-making.

With respect to the existing diversions, the Commission notes that there is a history of consultation and a recognition of the legitimate interests of both countries that has, regardless of legal considerations, by and large been reflected in mutual co-operation and concern. Nevertheless, there are several matters regarding existing diversions, both large and small, that might usefully be examined by Governments. For example, the Commission finds that although most data on existing major diversions are reported regularly to both Governments, through the Commission or otherwise, this does not appear to be the case for small diversions. In addition, the international requirements under the 1909 *Boundary Waters Treaty* with respect to both large and small diversions of boundary waters are not explicit, nor is any consistent practice followed.

The Report examines the Increased Lake Michigan Diversion at Chicago Demonstration and Study Program authorized by the U.S. Congress in October 1976. The study portion of the program resulted in several computer model simulations of large diversion increases; they determined that such increases were not economically justified. The demonstration part of the program was never funded and no actual demonstrations were conducted. The Commission finds that there are now no sponsored or approved new or changed major diversions in the basin.

The Commission's investigation shows that the present flow rates of the four diversions studied can be modified without structural change at existing locations to reduce high levels and raise low levels by various but small amounts. With respect to reducing levels, under all diversion management scenarios except one – which essentially has been in effect since 1979 and has a financial benefit – substantial net annual direct financial losses appear to accrue to the sectors considered in the analysis. The net losses are such that the further manipulation of diversions for the purpose of alleviating the adverse effects of high lake levels is not justified. As for raising low levels, the one alternative studied would result in a small net financial loss as currently assessed. However, should hydrological or economic criteria within certain sectors change significantly in the future, or should other considerations that would benefit from such a changed regime be given sufficient weight, the divergence of values under this scenario is sufficiently small that this management scenario might become more attractive.

Part One: Consumptive Uses

The second major area considered in Part One involves existing and reasonably foreseeable patterns of consumptive uses in the Great Lakes basin. Large quantities of water are withdrawn from the Great Lakes and their surface and groundwater tributaries for industrial (primarily manufacturing and power generation), agricultural and domestic purposes and for other human activities. In 1975, the base year for the Study Board's work, withdrawals in the Great Lakes basin totalled roughly 2,120 cubic metres per second (75,000 cubic feet per second), with close to 95 per cent of this water being returned to the basin after use.

Consumptive uses as reported by the Commission's Study Board totalled about 140 cms (4,950 cfs) in 1975. Another estimate of consumptive uses for the U.S. portion of the basin by the United States Geological Survey differs considerably from that of the Study Board. Consequently, the Commission finds that existing (1980) consumptive uses may be in the range of 82 cms (2,900 cfs) to 159 cms (5,600 cfs). The Commission emphasizes, however, that regardless of which estimate is more accurate, existing consumptive use data need to be improved in several areas in order to establish useful historical trends and to improve forecasts.

In assessing future consumptive uses in the Great Lakes basin, the Commission carefully considered the Study Board estimates for the years 1975 to 2035. The Commission concludes that projections beyond the year 2000 are too speculative and uncertain for planning and policy decisions given the imprecision in the forecasts of economic and demographic changes and the differing estimates of existing consumptive uses in the U.S. portion of the basin. In addition, the Commission revised downward the Study Board's estimates for the two largest growth sectors, power generation and manufacturing, based on events since the Study Board completed its work.

The Commission's investigation shows that consumptive uses in the Great Lakes basin will increase and that, based on current information and analysis, the most likely projection of consumptive uses in the year 2000 will be of the order of 161 cms (5,700 cfs) to 238 cms (8,400 cfs). The Commission concludes there is a strong need for continual improvement in information on historical and projected water use trends in general and consumptive use trends in particular within the Great Lakes basin. Should changes in public policies regarding these trends prove desirable in the future, a continuous data and information base would provide an invaluable foundation.

Part Two

In this part of the Report the Commission addresses a number of matters that warrant the attention of appropriate jurisdictions in the United States and Canada as new or changed uses of Great Lakes waters are considered in the future. The Commission notes that not all existing large diversions appear to be subject to international control either by the Commission under the *Boundary Waters Treaty* or pursuant to special agreements between the Governments. The practice has been to permit domestic law and procedure to govern some large diversions, most small diversions and the consumptive use of Great Lakes water. While specific provisions of law and procedure vary from jurisdiction to jurisdiction, the legal regimes throughout the Great Lakes basin, unlike those further west, place relatively few restrictions on the use of water.

The *Boundary Waters Treaty* of 1909 contains some guidance to methods of addressing a range of issues raised recently at the initiative of one or both Governments or of individual jurisdictions. Its provisions appear sufficiently broad to permit agreed contemporary interpretation by the Parties. The Commission notes that the overall international legal regime is not to be found only in the texts of treaties. It has evolved and continues to evolve through a combination of agreements, custom, judicial decisions and writings. The jurisprudence of the International Joint Commission is a particularly significant element. In addition, it is necessary to look at history in order to put the various elements in proper perspective.

The Commission reviews recent diversion proposals involving Great Lakes water that have received press and public attention. The Report recognizes, however, that no major diversion from the Great Lakes basin is now under formal consideration and that none of the concepts is currently proposed or endorsed by any government directly involved in the management of the water. The Commission concludes that, although these large-scale diversions may be technically possible, at this time they have little political support; that they could be undertaken only at enormous, and at present unjustified cost; and that they would have unknown but likely significant social and environmental effects.

There may be circumstances in the future that could change this assessment. Changed global climatic conditions, or major shifts in current economic or political parameters, such as a world food crisis, are examples of events that could lead to a more serious interest in large inter-basin transfers of Great Lakes water. Furthermore, climate changes could lead to some reduction in basin precipitation and increased consumptive uses that would further reduce net basin supplies.

With this in mind the Commission suggests that in planning for the future Governments develop policies that would provide adaptive mechanisms for dealing with change and the unexpected. The Commission believes that this process will be evolutionary in nature, similar to the process that has emerged in addressing the issue of Great Lakes water quality. In this regard the Commission expects Governments will engage in water quantity discussions well in advance of and separate from the formal review of the 1978 *Great Lakes Water Quality Agreement*, and the Commission supports these early initiatives. It may also be useful for Governments to incorporate as they deem appropriate the relevant observations and conclusions of this Report at the time of the review.

The Commission notes that several anticipatory initiatives have already been or are being undertaken by the Parties and jurisdictions in the Great Lakes basin. The Commission believes that all these discussions and studies are important and relevant and should be encouraged, for they are all clearly germane to the issue of the diversion and consumptive uses of Great Lakes basin water.

Recommendations

Based on the foregoing considerations and conclusions, the Commission's response includes the following recommendations, which the Commission believes will assist Governments in effectively addressing future considerations regarding the use of Great Lakes water:

1. Regarding the general aspects of diversions and consumptive uses –

   a) Governments establish a bilateral data committee, separate from the Commission, to monitor all existing diversions and consumptive uses in the Great Lakes basin and publish data as appropriate, but no less frequently than biennially. This committee would also recommend appropriate additional research and monitoring efforts that would be necessary to develop the methodology and data to derive a more accurate estimate of existing consumptive uses in the Great Lakes basin. The committee's report should be made public.

   b) Governments authorize the establishment of a bilateral task force on diversions and consumptive uses, either by a reference to the Commission or otherwise. The task force would be created periodically, but no less frequently than every five years, and would update previous consumptive use projections, assess the impacts of those projections, review the potential for new or changed diversions, and make appropriate recommendations. Governments should agree to consult on each task force report. The task force would use information from the bilateral data committee, as well as other sources, and would build on the existing methodology developed in each country. The task force should have available to it pertinent social, economic and demographic data both within and outside the Great Lakes basin context, but would likely need to concentrate initially on the principal water use sectors of power and manufacturing. Membership on each task force would be determined by the nature of the primary issues at that time.

   c) Governments institute a co-operative review of current public policies at the federal and state/provincial levels to identify those having an effect on consumptive uses and to examine any that appear to have a significant potential for reducing such use.

   d) Governments, taking into account the existing and possible future diversion of water into the Great Lakes, consult on the status of waters so diverted.

2. Regarding existing and future small diversions, Governments institute surveys on both sides of the border to identify and quantify existing and proposed small diversions and establish a mechanism whereby information is made available to the bilateral data committee.

3. Regarding the management of existing diversions to ameliorate high and low levels –

   a) Governments not consider under present conditions the further management of Great Lakes levels and outflows through the manipulation of existing diversions.

   b) Governments take steps to ensure that better coastal zone management practices are followed to help reduce flood and erosion damage along the Great Lakes shoreline.

4. Regarding federally, state or provincially sponsored or approved new or changed diversions

   a) Governments resolve the questions discussed in Chapter III of this Report.

   b) Governments engage in a process of notice and consultation before additional new or changed diversions are approved.

5. Regarding the broad aspects of this report, federal, state and provincial governments undertake appropriate measures to inform the public of the results of this study and to initiate an educational effort directed toward better understanding of the nature and effect of consumptive uses.