

DRAFT # 3, 1999/03/16
Work Plan
for
the IJC Reference
on
Consumption, Diversions and Removals
of
Great Lakes Water

The two main products of the work plan are draft reports from the study team to the Commission, namely a draft interim report after 4 months, and a draft final report 4 months later. The Commission will use these drafts in finalizing their reports to governments. The substantive information for the draft reports will be derived from the following working papers.

A. Working Papers

The working papers are to be produced by the work groups identified below within the time-lines shown. Brief descriptions of the tasks are appended to this work plan as guidance to the work groups. They are not intended to constrain creativity in any way, and will therefore be modified as appropriate as each group proceeds with its work.

Study team leaders/liaison persons identified with each task are to initiate work as soon as possible. In some instances, the names of all working group participants have not yet been identified although their organizations are in most cases. The study team leaders are asked to finalize the composition of their working groups as quickly as possible. **Work groups/leaders on the various tasks are to report on progress at the study team's meeting in Toronto on April 1, which follows the Experts Workshop. Thereafter, regular status updates are expected on a monthly basis.**

The co-directors of the study team are responsible for leading the integration of the substance of the working papers into the two draft reports, which will ultimately be forwarded to the Commission for finalization.

TASK #1. The Setting

- The purpose of this working paper is to define the context within which the reference is taking place, to frame the key issues, and ultimately to provide the substance of the introduction to the Commission's reports. As part of this task, a description of the Great Lakes basin is to be included in terms of such elements as its hydraulic characteristics,

demographics, economic activity and the evolving industrial structure of the region, along with the on-going changes and stresses to that ecosystem.

- The **working group** is comprised of **Mike Donahue** and **Paula Thompson** as the study team leaders/liaison on this task, and **Frank Quinn** of the study team's "secretariat" as a resource person in the drafting of this section of the report.
- A **first draft** of the working paper is to be provided to the co-directors by **April 30, 1999**, with the **final draft** no later than **May 23**.
- There is no cost to the Commission for this task.

TASK #2. Consumptive Uses and Projections of Great Lakes Water Use

- The purpose of this working paper is to estimate consumptive uses of water in the Great Lakes basin based on current water use, and to project consumptive uses into the foreseeable future, say to the year 2020, based on population and industrial growth forecasts and other relevant variables. An explanation is needed as to why estimates of consumptive uses in the 1990's are so different from those originally projected in the 1980's. An important element of this task therefore, is to ensure a common binational understanding of the assumptions that will form an agreed upon basis for the modeling exercise.
- The working group comprises **Mike Donahue** as the study team liaison on this task, along with **Don Tate**, GAIA Economic Research Associates, **Ian Cameron** of the Ontario Ministry of Natural Resources, **Tom Crane** of the Great Lakes Commission, and **Wayne Solley** of the USGS.
- A **first draft** of the working paper is to be provided to the co-directors, by **April 30, 1999**, with a **final draft** no later than **May 23**. The working paper for the draft interim report is expected to be reasonably complete, with the possible exception of the ground water component.
- There will be a cost for a contract to estimate and project consumptive uses in Canada.

TASK #3. Diversions and Bulk Removals of Great Lakes Water

- The purpose of this working paper is to document the nature and extent of diversions into, out of, and within the Great Lakes basin, and also to indicate those diversion proposals that are currently on the foreseeable horizon. It is important to frame this topic within the context of what is occurring elsewhere in the North American region and the world. Although there are no registered official bulk removals of water for export or sale, nevertheless there is a "sense" that water is being removed from the Great Lakes basin in

a variety of ways such as ballast water for ocean freighters and bottled water for human consumption. The working group is expected to investigate this aspect and estimate such removals, as well as the probability that further demands of these types may materialize.

- The working group comprises **Margaret Grant** of the Council of Great Lakes Governors (CGLG) as the study team liaison, with **Jeff Edstrom** of the CGLG as a group member together with **Paula Thompson** of MNR, Bonnie Fox from the **Ontario Ministry of the Environment**, **Frank Quinn** of the "secretariat", and members to be named from the **Army Corps of Engineers** (Jim Hougnon to do) and the **Great Lakes Commission** (Mike Donahue to do).
- A **first draft** of the working paper is to be delivered to the co-directors by **April 30, 1999**, with the **final draft no later than May 23**.
- No cost to the Commission is forecast for this task, with the possible exception of a small contract to gather information on the shipping industry.

TASK #4. Climate Change and the Great Lakes

- The purpose of this working paper is to identify the potential influence of human-induced climate warming due to the "greenhouse effect" on the Great Lakes. Based on the Intergovernmental Panel on Climate Change (IPCC) commonly used scenarios of mean average global temperature rise in the 21st century transposed to the Great Lakes region, the influence on the basin is to be estimated in terms of reduced net supplies of water and consequent impacts on levels and flows, together with the attendant risks posed to the economy, society and the environment. Possible adaptation strategies for the future should be included in the paper.
- The working group comprises **Doug Cuthbert**, Environment Canada as the study team liaison with **Frank Quinn** of NOAA (confirmed), **Linda Mortsch** of Environment Canada (confirmed) and **Harry Lins**, USGS (Gerry Galloway to confirm) as group members. Linda and Frank are free to co-opt additional expertise into their group as they see fit.
- A **first draft** of the working paper is to be delivered to the study team co-directors by **April 30, 1999**, with a **final draft** no later than **May 23**.
- No cost to the Commission is expected for this task.

TASK #5. Cumulative Impacts/Risk Assessment

- The purpose of the working paper is to bring together the analyses related to consumptive uses, diversions, other bulk removals of water and possible climate change influences in order to obtain an understanding of the probable cumulative impacts on the

Great Lakes and the risks posed by such impacts. The paper is expected to look beyond those reasonably understood aspects to other factors on basin-wide, regional, continental or global scales which may arise in the medium to longer term, and which may exert pressures, either directly or indirectly on the Great Lakes ecosystem.

- The working group comprises **Doug Cuthbert** as the study team liaison, with members from the **Army Corps** (Jim Hougnon to do), **EPA** (Shannon Cunniff to do), **Council of Great Lakes Governors** (Jeff Edstrom to do) and the **Province of Ontario** (Chris Lompart, MOE). To ensure that possible consequences/risks to economic interests and the environment are adequately assessed, persons from outside of government institutions may be added to the group as required, as for example, from shipping, hydro power, environmental and shoreline interests.
- A **first draft** of the working paper is to be delivered to the co-directors by **May 15, 1999, with a final draft no later than May 31.**
- There may be small contract costs incurred to the Commission for this task.

TASK #6. Assessment of the Legal Regime in the Great Lakes Basin

- The purpose of the working paper is to provide an overview of the legal regimes of all jurisdictions (federal, state/provincial/first nations) for water management in the Great Lakes basin, and an assessment of the degree to which the principle of sustainability of the resource is accommodated in the basin. Also, a review of the international legal regime which can impact on water is required, including implications/constraints of international trade law.
Because of the inter-connectedness of groundwater and surface water hydrology, the legal assessment for groundwater is to be integrated to the extent possible with that of surface waters, even though the legal regimes for groundwater differ significantly from those of surface waters. Applicable policy instruments such as the Great Lakes Charter should be covered in this paper.
A legal assessment on the concept of privatization of water rights is also to be included.
- The working group comprises **Owen Saunders** as the study team leader/liaison, with group members to be named from the **Department of Interior** (someone knowledgeable about tribal water rights --- Shannon Cunniff to do), and **Quebec** (when a study team member is identified). The legal advisors to the Commission --- **Michael Veschler** and **Jim Chandler** are to be a part of this effort. The US section of the IJC is also to look into the possibility of having a legal presence from the State Department and/or the Department of Justice (**Andy Walsh, DOJ**, confirmed).
- A **first draft** of the working paper is to be delivered to the co-directors by **May 15, 1999 with a final draft no later than May 31.**

- There will be costs for contract work associated with the production of this paper.

TASK #7. Groundwater and Shared Aquifers

- The purpose of this working paper is to estimate withdrawals and consumptive uses from groundwater sources (including shared aquifers if any) in the Great Lakes basin, discuss factors affecting these withdrawals/uses, and forecast projections into the foreseeable future (2020).
- The working group comprises **Gary Paulachok**, USGS, as the study team leader/liaison with members to be drawn from **Ontario** (Irmi Pawlowski), **Quebec, Natural Resources Canada** (Harvey Thorleifson) and elsewhere as needed.
- A **first draft** of the working paper is to be delivered to the co-directors by **May 15** with a **final draft** no later than **May 31**.
- No costs to the Commission are expected for the technical component of this paper.

TASK #8. Policy and Legal Options

- The purpose of this working paper is to propose policy and legal options for consideration by the Commission in formulating its recommendations to governments. This paper integrates the substance of all the previous 7 working papers, and also factors in the views of the public from the Commission-lead hearings and other processes for obtaining public input. It will also draw heavily on the advice of external experts in these and other related areas, with a prime focus on the proposed "policy" workshop to be held in Toronto at the end of March. The study team is also asked to consider innovative initiatives in other regions/countries, such as California's water banking scheme, and assess their applicability to the Great Lakes basin.
- The study team leaders will assume the lead role in writing this paper. The first draft is expected by **May 15, 1999** with the final draft to come no later than **May 31**.
- No cost to the Commission is anticipated for this paper.

TASK #9. Work Plan for Other Boundary and Transboundary Waters and Ground Water of Shared Aquifers

- The purpose of this working paper is to detail a proposed plan of work/study to better understand the implications of consumptive uses, diversions, and removals of water from other boundary waters, waters of transboundary basins, and ground water of shared

aquifers *outside of the Great Lakes basin*. Consultations, to be lead by the Commission, are envisaged for other regions along the border (see item F below) and will provide useful input to this planning exercise.

- The accountable working group members, milestones and possible costs are to be determined by the study team co-directors, in consultation with Commission staff.

TASK #10. The Public's Views

- A synthesis of the views and opinions of the public, including persons representing institutions and agencies, on the reference are to be summarized , and would include those views presented at public hearings, comments received on the Commission's web site, and other pertinent submissions sent to the attention of the Commission.

This task is to done by Commission staff, to be incorporated into the reports.

TASKS #11 & 12. The draft Interim and Final Reports

- These two tasks will be done by the study team under the lead of the co-directors. The draft interim report is to given to the Commission no later than June 10, 1999, and the draft final report no later than October 10, 1999.

B. Education Session

The purpose of this session, to be held in Windsor on February 25-26, is to inform Commissioners, study team members, and IJC staff on a variety of subjects pertinent to the work of the reference.

C. Public Hearings

The Commission is holding hearings in March on the subject matter of the reference at various locations (8) around the Great Lakes basin. The study team is encouraged to attend these meetings in order to hear the views of the public on both sides of the border.

D. Experts Workshop

An experts workshop is planned for Toronto on March 30-31, 1999. The purpose of the workshop is to provide a good understanding of the key policy issues raised by the reference, resulting in an initial "rough" product on policy options to be fed into Task #8. The workshop is to be planned with the Commission, with the Commissioners having the final say on the content

and structure of the workshop, and experts who will take part.

The study team co-directors are to provide a proposal on the workshop to Commissioners for their consideration/approval at the February 25-26 education session in Windsor. Shannon Cunniff, Frank Quinn, Owen Saunders and Tony Clarke have been tasked to suggest initial ideas. Key questions to be posed to the experts and a list of candidates from study team members are to be collated by the co-directors by the close of the day February 19.

E. Study Team Meetings

The study team agreed in Washington on February 11-12 to a schedule of meetings as follows:

- February 25-26, Windsor, around the margin of the education session
- April 1, Toronto, immediately following the March 30-31 experts workshop
- April 15, Washington, on the occasion of the IJC's semi-annual meeting
- Mid May, Montreal, on the occasion of the meeting of the Great Lakes Commission.

F. Consultations outside of the Great Lakes Basin

The Commission intends to consult on the preparation of a plan to better understand the implications of consumption, diversion, and removals of water, including bulk removals for export, from other boundary waters, transboundary basins, and shared aquifers. This proposed plan (Task #9) arises from a request by governments in the reference and is to be included in the Commission's final report. The details of these consultations are to be determined by the Commission, in consultation with the study team. These sessions are likely to be held during the summer months, probably in association with other Commission events planned along the border region. A schedule for these consultations should be developed by the end of May.

G. Reports

The study team will not be issuing its own reports, but will be providing draft reports to the Commission which will then be turned into Commission reports to the governments.

- The draft interim report from the study team to the Commission is to be delivered no later than **June 10, 1999**, in order for the Commission to be able to transmit its report to the governments by **August 10, 1999**.
- The draft final report from the study team to the Commission is to be delivered no later than **October 10, 1999**, in order for the Commission to be able to transmit its final report to governments by **February 10, 2000**.

Appendix 1
Guidance to Working Group Members

Task # 1

The Setting

The purpose of this Working Paper will be define the context within which the Reference is taking place, and ultimately to provide the substance of the introduction to the Commission's Interim Report. As such, the Task can best be described by laying out a preliminary outline of what the Working Paper might cover. This outline will, of course, be modified by the Working Group as it proceeds with its work.

- Scope of the Interim Report
 - initially limited to the Great Lakes-St. Lawrence System (with an indication of how it will be expanded for the final report); a description of the basin/region, including such aspects as demographics and evolving industrial structure;
 - emphasis on removals, updates on diversions, consumptive use, and climate change
- Renewed Interest in both Countries
 - Nova incident
 - related incidents
- Kinds and Scales of Projects
 - bulk hauling by ship and truck
 - diversions
(Note: this will provide a brief overview only, with the more detailed information to be included in the Working Paper on Diversions)
- From Regional to Global Proportions
 - climate warming
 - exotic species
 - trends in water use
 - international trade agreements
 - global market potential
 - marine effects
 - cumulative impacts
(Note: brief overview only; detail to be included in Working Papers dealing with climate change, consumptive use and cumulative impacts)
- Shared Resources, Shared Decisions
 - provinces/states, first nations/tribes, and federal jurisdictions
(Note: brief overview only; with more detailed information to be included in the Working Paper dealing with legal implications)
- Past, present and future
 - trend is not destiny
 - supply and demand orientation

Task # 2

Consumptive Use

A consumptive use refers to evaporation during use, transpiration from irrigated crops, leakage, incorporation into manufactured products, or similar occurrences during use. It should be noted that total consumptive use is only in the order of 10 % of total withdrawals, with the remainder returned to the lakes or their tributaries, usually in the form of wastewater. It is only the consumed portion which impacts on lake levels and outflows, by reducing the net supply of water to the lakes. The estimated or projected reduction in net basin supply can be routed through the system with existing models to determine the impact on levels and flows.

Present consumptive uses can be estimated from available data in the two countries, for example from regular surveys conducted by the U.S. Geological Survey and Environment Canada. They can also be verified and possibly made more current with water use licensing information available through, for example, the Province of Ontario and the Great Lakes States. It is important for all the analysts to work closely together to ensure a single and reliable estimate of current use, rather than "competing" estimates, as was the case in the earlier reference. It is also important to explain why assumptions/projections of consumptive uses done in the 1980's are so much out-of-line with the findings of the 1990's. The projections entail using data from key industrial and other water uses sectors.

Based on current use estimates, and forecasts of population, industrial structure and a variety of other variables, it will be possible to provide a most likely projection of consumptive uses into the foreseeable future, say the year 2020. It is expected that this Working Paper will also provide high and low projections, based on a range of assumptions about the future.

Early indications are that the projections made in the earlier Reference (circa 1980) may have significantly overestimated the growth in consumptive use since that time. This was due to some very fundamental shifts in the structure of the North American economy, which are still only partially understood. An important element of this Working Paper will, therefore, be an examination of the previous assumptions to determine where they were correct and where they went wrong. It is expected that this improved understanding of the evolving socio-economic and water management context will lead to improved projections in the current Reference.

Task # 3

Diversions and Other Bulk Removals

It is important to frame this topic within the context of what is occurring elsewhere in the world. The analysis of bulk water exports/out-of-basin transfers in terms of their socio-economic and environmental impacts should be as global as possible, and not restricted to the Great Lakes basin and/or the North American region. Information on costs for such out-of-basin water transfers to regions in need are to be included, where available, including the comparative costs of water from other sources/options, such as for example the current costs (and trends in these costs) for desalinization of water.

Neither the Governments nor the Commission understand the extent to which water is being removed from the Great Lakes basin for domestic or export purposes, in the form of bottled water or beverages. Bottled water would include containers up to, say 20 liters or 5 U.S. gallons capacity; anything larger would be considered bulk removal. Bulk water removal includes the larger volumes of water represented by inter-basin diversions (e.g. canals), as well as transport by tanker ship, truck or pipeline outside the basin of origin. The extent to which these removals are occurring should be estimated.

With respect to inter-basin diversions in the Great Lakes-St. Lawrence Region, the 1985 report can be used as a starting point to describe, document and quantify:

- existing diversions of water into, out of, and between the Lakes
- potential diversions that have been proposed or planned, including those which have been discussed and discarded in the past, but which may still be under consideration in some sectors
- projected future demands for water diversions, and possible changes in diversion rates, sources and destinations.

The projections will necessarily be subjective, although they may be partially quantifiable, and will take into account pressures which may result from climate change or other external factors. The Working Group will coordinate with the Cumulative Effects Working Group in evaluating the relative sensitivity of lake level and flow regimes to diversion withdrawals on a lake-by-lake basis.

Regarding other forms of bulk water removals (e.g. by ship, truck or pipeline), an assessment will be made of current removals (e.g. by truck, or as ballast water in ships), and the probability that other practical proposals will actually arise. To the extent that practical demands might be anticipated, their rationale, timing and magnitude will be estimated. If, in fact, realistic scenarios are anticipated, the Working Group should work with the Cumulative Impacts Group to define the sensitivity of lake level interests to those scenarios.

Understanding the viability of such proposals will require a review of all available literature and other sources of information on past and possible future proposals, and an assessment of the conditions under which such proposals may or may not become feasible. Even in cases where a business case could be made for such removals, the commercial benefits would have to be weighed against environmental and economic disbenefits within the Region (for example, these would directly reduce hydro-power benefits at all facilities downstream of the point of removal, and have ecological impacts throughout the system). This balance will have to be assessed in collaboration with the Cumulative Impacts Working Group.

Finally, it is important to bring a binational perspective to the issue of bulk removals of Great Lakes water, and not just the perspective of the region.

Task # 4

Climate Change

In recent decades, the Great Lakes Region has, on the whole, experienced higher precipitation and net supply levels than the historical norm. Generally, however, supplies have been within the boundaries that one would expect in the normal cyclical pattern of highs and lows experienced over the past century. However, there is now a commonly held view among many climatologists that over the next century or two, human-induced climate warming due to the so-called "greenhouse effect" may result in basin water supplies even lower than the boundaries experienced over the past 10,000 years.

Implications for the Great Lakes could be both complex and profound. There would, of course, be a direct reduction in net basin supplies, and a concurrent impact on levels and flows. The analytical portion of this Working Paper will therefore focus primarily on identifying and describing this direct influence. The starting point for the analysis will be scenarios of mean average global temperature rise as estimated by the Intergovernmental Panel on Climate Change (IPCC), and transposed to the Great Lakes Basin. If possible, this influence will be quantified in terms of reduced net basin supplies, so that it can be combined with other factors potentially influencing net supplies as part of the risk assessment described under Task # 5. Climate change could also impact levels indirectly by affecting rates of consumptive use, for example with respect to space heating and cooling, and patterns of agricultural activity. That aspect will hopefully be covered off to some extent in any consumptive use scenarios constructed as part of Task # 2.

Perhaps of equal importance from a policy perspective, climate change impacts at continental and global scales could result in dramatic shifts in external demands for food, water, and products requiring large quantities of water to produce. These aspects will have to be dealt with in a largely speculative and qualitative manner, and closely coordinated with similar discussions in Working Paper # 5 (Cumulative Impacts/Risk Assessment).

Task # 5

Cumulative Impacts/Risk Assessment

This Working Paper will initially bring together analyses related to diversions and other forms of bulk removal, consumptive use, and climate change, and begin to move from what we know to what we do not know, but which we must be prepared to adapt to. It is expected that the Working Papers in each of the individual areas will provide a variety of future scenarios. These scenarios will all be, or hopefully can be translated into impacts on net basin supplies, and can therefore, at least theoretically be integrated in various combinations, based on certain assumptions about societal trends and/or discontinuities.

The analytical portion of this task will consist of combining scenarios of impacts on net basin supplies, and routing the combined impacts through the system using existing models. The output will be hydraulic effects, and at least qualitative assessments of environmental and economic implications (based on information from previous lake level references). It is expected that the straightforward outcome of this analysis will be an indication that, under most plausible scenarios, increasing consumptive use and climate change will reduce net supplies, and place downward pressures on levels and flows. From a policy perspective, this should give the Commission a good indication of the degree to which caution should be exercised with respect to exacerbating the stresses through additional diversions or other forms of removal.

The Work Group is asked to address the question as to whether an analysis could be done to indicate the range of levels of waters in the Great Lakes system at which, in an overall sense, dis-benefits begin to outweigh benefits.

The Paper will also look beyond these reasonably well understood aspects to speculate on any other factors on basin-wide, national, continental or global scales which may arise in the medium or longer terms, and which may exert pressures, either directly on the Great Lakes ecosystem, or indirectly by influencing decision-makers. This part of the Paper will be largely descriptive, but could be analytical to the extent that scenarios can be envisaged. The purpose will be to define the potential importance of anticipatory and adaptive policies, and of not foreclosing too many future options. It is anticipated that it will also help define the importance and nature of ongoing monitoring needs.

Task # 6

Assessment of the Legal Regime

This Working Paper would have three major parts: a review of the domestic regime for water management in the Great Lakes Basin States in the United States, an equivalent review of the domestic regime in Ontario and Quebec, and a review of the international legal context for surface and groundwater management in the Basin. The review of the domestic legal regimes would include a discussion of the applicable federal, state/provincial and first nations/tribal regimes. The Paper would not provide an exhaustive description of the legal regimes, but rather would supply an overview and a discussion of the degree to which the regimes accommodate the principle of sustainability of the resource.

The review of the international legal context would presumably not require a detailed rehearsal of the Boundary Waters Treaty, but it should include a discussion of the intersection of the legal regime created by that Treaty and the implications of international trade law (which in theory would include GATT obligations, but which in practice involves primarily NAFTA implications). It may also include a discussion of customary international law (referring, for example, to such principles as the Helsinki Rules or the ILC articles of non-navigable use of watercourses) to the extent that this may have any residual application with respect to non-boundary waters that affect boundary waters, and to the extent that is helpful in elaborating on treaty obligations.

Because of the inter-connectedness of the hydrology of surface and groundwater, an effort will be made to integrate the legal assessments associated with groundwater and surface water, even though there are significant differences between the legal regimes. The objective will be to assess the degree to which current legal regimes accommodate the principle of sustainability of the resource.

The legal assessment is to include the concept of privatization of water rights, as is allegedly under consideration in some areas of North and Latin America.

The time required for the completion of this Paper will depend to some extent on the availability of material already collected. The description of statutes should be relatively straightforward at the first nations/tribal, state/provincial and federal levels. However, a discussion of subordinate legislation and documents such as guidelines may involve some research, although the cooperation of governments should alleviate this significantly. Similarly, the cooperation of governments will be important in assessing the significance of any practices of municipal authorities. The international law aspects are by now well known, and should not involve significant original research.

Task # 7

Groundwater and Shared Aquifers

This Working Paper can be prepared in two phases. A draft of the first part dealing with the situation in the Great Lakes Basin will have to be completed by the end of April, so that appropriate elements of it can be factored into the draft Interim Report by the end of May. The remainder, dealing with shared aquifers and groundwater more generally in other boundary and transboundary basins will be required about four months later, as input to the Final Report.

In the Great Lakes Basin, the immediate requirement is to develop an understanding of the relationship of groundwater to withdrawals, consumptive use, lake levels and flows, climatic changes, and related quality issues. Work should be divided into three components: (1) direct groundwater discharge to the Great Lakes and connecting channels; (2) indirect groundwater discharge to the Great Lakes and connecting channels via tributary streams; and (3) groundwater withdrawals near the basin periphery where water may be removed from the Basin.

The analytical portion of this work (e.g. estimates of consumptive use, and an indication of the extent to which groundwater may or may not be transported outside the Great Lakes Basin) will have to be coordinated to some extent with the work of the Consumptive Uses and Climate Change Working Groups. It is believed that most of the necessary information is readily available, for example in the USGS and Environment Canada databases and publications, as well as from provincial and state sources. Any projections of future use should be coordinated with overall water use projections.

The report should not describe legal and management regimes, since these aspects are to be covered in the overall Legal Assessment Working Paper (Task #6).

In the second phase, covering areas other than the Great Lakes, the emphasis will be somewhat different. Detailed analyses will not be required, because the output in this case will merely be a work plan for future investigations. Nevertheless, the report should provide a reasonably good description of the nature and extent of shared aquifers and related issues (with examples such as transboundary groundwater issues encountered in the vicinity of the Poplar River Power Plant). Again, there are numerous sources of material to use as a starting point in defining the nature and extent of shared aquifer, such as the 1988 report by the Geological Society of America on the Geology of North America, and numerous reports by the USGS and Natural Resources Canada.

Task # 8

Policy and Legal Options

The Policy and Legal Options Working Paper will be integrative in the sense that it will draw upon all the other Working Papers to develop tentative conclusions for the consideration of the Commission in formulating its recommendations to governments. In particular, it will draw upon the Cumulative Impact/Risk Assessment Paper for conclusions regarding key pressures (e.g. existing and potential demand for water from within and beyond the Great Lakes Basin, future uncertainties posed by climate change, etc.); and the Legal Assessment Paper for conclusions regarding the degree to which legal regimes can accommodate the principle of resource sustainability. It will also draw heavily on the advice of external experts in these and other related areas (through the proposed policy workshop). An assessment will also be done of the applicability of innovative approaches in other regions/countries to water management in the Great Lakes region.

The current policy and legal frameworks will be assessed as to their ability to address existing and potential demand pressures and cumulative risks. Based on this assessment, alternative policy and legal options will be developed, which will provide the groundwork for preliminary policy recommendations. While it is obviously premature to speculate on the exact nature of these options at this time, by way of example they could deal with areas such as:

- options for accords to ensure consultation and/or mutual consent regarding proposed diversions or removals
- options for changes to legal regimes to back up such accords, or other related measures likely to be adopted by governments
- options for promotion of water conservation/demand management measures
- options to ensure that policies and laws are sufficiently anticipatory and adaptive, and at the same time do not unnecessarily foreclose future options
- options regarding ongoing monitoring of trends and regular assessments of emerging factors which may result in significant discontinuities.
- etc.

Although it is not known at this time how many of these issues will be addressed in the Interim Report as opposed to the Final Report, it would nevertheless be helpful if the Working Paper were as comprehensive as possible.

Task #9

The Preparation of a Proposed Plan of Work outside of the Great Lakes Region

Following completion of the draft interim report, work groups will continue with each of the tasks identified earlier into the second phase, but with some changes in emphasis and scope.

In this second phase, work groups will complete such further and more detailed work as may be required to provide a draft final report for the Great Lakes region.

In addition, they will extend their focus beyond the Great Lakes in order to outline what work may be required to better understand the implications of consumption, diversion and removal of water in other boundary waters, transboundary waters and ground water of shared aquifers. Finally, they will draft a plan outlining the phasing of this additional work in the remaining boundary regions.

In extending their scope geographically, work groups will need to take into account what has been learned in their Great Lakes analyses, but also what limitations of data and information exist in other regions along the Canada-United States boundary. The Commission's public consultations outside the Great lakes basin during the summer will likely prove valuable in guiding the planning and scheduling of work to be proposed.

TASKS # 10, 11, 12

**The Public's Views
and
Preparation of the Draft Interim and Final Reports**

As described under Working Papers on page 6.

