



**Recommendations on the Review of the
1987 Canada-United States
Great Lakes Water Quality Agreement (GLWQA)**

Phase III Report

**Prepared for:
The Great Lakes Water Quality Board
of The International Joint Commission**

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TABLE OF CONTENTS

A. Introduction	4
B. Transboundary Agreement Mechanisms in Other Jurisdictions	6
C. New and Emerging Governance Challenges in the Great Lakes Basin	14
D. How a Review of the Great Lakes Water Quality Agreement Could Help Address the New and Emerging Governance Challenges	22
E. How the International Joint Commission and its Institutions Might Help Address New and Emerging Governance Challenges	30

Acknowledgements

The vision that inspires our “New Approach to Water Management” initiative is of a fresh, inclusive bi-national Great Lakes initiative that has the ultimate goal of protecting and improving the ecosystem integrity of the basin for future generations. We see a new approach to water management in the basin that takes a positive, progressive, prevention-oriented, forward-looking view of what is needed to achieve future sustainability. While this vision recognizes that many positive gains have been achieved over the years, it suggests that new approaches, new partnerships and new institutions are needed to ensure protection of our Great Lakes water resources in the future.

We see these new approaches, partnerships and institutions coming together to develop a re-energized, positive, forward-looking Great Lakes agenda that focuses on water but addresses the ecosystem, community and economic sustainability of the region.

Pollution Probe gratefully acknowledges the support of The Joyce Foundation for our work on “A New Approach to Water Management”. Together with support from the International Joint Commission (IJC) Pollution Probe has developed this Phase III report which addresses Great Lakes governance and institutional challenges and provides options to the IJC on how the parties could design a process to conduct a review of the GLWQA.

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Phase III Report

A. INTRODUCTION

PURPOSE OF THE THREE REPORT SERIES: To develop, refine and present insight, advice, and recommendations through the Water Quality Board to the IJC regarding the upcoming review and potential renewal of the 1987 Canada-United States Great Lakes Water Quality Agreement.

The Great Lakes Water Quality Agreement (GLWQA) was first issued in 1972, revised in 1978 and amended by supplement in 1983 and by protocol in 1987. Article X (4) of the GLWQA calls for the Parties (Canada and United States) to conduct a comprehensive review of the Agreement following every third biennial report of the International Joint Commission (IJC). A review of the operations and effectiveness of the Agreement has not been completed since 1987.

The IJC has noted that a review of the Agreement by the Parties is required following the release of its Twelfth Biennial Report scheduled for 2004. There is growing interest among other groups in the Great Lakes region for this review. Consequently, the IJC seeks development of advice to governments regarding the review of the Agreement as well as consideration of its role in this process.

Pollution Probe produced a report, divided into three phases.

Our Phase I report (September 9, 2003) addressed two key questions:

1. Is the Agreement still valid?
2. What role should the IJC play in an Agreement Review?

Phase I concluded that the existing GLWQA has neither the flexibility nor the comprehensiveness of provisions to respond to new pressures being faced by the Great Lakes ecosystem. Pollution Probe recommended that consideration be given to new or revised Articles of Agreement and to the addition of new Annexes that would specifically address the new pressures. A range of options were presented for consideration ranging from a revised GLWQA, to a “Great Lakes Ecosystem Management Agreement”, to a complete remodelling into a “Great Lakes Sustainability Agreement”. In considering the scope of an Agreement review, the Phase II report recommended that the review of the Agreement is necessary; it should be comprehensive and it should be reviewed for its relevance to today’s issues and needs. The report suggested the IJC should encourage the parties to undertake a comprehensive review of the GLWQA and offer to assist through a Commission-supported stakeholder involvement process.

Our Phase II report (October 14, 2003) focused on the range of views regarding the efficacy of specific components of the current Agreement and its Annexes and specific changes that could be made. It addressed the following questions:

1. What essential components of the Agreement must be retained?
2. What new components should be added?
3. What improvements should be made to measure, monitor and report on programs and progress?

4. How should the Parties consult with Great Lakes constituencies to solicit advice regarding the adequacy of the Agreement and specific changes that may be required? What is the role for the Commission regarding stakeholder consultation?

The Phase II report expanded on the Phase I report by walking through each section, Article and Annex of the GLWQA, providing recommendations on what specific components of the Agreement should be retained, added and revised. Essentially, the report concluded that there were many aspects of the GLWQA that are decades out of date and while there are still many elements of the Agreement that are relevant and important, overall there is need for a new vision, and a new agreement that would reflect that vision.

This third and final Phase III report addresses in more detail the governance, institutional arrangements, programs and policy challenges in the Great Lakes Basin. Its objective is to provide the Commission with options it could consider and provide to the Parties, on how to design a process to conduct a review of the GLWQA.. The Phase III report explores:

1. Transboundary agreement mechanisms in other jurisdictions.
2. New and emerging governance challenges in the Great Lakes Basin.
3. How a review of the Great Lakes Water Quality Agreement would help address the new and emerging governance challenges.
4. How the International Joint Commission and its institutions might help address the new and emerging governance challenges.

B. TRANSBOUNDARY AGREEMENT MECHANISMS IN OTHER JURISDICTIONS

As an interjurisdictional freshwater basin agreement, the Canada-U.S. Great Lakes Water Quality Agreement is not unique. In its *Atlas of International Freshwater Agreements*, covering some 263 international basins, UNEP describes hundreds of extant international and subnational agreements addressing watersheds and freshwater basins on all continents except Antarctica.¹ Since 1948, approximately 295 international water agreements have been negotiated and signed. Most of these deal with the transboundary flows of rivers rather than the sharing of lake basins. Many of them are mainly concerned with access to or sharing of water resources rather than environmental management. Most have been developed in physical situations and under socio-economic circumstances very different from the Great Lakes – St Lawrence Basin. Except for agreements among some European jurisdictions and in Australia and in other parts of North America, few of the agreements reflect population and industrial concentrations similar to the Great Lakes region or have political and institutional structures comparable to the Great lakes region.

In many respects, the structure of the Great Lakes Water Quality Agreement, and its achievements over the past thirty years, has served as a model for jurisdictions in other water basins. This was demonstrated by discussions at the 2002 international Managing Shared Waters conference. Nevertheless, if the revision of the Great Lakes Agreement is mandated, it is useful to consider the successful and unsuccessful elements of other international agreements as well as the nature of their review processes. This could advise the process leading to a renewed Great Lakes agreement.

EUROPE

The European community has had a long and complex history of international water agreements dominated by discussions, disputes and negotiations involving the continent's two major watercourses, the Rhine and Danube Rivers. The Rhine basin includes nine western European countries while the Danube impacts on eighteen states in both eastern and western Europe. The following are brief summaries of the main elements of recently negotiated international environmental agreements for these two river systems which show some of the similarities and differences between these agreements and the Great Lakes Water Quality Agreement.

The Rhine River

The Rhine River, which flows through some of Europe's biggest industrial districts, has long suffered from severe pollution, including chemical spills that have caused severe fish kills. In recent years several European governments have made special efforts to clean up and protect the Rhine. Negotiation of an environmental agreement was completed in January 1998 and a new International Convention on the Protection of the Rhine was signed in April 1999 by Switzerland, France, Germany, Luxembourg, and the Netherlands. The Convention came into force in 2000.

The new agreement has ambitious environmental protection goals including habitat protection along the intensely developed river banks, flood management and reintroduction of salmon. It also gives some environmental groups the right to observe progress by the Parties to the Convention. Extended powers of oversight and enforcement allow an established international commission to ensure that signatory countries meet their commitments. Having enforcement as well as oversight responsibility illustrates a key difference of the roles of the Rhine Commission in comparison to the roles of the IJC in the Great Lakes region. The IJC may recommend actions

¹ UNEP, 2002. *Atlas of International Freshwater Agreements*, 184p.

by the Parties and may take measures to influence these actions but, ultimately, it is the Great Lakes' political jurisdictions that have responsibility for self enforcement and for environmental regulation. The Rhine Commission may take measures to correct inactions by member states.

The entry into force of the new Convention repeals the April 1963 Agreement concerning the International Commission for the Protection of the Rhine against Pollution, the Additional Agreement of 1976 to the Agreement of April 1963 concerning the International Commission for the Protection of the Rhine against Pollution and the 1976 Convention for the protection of the Rhine against Chemical Pollution. That is, the new Convention is a complete replacement of previous agreements, not just a review and amendment, and it was developed through government-to-government discussions.

Formally², the aims of the Convention are as follows:

- sustainable development of the Rhine ecosystem through:
 - maintaining and improving the quality of the Rhine's waters, and its natural function;
 - protecting species diversity;
 - reducing contamination;
 - conserving and improving natural habitats for wild fauna and flora;
 - ensuring environmentally sound management of water resources;
 - taking ecological requirements into account when developing the waterway.
- production of drinking water;
- improvement of sediment quality;
- flood protection;
- coordination with measures to protect the North Sea.

The riparian States of the Rhine basin therefore undertake to:

- cooperate in taking actions to protect the Rhine;
- implement programmes and studies concerning the river;
- identify the causes of and parties responsible for pollution;
- ensure that technical measures liable to have a serious effect on the ecosystem, as well as discharges of waste water and hazardous substances are subject to prior authorisation;
- reduce the risks of environmental accidents.

The International Commission for the Protection of the Rhine (ICPR) is made up of representatives of the signatory States. It is chaired by those States in turn. It takes decisions unanimously and communicates them to the Parties. The tasks of the ICPR are as follows:

- prepare studies and programmes on the Rhine ecosystem;
- make proposals for actions;
- evaluate the effectiveness of the actions carried out;
- coordinate warnings and alerts;
- inform the public as to the state of the Rhine and the results of its work;

² <http://europa.eu.int/scadplus/leg/en/lvb/l28115.htm>

The ICPR prepares an annual report and submits it to the Parties. Conversely, the Parties report to the ICPR on the legislative, regulatory and other measures they have taken with a view to implementing the Convention and the results of those measures. Permanent ICPR working groups on water quality, ecology and emissions are composed of government officials and experts.

With respect to stakeholder consultation, the ICPR may exchange information with NGO's insofar as their fields of interest or activities are relevant. The ICPR will consult with organizations before discussing decisions liable to have an important impact on them and will inform them as soon as such decisions have been taken. Specialists representing recognized NGO's may be invited to meetings of the ICPR.

There is no provision in the Convention for a regular or periodic review of the agreement but Parties may withdraw from the Convention three years after it has come into force.

Danube River

The Danube River is critical for the well-being of about 83 million people living in its 800,000 km² basin, covering 18 European countries stretching from Germany to the Black Sea. However, a common environmental protection policy at the multilateral level was for a long time inhibited by political barriers. With the huge political changes in Europe in 1989 it was possible to develop an international water resources protection strategy in the Danube catchment area. In 1994, the *Danube River Protection Convention (DRPC)* was signed to encourage Parties to intensify water management cooperation. Entry into force of the Convention in 1998 created a legal framework for cooperation of the Parties to assure environmental protection of ground and surface waters and aquatic ecosystems in the Danube River Basin.

The main bodies established under the Danube River Protection Convention are: Conference of the Parties; International Commission for the Protection of the Danube River (ICPDR) and its permanent secretariat; Expert Groups; Ad-Hoc Groups, and a supporting body - a Program Management Task Force.

The Conference of the Parties is the highest level body under the Convention (DRPC). Its main task is to establish the overall policy for the work under the Convention and will convene every few years. There is no formal provision for regular review of the Convention but the regularly scheduled meetings of the Conference of the Parties allow for some modification or adaptation of the Convention or its institutions as needs and circumstances change. For example, the organisation of groups under the Convention has undergone considerable growth and evolution in its first few years of existence. By 2002 there were six expert groups (and many subgroups of varying duration) dealing with technical issues and one ad-hoc expert group addressing administrative matters arising from the implementation of the DRPC.

To support the implementation of the targets and regulations of the DRPC, the International Commission for the Protection of the Danube River (ICPDR) was established in 1999. The ICPDR is the main decision making body under the Convention. It meets either in Plenary or as a Steering Group. A key task for the Plenary is to approve the annual work programme and budget, while the Steering Group provides the management and co-ordination of activities under the Convention. A permanent Secretariat supports the ICPDR and its subsidiary bodies. The Secretariat is also the focal point for information about the implementation of the Convention.³

³ www.icpdr.org

The expert and ad hoc groups reporting through the Secretariat to the ICPDR are composed of government officials representing the various member states. However, observer status may be conferred on non-governmental organisations. There is a formal process for obtaining observer status and various criteria must be satisfied. For example, organisations within the Danube River Basin that are strongly interested or even engaged in Danube protection and water management, and share the goals and even the implementation of the DRPC through their specific activities, are considered the most important partners. Organisations outside the Danube River Basin that are strongly interested and are ready to promote and even support the development under the DRPC, and particularly those organisations familiar with the tasks of large River Commissions are also considered valued observers.

The Secretariat invites the admitted Observers to take part in particular meetings and to perform any other exchange of experience and information in oral or written form via the Secretariat. By this invitation the Observer is informed in advance about potential agenda items, which are to be dealt with exclusively amongst the delegations (Contracting Parties), such as internal administrative issues. Some current Observers include:

- Black Sea Protection Commission;
- Danube Commission (for inland navigation) (CD);
- Danube Environmental Forum (DEF);
- Regional Environmental Center for Central and Eastern Europe (REC);
- World Wide Fund for Nature (WWF International);
- International Working Association of Water Works in the Danube Basin (IAWD);
- International Working Association for Danubian Water Research (IAD).

The Program Management Task Force (PMTF) is a special supporting body reporting to the ICPDR. The PMTF supports the practical implementation of action programmes, promotes priority environmental investments and helps to secure technical assistance for the Danube countries. Members of the PMTF are representatives of the Parties, international financing institutions and donors, and NGO's.

An important aspect of the Danube River program is a strong emphasis on active encouragement of public and NGO participation throughout the planning process. It is hoped that this proactive stakeholder participation, going well beyond only government-to-government discussions, may help prevent future disputes both within countries and among the Parties to the Convention.

SOUTH EAST ASIA

Mekong River

The Mekong River Commission (MRC) is an intergovernmental body created in 1995 by an agreement between the governments of Cambodia, Lao PDR, Thailand and Viet Nam.⁴ China and Myanmar (Burma) also occupy parts of the upper Mekong River basin. They are not signatories to the 1995 agreement but they have a “dialogue” relationship with the Commission. This Commission bears little resemblance to the IJC and has far more operating and quasi-enforcement responsibilities than the IJC has with respect to the Great Lakes. However, the MRC is an interesting example of an international arrangement whereby implementation activities are divided between a central agency (the Commission) and member states.

⁴ www.mrcmekong.org

The Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin came about as the four countries saw a common interest in jointly managing their shared natural resources. The Agreement set a new mandate for the organisation "to cooperate in all fields of sustainable development, utilisation, management and conservation of the water and related resources of the Mekong River Basin". The agreement brought a change of identity for the organisation previously known as the Mekong Committee, which had been established in 1957 as the Committee for Coordination of Investigations of the Lower Mekong Basin. The new Agreement is neither a complete replacement of the previous arrangement nor a formally managed review of the previous arrangement. The discussions and negotiations leading to the new Agreement involved both the member countries and international donor organizations.



(Map from “The Economist”)⁵

Since the 1995 Agreement, the MRC has launched a process to ensure "reasonable and equitable use" of the Mekong River System, through a participatory process with National Mekong Committees in each country to develop rules and procedures for water utilisation. The MRC monitors the quality of water resources, and is supporting a joint basin-wide planning process with the four countries called the Basin Development Plan. The MRC is also involved in fisheries

⁵ www.economist.com

management, promotion of safe navigation, agricultural development, flood mitigation and hydropower planning within an overall framework of renewable resources management. The National Mekong Committees coordinate MRC programmes at the national level and provide links between the MRC Secretariat and the national ministries and line agencies. The principal implementing agencies of the MRC programmes and projects are the line agencies of the riparian countries in the Lower Mekong Basin.

The MRC consists of three permanent bodies: the Council, the Joint Committee (JC) and the Secretariat. The Council, comprising one member at Ministerial and Cabinet level from each MRC member country, convenes annually and has overall governance of the Mekong River Commission. The JC, also comprising one member from each member country at Head of Department level or higher, convenes at least two times a year. This body functions as a board of management. The Secretariat, which provides technical and administrative services to the JC and the Council, is under the direction of a Chief Executive Officer (CEO) appointed by the Council. The Secretariat is located in Phnom Penh, Cambodia. The Assistant CEO is of the same nationality as the JC Chair and serves a one-year term. The MRC is funded by contributions from the four member countries and from aid donors. Formal consultation with the donor community is carried out through an annual Donor Consultative Group meeting.

There are no formal provisions for review of the Agreement. However, the regular meetings of the governing council and interaction with the donor community allow for informal review of changing needs and circumstances. For example, currently there is much controversy about dam developments on the Mekong and its major tributaries by both the member countries and the non-members, China and Myanmar. Such plans, promising improved irrigation of agricultural lands, flood control and hydro-electric power (for export) are also raising serious concerns about erosion, habitat destruction, fisheries depletion, and other economic and environmental issues. In addition to the difficulties of international cooperation, this is also placing the MRC in conflict, with its dual roles of resource development coordination and environmental protection.

MRC members are slowly drawing up pacts on the exploitation of the Mekong and its tributaries. In 2001 they agreed to exchange data on water flows. They have pledged to notify one another about large projects and implement a system to monitor such declarations. Next they plan to fix the minimum amount of water each country must discharge downstream and, by 2005, establish rules on water quality. The Agreement is, therefore, a dynamic instrument which facilitates change and progress.

AUSTRALIA

Australian examples of transboundary freshwater agreements do not include international elements. However, they do involve interjurisdictional issues, and the manner in which these issues have been addressed may provide useful lessons for considering possible future directions for the Great Lakes Water Quality Agreement. The physical circumstances of the Australian examples discussed below are very different in scope and character from conditions of the Great Lakes region. However, political and socio-economic characteristics of the Australian settings are comparable. Also, approaches taken in Australia to environmental issues, and to the notion of sustainability, parallel attitudes in North America.

Many of Australia's river basins have significant salinity, land degradation and environmental flow problems. Integrated Catchment Management (ICM) is the most widely used approach to address these problems and its purpose in the Australian context is to manage rivers and

waterways on an ecosystem or catchment basis. All States have some form of “integrated catchment management” or watershed planning in place focused primarily on water supply and water quantity issues. Watershed planning falls under the direction of coordinating bodies comprised of stakeholders – government agencies, public appointees, industry and environmental groups. Catchment Management Authorities/Boards/Committees are charged with full cost recovery on all of their initiatives. This is achieved through a variety of funding sources and arrangements, but in particular through water use charges or surcharges/taxes on water-based licences and uses. Watershed planning is legislated under state and federal (commonwealth) acts and unifying policies. The Commonwealth government and the State of Victoria have actually established local Catchment Management Authorities that replace other local agencies, thus providing a “one window” agency to implement water management actions.⁶

However, Australia’s first decade of implementing ICM programs has demonstrated that in order to deliver environmental improvements, policy frameworks and interjurisdictional arrangements that provide the foundation for the programs, should have:

- clear and specific environmental improvement targets;
- equally led, unbiased, sufficiently funded and consistent implementation processes;
- holistic, broad participation processes involving governments, communities, industry, environmental groups and scientists.

Murray-Darling Basin Initiative⁷

The Murray-Darling River system is the largest catchment area in Australia, covering an area of over one million square kilometres and extending from the headwaters of the Darling River in southern Queensland, through the States of New South Wales and Victoria, and entering the Southern Ocean in the State of South Australia. Almost the entire system runs through rural, pastoral and agricultural areas. The Murray-Darling Basin Initiative is a partnership between the commonwealth and state governments and the community which has been established to give effect to the 1992 Murray-Darling Basin Agreement. The purpose of this Agreement is ‘to promote and co-ordinate effective planning and management for the equitable, efficient and sustainable use of the water, land and other environmental resources of the Murray-Darling Basin’.

The Murray-Darling Agreement was a recognition that no one government or group of people were able to deal with the Basin’s emerging natural resource management problems and that the existing management arrangements were not able to cope with them. The involvement of the community is recognition of the fact that the task was not one that governments could fulfil on their own. The Agreement replaced the River Murray Waters Agreement which had been in place since 1915. The Agreement was initially signed by the governments of the Commonwealth, New South Wales, Victoria, and South Australia in 1987, and revised in 1992. Queensland became a signatory in 1996, with the Australian Capital Territory being added in 1998. Queensland’s late acceptance of the Agreement delayed significant progress in the early stages. The Agreement established new institutions at the political, bureaucratic and community levels to underpin its implementation, i.e.

⁶ Beak International, 2001. A review of watershed management experience. Research Paper #11 in Managing the Environment, Ontario Ministry of the Environment, 43p.

⁷ www.mdbc.gov.au

- Murray-Darling Basin Ministerial Council;
- Murray-Darling Basin Commission; and
- Community Advisory Committee.

The Agreement sets out the objectives, functions and composition of the new institutions and the procedures to be followed for natural resource management, water distribution, asset management and financial disbursements. For example, the Commission is the executive arm of the Ministerial Council which advises the Council and carries out its decisions. The Community Advisory Committee provides the Ministerial Council with advice and provides a two-way communication channel between the Council and the community.

According to provisions of the Agreement, the Commission must review the Agreement “from time to time” and “may recommend any amendments it thinks necessary or desirable to the Ministerial Council”. No details are provided with respect to the form of the review process.

Healthy Waterways Program, South East Queensland⁸

South East Queensland is one of the most rapidly growing regions in Australia. Brisbane, the Queensland state capital and main commercial centre, is the focus of the region. With a population exceeding 1.5 million, it is a major urban area with all the attendant difficulties of suburban sprawl and pollution from transportation and industrial sources. In the early 1990's it became apparent that population increases over the next 30 years had the potential to further and more seriously impact on the health of the areas waterways and catchments. In response, local councils throughout the region, with the help of the State and Commonwealth Governments, worked with community, research organisations, traditional owners and industry to develop a coordinated, regional strategy to protect these resources for the next millennium. In doing so it was recognised that the health of South East Queensland's waterways was fundamental to the region's future social, economic and environmental well being. The vision incorporated, in the regional strategy, is: South East Queensland's catchments and waterways will, by 2020, be healthy living ecosystems supporting the livelihoods and lifestyles of people in South East Queensland, and will be managed through collaboration between community, government and industry.

The Strategy is a collation of initiatives from the Federal government, 4 State government departments, 19 local councils, and 30 non-governmental groups representing conservation, community, indigenous, agricultural and industry sectors. A key part of the strategy is a Healthy Waterways Campaign - an awareness and community education program which is proving to be very successful in raising public consciousness and fostering broad based cooperation.

The Queensland Healthy Waterways initiative is proving to be one of the more effective integrated catchment management programs in Australia with its clearly defined environmental improvement goals, its emphasis on broad multistakeholder participation in all stages, and a dynamic multistakeholder consultation process for review and update of the Strategy.

⁸ www.healthywaterways.env.qld.gov.au

C. NEW AND EMERGING GOVERNANCE AND MANAGEMENT CHALLENGES IN THE GREAT LAKES BASIN

I. NEW ECOLOGICAL IMPERATIVES THAT PRESENT KNOWLEDGE, MANAGEMENT AND INSTITUTIONAL CHALLENGES

Over the past decade new threats to the integrity of the Great Lakes Basin Ecosystem have been identified. Experts indicate that each of these threats could have major impacts on the ecological integrity of the Basin. Taken collectively they represent unknown and massive ecological change. These threats, listed below, not only constitute an ecological challenge but also a governance challenge because decision making authorities generally have not been sufficiently mobilized, aligned and primed to make the decisions to resolve these ecological threats.

As has been pointed out previously in this report series, the Great Lakes Water Quality Agreement has focused on water quality, most specifically water chemistry. Many of the emerging issues, listed below, are broader ecosystem issues and institutional response has been mixed and not well coordinated. For example in the United States the Coast Guard has the lead on invasive species, local governments deal with land use and urban infrastructure and the states and provinces are working together to address water withdrawal regulation. If the Great Lakes Water Quality Agreement is to be reviewed and revised to take into account these and other new ecological challenges as some have proposed, governance and institutional arrangements should be reviewed.

Some of the emerging ecological challenges include:

- **Invasive Species** - The rapid infestation of the basin ecosystem by non-native species such as the zebra and quagga mussels, ruffe and goby, purple loosestrife, and the most recent maple attacking beetle is a major cause for concern. Their impact on the ecosystem is still fairly uncertain and basic management decisions on ways to deal with these threats have not been made. Challenges lie in responding to the invasive species that are already in the basin and in finding ways to prevent invasions from happening in the first place.
- **Species and Spaces** - To date, the GLWQA and activities under the Agreement have been focused on pollutant reduction. Moving to an ecosystem approach requires equal consideration of all ecosystem components such as habitat and biodiversity. Species, habitat and unique environments at risk in the basin could be covered under a broader, renewed agreement. To the extent that appropriate forms of bilateral governance mechanisms in this area exist, these could be referenced and encouraged to continue their important tasks. Should they need to be strengthened, the renewal of the Agreement could provide an opportunity to identify gaps and weaknesses and methods to resolve them.
- **Land-Use** - The IJC's Science Advisory Board continues to articulate the threats of encroaching urbanization on ecosystem quality. Experts' conclusions on the growth of urban sprawl with or without population growth, the inadequacy of land use controls, inevitable increase in traffic and roads and "car habitat" all point to increased stress to the lakes and the ecosystem as a whole. While it was once thought that the urbanization processes of the following three large coastal megalopolises: the Milwaukee-Chicago-Gary complex, the Detroit-Windsor/Wayne County complex; and the Niagara – Hamilton/Toronto-Port Hope complex were determining the future states of southern Lake Michigan, Lake Erie and Lake Ontario respectively, it is now becoming clear that urbanization processes around inland

centres and their impact on watersheds will impact the lakes in addition to the larger coastal complexes.

- **Climate Change** – The IJC’s Water Quality Board recently completed a review of climate change and its possible impacts on the Great Lakes Basin Ecosystem. They have indicated that aspects of the basin ecosystem will be affected, but the specific nature of the impacts cannot be accurately determined due to lack of adequate research. Given the long term nature of climate change, two priorities have become apparent; more concerted research at an appropriate scale is needed to determine the nature of climate change impacts on the basin ecosystem; and, advice for decision-making authorities on ways to develop appropriate adaptation strategies.

Additional emerging issues that are not directly addressed in the current Agreement include: an aging urban infrastructure; threats to coastal wetlands; concentrated animal feedlot operations; aquaculture; and Great Lakes-related human health issues.

II. RESEARCH, DATA AND INFORMATION MANAGEMENT REQUIREMENTS

A common dilemma in each of the four large challenges described above (invasive species, species and spaces, land-use and climate change) is the lack of knowledge to mobilize decision making authorities to act. A renewed emphasis on knowledge generation is critical. As in the past, large directed study initiatives that include collecting information and data, interpreting it, and then recommending new and revised policies and programs are one way of addressing this dilemma. However, current models of research networks, and collaborative research partnerships that are directed by a collective research strategy for specific issues, have emerged as effective alternatives to large studies (given the lack of availability of research funds, the wide distribution of expertise and enabling information technology).

To improve governance on issues of this magnitude, it is critical to establish a mechanism to synthesize and integrate knowledge and information. Specific attention could be given to designing institutional processes which integrate information in ways that better serve decision-making authorities. To date, the experience of the Great Lakes management institutions/organizations, and particularly the work of the IJC Boards, have been invaluable in compiling data and information, and advancing timely interpretations of the data to articulate emerging issues. Greater efforts could be made by the Great Lakes community in consolidating and standardizing data and information that will lead to improved knowledge and understanding. Once armed with this understanding, governments also need the necessary authorities to develop public policy options that would use that knowledge to engage appropriate private and public institutions and cause them to act.

III. SPECIFIC GOVERNANCE CHALLENGES

Managing the environment has traditionally been viewed as a responsibility and public trust of governments. While this view still prevails, there is growing recognition of environmental responsibility as a shared mission by industry and by civil society and their governments. There is also an expectation that our binational Great Lakes programs and institutions are working in harmony and that our nations share a common vision and commitment and a coordinated approach towards protection of our magnificent shared resource.

When the parties undertake a review of the Great Lakes Water Quality Agreement, it will be important to explore the new and emerging governance issues facing the Great Lakes Basin and to identify possible modern management structures that may help resolve Great Lakes issues. It

will be important to first acknowledge past accomplishments and understand some of the key influences that have marked our progress to date.

The emergence of several significant shifts and key milestone events has largely influenced the management and protection of the Great Lakes, and progress under the Great Lakes Water Quality Agreement since its inception in 1972. In the context of the times, the 1960's could be characterized as an era of awakening and awareness-raising. Pollution issues and the presence of toxic chemicals were being "discovered" in the environment and environmental groups were being formed. Books like Rachel Carson's *Silent Spring* are now widely recognized to have been prescient. Conservation groups had already been around a long time; however, civil society groups dedicated to purely environmental or pollution control and related resource management issues rose to prominence in the late '60s. One example of the role of non governmental organizations in policy development in Canada is Pollution Probe, which was initially formed from a student movement at the University of Toronto in 1969. Early approaches practised by Pollution Probe and other non-governmental groups might be characterized as advocacy and raising awareness of specific issues through the media, based on solid, science-based understanding.

These groups gave impetus to the evolution and implementation of a variety of new policy approaches and ideas for addressing the challenge and crisis of environmental management. Government ministries of the environment did not exist in the late '60's, and industries did not have the capacity to deal with the environment as an issue. For example, industries did not have environmental protection officers, and research capabilities to understand the impact of pollution based on scientific knowledge was only beginning to be developed. As the public became vocally concerned, government policy was driven by their alarm.

In terms of governance, new agencies and departments of environmental protection were created by federal and state/provincial governments in the Great Lakes Basin in the early 1970s partly in response to the new awareness of environmental issues but also in recognition of the need to take action to start to clean up the problems. Meanwhile, the public was becoming better equipped to exert political pressure and environmental groups continued to proliferate.

By the '70s, the call of "polluter pays" became the predominant environmental principle. World leaders met in Stockholm in 1972, and they held the first discussion at a global level on environmental issues. Catastrophic events were a key driver of environmental policy, and they occurred quite frequently in the '70's. And of course, the Great Lakes Water Quality Agreement came into existence in 1972 as a new binational instrument, primarily aimed at pollution control and elimination, with an emphasis on water chemistry and toxic chemicals.

Application of the "polluter pays" principle resulted in polluters being required to install end-of-pipe controls in response to the new regulatory framework to cut down gross levels of pollution. It was also during this time that government agencies were formed with specific environmental responsibilities arising from legislation, and industries adopted more sophisticated approaches and associations in response to laws and enforcement of environmental regulations.

In 1978, changes to the Great Lakes Water Quality Agreement introduced the "ecosystem concept" and the concept of "virtual elimination" of the discharge of persistent toxic substances in the Great Lakes system.

The decade of the '80s marked the maturing of environmental policy with the dominant principle being "pollution prevention". The idea of avoiding pollution entirely was heavily supported by industry, primarily as an alternative way of managing the high cost of regulatory compliance and liability. In Canada, by the late '80s, the public had put the environment at the top of their priorities, along with the economy, reflecting a decade of ongoing concern. Meanwhile, several innovative concepts and approaches were emerging. For example, Canada pioneered the concept of a multi-stakeholder process and applied it as a consultative mechanism to the management of toxic chemicals. The United States began adopting the use of market mechanisms, such as emissions trading, which were generally not favourably accepted in Canada at that time.

In 1987, a protocol amendment to the Great Lakes Water Quality Agreement strengthened the idea of protecting ecosystem integrity. Also in 1987, the second gathering of world leaders occurred - the World Commission on Environment and Development (WCED), which introduced sustainable development as a policy idea linking the environment, the economy and social goals. During the 90's the linkage of environment and economy as outlined in the 1987 *Our Common Future* report of the WCED was supposed to be developed and implemented as policy, worldwide.

Termed, "sustainable development", this environment economy linkage became the dominant principle during that decade. The public had again put the environment at the top of their list of priorities by 1989. The Canadian government wrote its famous Green Plan, allocating in the order of \$3-billion to protecting the environment. However during the early '90s the performance of the North American economy was suffering, and public perception of the environment as a top issue began to wane and slip on the political agenda.

Globalization of trade became a real driver – and occasionally global trade provisions to ensure fair trade were used to challenge national policies related to environmental protection. In terms of policy, the decision-making process often became an end in itself. There also emerged a widely held view that North America was not competitive or productive, at least partly because of environmental standards based on uncertain science. The further strengthening of multi-stakeholder processes to avoid controversial decision-making became a norm that has carried through to the 21st century.

The emergence and recognition of environmental issues that are global in scope also became a driver of environmental policy and governance. The Rio Summit was convened by world leaders in 1992, primarily to address the emerging issue of climate change. In terms of other events later in the decade, a promising management approach arose as industry began to adopt the science of total quality management and continual improvement to environmental management systems. The ISO 14000 series of environmental management standards was developed in 1997.

While "Sustainable development" had become the dominant principle of the '90s, unfortunately the linkage of environment and the economy as the inherent characteristic of this principle was threatened in almost all Great Lakes jurisdictions when severe budgetary constraints were imposed on environment departments of government in an attempt to control government deficit spending. Once reductions of services and programs were in place, it became very difficult to enforce the environmental regulatory framework as a basic mechanism of policy. These reductions in services and programs have been often driven by reductions in resources caused partly by more fragmentation in decision-making and a general trend towards downloading of responsibilities (without a commensurate transfer of funding) from federal and state/provincial levels of government, to the local or municipal level.

In North America over the last decade, there have been many experiments with new approaches to environmental decision-making and governance. A common characteristic has been an emphasis on public consultation and stakeholder engagement – with a range of types of approaches from “advisory” where stakeholders simply provide advice to authorities for their “take-it or leave it” decision-making; to “consensus-seeking” processes where an important goal is “consensus-seeking” around an outcome that is then reflected in the decision-making of a responsible authority or authorities; to more complete shared responsibility processes where one authority has been given a clear mandate to share ownership of an issue and its successful resolution. One common characteristic that drives most processes is a need to reflect the complexity of our democratic societal interests and concerns in a broad enough context that all may be assured that a reasonable and workable consensus is arrived at.

Sometimes, processes are most successful when they are not initiated by government (e.g. The New Directions Group established by ENGOs and industry, in Canada) or those where government gives a process a clear mandate and fully shares in a commitment to implement the consensus-based outcome. (e.g. The Clean Air Strategic Alliance in Alberta). Measurable and publicly reported results are important. Another characteristic of a successful process is one that has a mandate with a longer term than the lifespan of governments. (e.g. the National Round Table on the Environment and the Economy). Another successful role provided by some Roundtable processes is one where the participants have a “safe-place” or ‘turf-less” place to talk through ideas and issues with a view to sharing information, building a common vision, seeking efficiencies through better coordination of activities amongst responsible authorities, to providing leadership. This kind of process is not itself a “stakeholder” and it is not intended to displace any authority or responsibility of an existing agency or institution.

In general, it seems that good experience is being gained across North America that should help guide the establishment of new decision-making and governance processes in the Great Lakes, but a more detailed analysis of the reasons for their successes and failures would be helpful. There are lots of good experiments going on and lots of good experience is being gained in terms of what it takes to make good responsibility-sharing processes work, but there is less understanding of why some things don’t work so often. The nature of multi-stakeholder processes to impart the illusion of consensus is no longer generally assumed to inevitably result in effective policy. Meanwhile the emergence of public crisis, such as occurred in Walkerton, Ontario, has served to remind governments and the public of the risks of complacency.

The Increasing role in Great Lakes governance of Tribes and First Nations, municipalities, regional watershed councils, conservation authorities (in Ontario), and regional planning and development commissions needs to be recognized and accommodated. Urbanisation pressures and land-use conflicts are assuming greater importance in environmental management in the Great Lakes Basin. Local development planning needs to be coordinated with emerging watershed-based planning and management approaches. The stress on local authorities has been felt but in general, there is increasing recognition of a more important “hands-on” role being played by them in the Great Lakes Basin.

There is a new demand emerging in the public, especially in areas related to public health and safety. People are expecting to be protected in spite of an absence of certainty about a wide range of threats. Based on this and other considerations, the precautionary principle would appear to be an emerging and possibly dominant environmental principle for the current decade. The emergence of the precautionary principle is happening concurrently with a trend towards moving “up the pipe” away from pollution control measures aimed at fixing what is being emitted from

waste discharges, towards pollution prevention and environmental management approaches and all the way through to the other end of “the pipe” with emphasis on product design and product life-cycle management.

In the current decade, the challenge is to identify and develop new policy and governance approaches that are responsive to the shift over the last three decades from “react and cure” to anticipate and prevent”; from fixing problems of toxics and water chemistry to taking a broader more systems (i.e. ecosystems) approach to an even broader sustainable development approach that looks at the whole economic, social and environmental capacity of the Great Lakes Basin. Concurrent with the more recent move towards integrated social and environmental goals, the convergence of environmental and public health has also created a new imperative for effective policies and action and new approaches. Making appropriate policy connections and improving coordination is getting more important. Things are getting complicated and change seems to be happening even more quickly!

In the long run, our shared goal in the Great Lakes Basin should be to seek convergence among societal goals to obtain outcomes that are also very good for the economy while they sustain the environment upon which our regional society and economy depends. Now the task is to assess and use the most appropriate and useful policy tools and governance approaches to achieve this kind of vision and move us towards an era of continuous environmental and economic improvement.

Prior to the 1987 review of the Agreement, Great Lakes United conducted a series of public meetings around the basin concerning the relevance and implementation of the agreement. Great Lakes stakeholders now constitute a large and varied group of individuals and institutions dispersed throughout the basin. For the upcoming review, it is very important that all interested stakeholders have the opportunity to be engaged. Governments at all levels, business and non-governmental organizations should also have the opportunity to share their views and desires. The upcoming review of the Great Lakes Water Quality Agreement should be acknowledged by the parties as an important opportunity to review the operation and effectiveness of the agreement as well as of their performance in meeting the requirements and implementing the commitments contained in the Agreement. It is also an important opportunity to review the currency of the Agreement in the larger, forward looking sustainable development context.

Over the last 30 years the Great Lakes have been recognized internationally as a laboratory for environmental protection and institutional innovation and cooperation and we are well-placed to continue that tradition. In addition to the Parties and the IJC, other organizations have grown and assumed leadership roles for certain niches within the overall Great lakes management framework. There are some key governance challenges which should be addressed with respect to the relationships of Great Lakes interests and organizations in future governance structures.

KEY GOVERNANCE CHALLENGES IN THE GREAT LAKES BASIN INCLUDE:

1. A CONCISE PROBLEM STATEMENT

There are many excellent reports by several agencies that document the challenges we face now and in the foreseeable future in the Great Lakes Basin. There is a sense that we have identified more than enough challenges, and most have been summarized in this three-report series. There is also recognition that we have many successes and that we need to take a positive, forward-

looking approach that deals with the many opportunities and potentials we share. Which are the key agreed-upon “problems” that we face and what can we do to address them? What are the opportunities? A concise problem statement would be very helpful in focussing our attention on the key challenges we have agreed we need to face.

2. A NEW “COLLECTIVE” GREAT LAKES VISION

A strong contemporary “Vision for the Great Lakes Community” which captures the aspirations of Great Lakes citizens and organizations can serve as a fundamental guidepost for a wide range of essential actions to achieve and maintain a vision for the Great Lakes Basin. The vision could be a widely accepted statement which would set clear directions for the community with:

- Operating Principles
- Overarching Goals
- Tangible Objectives [taking into account existing organizations and their actions underway]

The new vision should respond to the need to address the problems identified in the statement referred to above as well as chart a new path that focuses on the opportunities.

The new vision could be helpful while scoping the review of the GLWQA as well as be a guide for the possible revised or renewed Agreement. The new vision should also serve as a guidepost for citizens and other institutions and organizations in the Great Lakes community. Some say that we likely all have an idea of what this new vision should include – it has just never been enunciated and broadly recognized. Some Great Lakes stakeholders, including Pollution Probe, have suggested that a roundtable approach be considered a means to articulate the problem statement and the new Great Lakes vision.

3. THE NEED FOR LEADERSHIP

The Great Lakes community is in need of leadership to regroup the many legitimate but disparate initiatives and activities underway, and provide a new sense of direction and assurance that the development of the various Great Lakes initiatives, programs and communities is on a sustainable track.

The Great Lakes community is a highly developed one with firm institutional roots in two modern democratic societies. Presumably, all existing Great Lakes institutions have a legitimate mandate and are carrying out their mandates in a responsible manner which must be respected. At the same time, due to the complexity of the array of institutional arrangements, overall leadership is needed to guide and ensure citizens and organizations that they are tracking towards achieving the same vision and overall goals. Historically, the two federal governments together with the International Joint Commission in consultation with state and provincial governments provided leadership in Great Lakes matters. Their cooperative leadership is manifested in the various treaties, agreements, and arrangements which continue to support Great Lakes activities. The Great Lakes Water Quality Agreement has been a key instrument for codifying that vision and leadership in the past; it has been our “North Star” in the words of John Mills, of Environment Canada. As we stated in our Phase I and Phase II reports, however, many feel that we need a new vision for the Great Lakes and in terms of leadership they say “the orchestra has no leader”.

4. COMMUNICATIONS

As new governance arrangements are developed, including possible new IJC Board roles and membership, the sharing of objectives and information is imperative both within existing and new institutions as well as with the general public. A clear communication plan by the parties concerning the review and its process would be very helpful. This may be an area where the IJC could offer assistance as well. The principles of openness, transparency and inclusiveness should be a cornerstone of a communications plan. In addition to developing and carrying out a communications plan associated with the review of the current agreement (making sure people know what is happening with the review) as well as consideration of the communications requirements and their performance and effectiveness associated with the Agreement as part of the review (making sure we know if the communications aspects of the Agreement met the needs of the current GLWQA); all Great Lakes institutions and stakeholders should consider the need for a new Article or Annex (or their equivalents) in a possible new agreement.

D. HOW A REVIEW OF THE GREAT LAKES WATER QUALITY AGREEMENT COULD HELP ADDRESS THE NEW AND EMERGING GOVERNANCE CHALLENGES

This section examines how the Great Lakes Water Quality Agreement [GLWQA] could be reviewed and renewed in meeting the challenges outlined in the previous section in terms of:

1. Scope and Orientation of the Agreement
2. Management tools provided in the Agreement
3. Institutional arrangements for the administration of the Agreement
4. Options for a review of the Agreement

1. Scope and Orientation of the Agreement

The GLWQA is the principal institutional instrument by which Canada and the United States coordinate within their respective jurisdictions the implementation of their Great Lakes protection and clean-up programs. In that regard, it is important that the Agreement provides sound rationale and strategic direction to guide the implementation of a wide range of specific actions stipulated in the body of the Agreement.

An Agreement review could include an examination of whether the text in the current Agreement would address the new and emerging governance challenges outlined in Section C of this report. Pollution Probe recommends that the IJC Commissioners and Boards review whether or not the scope of the Agreement should go beyond protecting the water quality of the Great Lakes to encompassing the quality of the air, land and water of the Great Lakes Basin ecosystem and its long term sustainability. This would be consistent with recent policy initiatives which the two federal governments have taken in their respective Great Lakes programs (i.e. the Canada Ontario Agreement and the U.S. Great Lakes Strategy 2002) and could serve to bring the bilateral Agreement up-to-date with current domestic Great Lakes policy.

An ecosystemic scope means explicitly extending the scope of the Agreement beyond an exclusive focus on protecting the water quality of the Great Lakes to encompassing the quality of the air, land and water of the Great Lakes Basin Ecosystem. An ecosystemic orientation is based on recognition that the air, land and waters of the ecosystem operate as an integrated natural system which must be respected and protected against excessive abuse by anthropogenic actions. Also, an ecosystemic orientation would recognize that social development within the Great Lakes Basin needs to be premised on principles of sustainable development in order to be consistent with the long term protection needs of the Great Lakes Basin ecosystem.

If the parties choose to include an ecosystemic or sustainability scope and orientation for the review a carefully worded vision statement for the future of the Great Lakes that responds to the challenges in the problem statement and announces a fresh new vision could be clearly articulated. A vision statement could express the aspirations of the Great Lakes community and also provide the context for the specific actions needed to achieve the vision.

The power of the vision is a function of the legitimacy accorded it by all citizens and institutions of the Great Lakes community. Accordingly how the vision is developed may be just as important as its content. Clearly, a contemporary broad-based participatory mechanism which embraces the values of transparency, accessibility, mutual respect, discussion and contemplation is recommended. One approach is to use a "Great Lakes Roundtable" approach to ensuring that there is an open, inclusive binational forum and process as well as the necessary vision,

coordination and leadership, without the threat of a new competing “institution”. The form and process of a roundtable incorporates all these values and is suggested for consideration. Fortunately some good examples are available from recent experiences in the United States and Canada from which to draw upon in developing such a mechanism. The concept of a roundtable is further explained below, in Option #4.

2. Management Tools Provided in the Agreement

Thirty years ago, the GLWQA [and its subsequent revisions] was a path-breaking environmental accord which introduced the following key management tools to address the serious environmental issues which were threatening the Great Lakes ecosystem. These management tools included:

- Common general and specific water quality objectives and later ecosystem objectives
- Load reduction targets
- The ecosystem concept and approach
- The Virtual Elimination (VE) and zero discharge of persistent organic pollutants (POPs)
- Identification of Areas of Concern (AOCs) and Beneficial Use Impairments
- Remedial Action Plans (RAPs) and Lake-wide Management Plans (LaMPs)

While some very real progress has been made through their contributions, time and change have overtaken these innovations:

- General objectives are taken as rote and specific objectives are outdated
- Load reduction targets for phosphorus were achieved but not yet implemented for other substances
- Virtual Elimination – the Binational Toxics Strategy is still focused on the VE of the original dirty dozen toxic chemicals; it may be missing some important chemicals of concern
- RAPs aimed at cleaning up designated Areas of Concern took a long time to get to the implementation of remedial measures and some appear to be stalled in addressing contaminated sediment, storm-water and waste water infrastructure; many RAPs are still in the earlier problem definition stages.
- LaMPs were to focus on load reduction of priority persistent toxic substances and are still in the process of implementation and the efficacy of their final outcome is still yet to be determined; many LaMPs are still in the problem definition stages.

A review of the Agreement could include an analysis to determine whether these management tools in the current GLWQA are effective and accomplishing their stated purposes and whether it would be able to address the environmental and governance challenges outlined in Section C. Current environmental imperatives facing the lakes are no longer simple pollutant reduction issues. Issues such as invasive species, climate change, contaminated sediment and groundwater, land use, human health are scientifically and institutionally complex, broad in scope, long term and chronic.

A review of the Agreement could include detailed consideration of the following existing management tools:

Specific Water Quality and Ecosystem Objectives were introduced in the ‘72 Agreement. They were established in the 70s and 80s to protect the most sensitive beneficial uses based on the best available defensible scientific information of the time by the Commission’s Science Advisory

[SAB] and Water Quality [WQB] Boards. Under the '72 Agreement they were confined to the open waters of the lakes. In the '78 Agreement they became applicable to rivers and streams in the Basin. No new specific objectives or updated objectives have been established since 1978. The current SAB has recommended that the objectives need to be updated. The 1987 Agreement introduced the concept of Ecosystem Objectives for the lakes and two ecosystem objectives were placed in the Agreement. The concept of ecosystem objectives was to set and use a scientifically defensible ecologically integrated indicator[s] for a specific lake as basis to track its overall ecological health over time. No further ecosystem objectives were developed or adopted under the current Agreement. The review could:

- determine whether water quality objectives are still an effective management mechanism being adopted and implemented by responsible Great Lakes jurisdictions
- based on the above, determine what parameters need to be updated and new parameters added, such as microbiological strains and viruses?
- determine a systematic tracking and reporting system to ensure that objectives are kept current and are being implemented through jurisdictional program;
- determine whether the idea of ecosystem objectives for the lakes is still valid and if so to indicate what steps need to be taken to develop sound ecosystem objectives and how they might be incorporated into the Agreement and implemented.

Virtual Elimination of Persistent Toxic Substances was introduced in the 1978 Agreement as a key operating principle to guide the control of POPs. The principle is based on the realization that the lakes are effectively a sink for POPs used in the basin and elsewhere and given the persistence of the chemicals and the long residence time of lake waters, pervasive contamination of the basin ecosystem was inevitable without extraordinary controls. That rationale is still sound and the VE principle for POPs should be retained.

The Commission spent a decade of effort to get the Parties to implement Annex 12 of the GLWQA in a way which targeted the virtual elimination of priority POPs of the late 80s. Since 1996/97, the Parties have made a concerted effort to eliminate those priority POPs under mechanisms including the Binational Toxics Strategy [BTS]. Progress is publicly reported annually under the BTS. The review of the Agreement could determine how effective the BTS has been and if and how other substances need to be addressed in the strategy. The review could take into account progress being made nationally, continentally and globally on the control of POPs and determine changes needed to update the BTS and specific provisions in Annex 12.

Remedial Action Plans and the Restoration of Impaired Uses – RAPs were one of two new management mechanisms which were introduced in the '87 Agreement. They were originally designed to restore beneficial uses in the Areas of Concern. Much effort has been expended on the development and implementation of RAPs and progress has been made. While comprehensive progress has been made in defining pollution problems and sources, restoration of key sources common to a majority of the AOCs such as severely contaminated sediments and combined sewer overflows has been slow due to lack of funds and institutional complexity and scientific/technical complexity. The review of the Agreement could include an in-depth review of the whole RAP process. Specifically, the review could:

- Determine whether RAPs as a management mechanism are still valid in light of their achievements and failures in restoring beneficial uses to date. For example, are RAPs still a valid management vehicle which can deliver the solution to outstanding defined contaminated sediment and combined sewer overflows (CSO) issues in these AOCs? If not, what kinds of changes to the RAP mechanisms can be devised?

- Determine whether RAPs as a management mechanism can play a useful role in protecting the restoration gains made to date. Are they an effective tool institutionally in the environmental governance of local waters? If not, what adjustments can be made or what other devices are there?
- Determine if RAPs have any capacity to assist in addressing other current GL environmental imperatives such as climate change/adaptation, invasive species, and land use. If so, what are they, how can it be strengthened, etc.

Lake Wide Management Plans, Critical Pollutants and Restoration of Impaired Uses - LaMPs were another new management mechanism introduced in the 87 Agreement. LaMPs were designed to address whole-lake contamination issues caused by the discharges of persistent toxic substances to the lakes through the designation of critical pollutants and the development of reduction schedules for these pollutants. LaMPs are being carried out for Lakes Erie, Ontario, Superior and Michigan. The review of the Agreement could:

- Determine the effectiveness of the LaMPs in advancing the reduction of critical pollutants and whether the structure of LaMPs needs to be adjusted to better facilitate the reduction of toxics. A key point to review is to determine whether the current toxics control regulations in both countries and any planned changes will further or hinder the reduction of the critical pollutants.
- Determine the potential of LaMPs to address the other current priority issues of the lakes such as invasive species in the lakes, climate change adaptation, and contaminated sediments and particularly land-use issues and prevention of urban sprawl.
- With regard to the prevention of urban sprawl, the potential of LaMPs to advance to integrated area planning on a watershed basis needs to be carefully considered. A lake basin composed of tributary river watersheds provides a critical ecologically based unit in which human and natural systems can be better integrated. It has the potential to be a critical planning and development unit for advancing meaningful sustainable development practices for a region. Review of the Agreement needs to evaluate the potential that LaMPs hold for advancing integrated watershed planning and management and redefine LaMPs as a critical vehicle to advance it.

3. Institutional Arrangements for the Administration of the Agreement

Thirty years ago the GLWQA introduced a number of innovative bilateral institutional arrangements, such as:

- A standing role for the International Joint Commission to assist in the implementation of the Agreement
- Standing bilateral institutions – Water Quality and Science Advisory Boards to advise the Commission
- Regular public reporting by the Parties and the Commission as to the progress in implementing the Agreement requirements and the status of the Great Lakes.

Since that time, there appears to have been growing institutional malaise due to:

- The growing institutional complexity of the Great Lakes Basin which reflects a greater differentiation of roles and responsibilities and leads to more, but, uncoordinated disparate activities.
- Wide spread public reporting of all Great Lakes activities leads to information overload and a diffuse sense of priorities.

- Public attention and government focus have turned to global environmental issues, such as climate change, toxics, wastes, long-range transport of atmospheric pollutants (LRTAP), etc.
- Major budget cuts and reallocations of the 1990s (in Canada and the US) have resulted in less in terms of governmental Great Lakes initiatives and slower and/or less implementation of Great Lakes programs.

A review of the institutional arrangements in the administration of the GLWQA would be timely. Such a review could examine the following institutional and governance issues associated with the implementation of the Agreement.

- Structure of the Agreement – the structure of the Agreement has remained unchanged since its inception in 1972. It is essentially a framework agreement within which Parties and jurisdictions use their domestic pollution control programs to achieve specific objectives. The review could examine other forms of agreements or terms as opposed to adjustments to current basic framework form. For example, is it now timely to include very specific substantial objectives and commitments such as clean up of a specific site in a specific place by a specific date? Such commitments might be incorporated into an annex of specific actions to further ‘beef up’ the RAP requirements right in the text of the Agreement.
- Agreement Institutions – The Water Quality Board, Science Advisory Board and the IJC Regional Office have not been formally reviewed by the Parties in consultation with the IJC since 1978. It would be timely to undertake a comprehensive review of these institutions with a view to adjustments in their terms of reference in light of:
 - the vastly increased institutional complexity of the Great Lakes community
 - the changing nature of the environmental issues facing the Great Lakes such as land use, greater emphasis on human health, climate change, invasive species etc.
 - the need for improved systematic monitoring and increased forecasting and prediction
- The review could consider the incorporation of more binational specific operational requirements in direct support of the agreement, particularly a base level of surveillance and monitoring. Consideration could be given to a binational surveillance program managed under the auspices of the IJC but operated by the cooperative efforts of EPA and EC as an operational board such as the levels and flows boards and in cooperation with other federal, state and provincial agencies. Such a board could have specific terms of reference to carry out a base level of surveillance/monitoring and research for the lakes. The review could determine the institutional advantages and disadvantages of this and other types of bilateral structures.
- Stakeholder Involvement - The review could include a specific review of the current state of stakeholder involvement across Agreement activities, i.e. activities led by the Parties and jurisdictions; and, activities led by the IJC and its Boards and committees. Given the changes in the institutional context of the Great Lakes basin, stakeholder involvement in appropriate ways including the review of the Agreement itself as well as in further Agreement implementation is critical. Are there sufficient involvement opportunities? Are the opportunities the appropriate ones? Are the Parties and Commission getting the most of stakeholder involvement? The current Agreement is nearly silent on stakeholder involvement, however given the wide-spread acceptance of stakeholder involvement in a variety of ways across all jurisdictions and with their institutionalization in law, is it not appropriate for the review to consider more specific provisions on public participation/stakeholder involvement?

- Accountability – To strengthen accountability for the implementation of the Agreement a review could consider the stipulation of biennial reports mandated by the Parties and submitted to Parliament and to Congress with annual hearings by the appropriate committees of Congress and Parliament on these reports.

4. Options for a Review Process

A review of the Agreement as discussed above could be as provided for in Article X of the existing agreement. How a review is carried out is likely key to achieving its desired results. In fact, given the overall public awareness and concern of Great Lakes matters, the degree of public involvement in all Great Lakes activities and the large group of engaged leaders from institutions, community groups and stakeholders, the mode of review can become an issue itself if not conducted with the appropriate care given to transparency, broad-based participation and wide ranging consultations. This speaks strongly to the evolution of environmental governance of the Great Lakes community over the past thirty years.

Outlined below are a number of options for a possible review processes. The options are not mutually exclusive and useful components can be combined. However, it will be important for the parties to clearly state the scope and approach for the review before it is initiated.

Option #1: Traditional Approach [as used in the 1976/77 and 1986/87 reviews]

In this approach, the review and negotiation of changes to the Agreement resulting from the review are combined into a single process.

The Parties could each undertake a review of the Agreement separately and consult with their respective state and provincial governments, and other stakeholders and produce a list of specific changes in a new draft text of the Agreement.

The Parties could then meet to combine the two draft review texts into one [essentially a negotiation process]. A bilateral working group could be formed to undertake this task. Once a combined draft text was developed, the Parties could take the text into consultations with stakeholders jointly on the combined text and obtain public comment.

The final text with the benefit of public input could be agreed to by the Parties.

Option #2: Joint Review – Full Stakeholder Involvement and Public Consultation

The Parties could:

- agree to initiate a joint review of the Agreement from the outset
- set up a bilateral working group or groups to review specific parts of the Agreement and recommend specific changes.

The bilateral working groups could be restricted to government agency personnel and experts or could be composed of government agency personnel, stakeholders and individuals from non-government organizations. If the bilateral working groups were restricted to government agencies and experts, the results of their review could be released for public consultations at public workshops etc. in order to obtain public comment before finalization.

If the bilateral working groups were multistakeholder, the results of their review could be posted for public comment.

The Parties would finalize the review and negotiate a draft text agreement which they would take to public consultations prior to finalization.

Option #3: Third Party Involvement

In the review of the 1978 Agreement, two large reviews were carried out by non-governmental groups before the Parties initiated their review of the Agreement. Great Lakes United held a series of public meetings around the Great Lakes Basin and released a report on citizens' views on the '78 Agreement and the activities undertaken to implement it. Also, the National Research Council of the U.S. and the Royal Society of Canada undertook a joint review of the Agreement and Great Lakes issues. Both reports included recommendations for the consideration of the Parties and were effective in scoping the review of the Agreement by the Parties.

The Parties also benefited from a review of the 1978 Agreement by the International Joint Commission which was based on technical reviews undertaken by the Commission's Water Quality and Science Advisory Boards.

Similar to an approach used in the review of the 1987 Agreement, interested third parties could review the Agreement and submit their findings to governments as well as to the public. Such reviews could be carried out at the same time as the government-led reviews; however, in the review of the 1978 Agreement the third party reviews occurred prior to the Parties initiating their review, thus affording the Parties the benefit of considering the results of these third party reviews in structuring the government-led review process.

Another type of expert third party review could be conducted by scientists and scholars who may undertake a detailed review of specific issues, e.g. requirements to better control alien invasive species or requirements for further nutrient controls, etc. This type of review could be undertaken by academic-oriented institutions such as the Royal Society of Canada and the U.S. National Research Council which could be independently funded to conduct such a review.

Another type of review could be more community/citizen-based where reviews could focus on the key Agreement provisions and the activities to implement them in terms of their effectiveness in addressing key environmental problems facing these communities such as contaminated sediments, combined sewage overflows, degraded inshore waters, loss of local habitats, etc. Such a review could be conducted by Great Lakes United which is a large federation of local environmental groups from a wide variety of communities in the Great Lakes Basin. The U.S. Lake Michigan Federation is another organization which could possibly undertake this type of review. Funding for these activities through a coalition of foundations rather than by governments would enhance the overall credibility of these reviews.

Option #4: A Great Lakes Roundtable.

A Great Lakes Roundtable model could be considered to be a form of Third Party Involvement, but with an important difference; the membership of the Roundtable could include a cross-section of scientists, experts, citizens, first nations/tribes, industry, communities, and a range of existing Great Lakes commissions and institutions.

As mentioned earlier, the roundtable approach has been used successfully in a number of cases in North America. In Canada, the National Roundtable on the Environment and Economy has been in operation for over a decade and has been instrumental in raising awareness of the need to address environmental and economic issues in an integrated manner within a sustainable

development framework. In the United States, the National Roundtable in Pollution Prevention has been successful in promoting the spread of pollution prevention practices across a wide front of sectors.

As is discussed in more detail in Section C, the greatest utility of the roundtable device in the context of an Agreement review could be in the development of:

- A concise problem statement
- A new collective vision for the Great Lakes
- The need for leadership
- Communications

The roundtable structure and process may be well suited to bring together a diverse range of individuals with a range of perspectives, information and views and it could provide a neutral “safe place” for discussion that could promote understanding of issues and positions and seek common ground.

Option #5: Parliamentary and Congressional Reviews

Direct involvement of the Canadian Parliament and the U.S Congress might be considered in number of forms.

One option would be to have the Canadian House of Commons, Standing Committee of Environment and Sustainable Development and the appropriate U.S congressional committee holds separate hearings on the 1987 Agreement and its implementation and submits reports to Parliament and Congress respectively. The hearings would serve to gather one form of public input on the agreement which would be factored into the committees’ reports. It would be useful to have the two sets of hearings held in the same general timeframe. The committees could solicit testimony from governments and stakeholders. One disadvantage in Canada is that as a general rule provincial governments do not appear before federal parliamentary committees. This is not the case in the United States where state government representatives often appear before Congressional committees.

In Canada, the Government must publicly respond to the report and recommendations of any parliamentary committee.

A more challenging option would be to have a joint Parliamentary and Congressional committee hold hearings in Ottawa and Washington and around the Great Lakes Basin and submit a joint report to the Congress and Parliament if this is possible.

Parliamentary and Congressional reviews would be particularly useful in gathering a wide range of testimony and information from various groups and organizations as these committees can request or even require specific individuals or organizations to testify. Also it is standard practice for federal government departments to testify at committee hearings. The International Joint Commission could testify as well. In addition, open hearing sessions allows the general public and other interested organizations to testify and provide their views to the committees.

E. HOW THE INTERNATIONAL JOINT COMMISSION AND ITS INSTITUTIONS MIGHT HELP ADDRESS NEW AND EMERGING GOVERNANCE CHALLENGES

Article VII of the Great Lakes Water Quality Agreement gives the IJC clear authority to report and provide assistance to the Parties. It has a mandate to provide advice on “how” a review of the GLWQA might be undertaken.

In the Phase I and Phase II components of this study, we concluded that the IJC could take a prominent role in any future review of the GLWQA and that the IJC could make comprehensive recommendations to the Parties regarding the review and the process by which it is carried out. The response by the IJC to these findings is encouraging. The Commission sent a signal to the Parties and to the public following the IJC September 2003 Biennial meeting in Ann Arbor, Michigan in a Great Lakes Declaration⁹ dated September 20, 2003. The IJC advised that it “will request a special mandate from the governments that defines an appropriate and substantial role for the Commission in the review of the Great Lakes Water Quality Agreement”.

The IJC Declaration also commits to “Engage the public in active dialogue and discussion, making the advice it gives to government regarding the review of GLWQA transparent and open to input from all who care about the health of the Great Lakes basin ecosystem; and facilitate public participation in the review process by involving stakeholder organizations such as environmental and conservation groups, industry and trade associations and riparian interests through a variety of mechanisms.” The IJC has made an offer of service to the parties, and suggested a role in stakeholder engagement.

In past reviews, the Parties did not utilize the Commission in an active way in the review process even though the Commission is uniquely equipped with formal powers and an expert capacity to play a significant contributing role in the review process. The Parties could take advantage of the knowledge and experience of the Commission and seek strategic advice on the nature and content of the review process.

Development of the review process will need to address the new challenges posed by the environmental priorities described in the Phase I and Phase II reports and the governance issues outlined in earlier sections of this Phase III document. In addition, development of the review process should consider the specific role of the IJC in the actual review as well as the IJC’s later oversight role with respect to any newly structured Agreement. Such analysis should include consideration of whether the national and international administrative and institutional structures under the current GLWQA will be sufficient to deal with the new governance issues and other challenges. With regard to the IJC, the following structures could be analysed:

- U.S. and Canadian IJC section offices
- IJC Great Lakes Regional Office
- WQB, SAB, Council of Great Lakes Research Managers, International Air Quality Advisory Board

It should be noted that the WQB, SAB and Regional Office have been effectively unchanged in their terms of reference since 1978. At the same time, the context in which they operate has changed significantly. A comprehensive review of the Agreement could include a comprehensive

⁹ Great Lakes Declaration, International Joint Commission, September 20, 2003.

review of the institutions in light of today's institutional conditions and ecological imperatives. Examination could review function, composition, terms of reference, support to and management of the Boards and Regional Office. For example, membership of IJC boards and committees could benefit from a broader constituency to reflect some of the new governance challenges noted above in Section C.

The following general roles for the IJC in a review of the GLWQA were offered for consideration in our October 14, 2003 Phase II report:

- **Participate and lead key bilateral working groups.** For example, the Parties could request the IJC to lead a bilateral working group to develop an appropriate vision for the Agreement which would become the draft Preamble to the new Agreement. Also, the SAB could more specifically review Annex 1 objectives and this should be brought into the review. The Council of Great Lakes Research Managers has recommended a review of Annex 17 Research and Development and this could be done in conjunction with IAGLR and brought into the review.
- **Convene special experts' workshops.** The IJC could be helpful in convening expert groups to address key components such as "ecosystem approach", "principles for integrated watershed management", "principles for sustainability in urban development" etc. throughout the review process.
- **Hold formal public hearings.** Once the Parties have a complete draft text of the Agreement they could ask the IJC to hold formal public hearings on it to gather public comment for the Parties.

More specific functions of the IJC in a review process may be described in the context of the five review options outlined in Section D.

Option #1: Traditional Approach [as used in the 1976/77 and 1986/87 reviews]

Independent review by each of the Parties could limit the demand for IJC involvement in the early stages of the process. The IJC could be limited to being an on-request provider of historical background and technical information for those stakeholder groups participating in consultations with the Parties.

However, once a jointly negotiated draft text was prepared, the IJC could be called upon as a third party to facilitate multistakeholder consultations and public comment.

Option #2: Joint Review – full stakeholder involvement and public consultation

A joint review with full multistakeholder consultation could call for more extensive involvement by the IJC as a third party chair of joint working groups, provider of expert knowledge, and organizer/facilitator of public meetings. The IJC could also be requested to provide a forum for the public hearings on a new draft text of the Agreement.

Option #3: Third Party Involvement

Under this option there are two potential alternative roles for the IJC:

- as an actual third party reviewer of the Agreement (as noted in Section 4, IJC Boards undertook such reviews of the 1978 Agreement; preliminary interest has already

been shown towards undertaking similar actions with respect to the current Agreement);

- as a coordinator or collator of other third party reviews on behalf of the Parties, in order that the Parties can maintain an arms length relationship with the independent reviews.

As described in Section 4, there are various possible types of third party reviews ranging from detailed technical analysis by scientific experts to community or citizen based examination of regional issues. Whichever of these options is used, the IJC has the experience and capacity to convene appropriate gatherings of the correct organizations or individuals needed for an effective process.

As under the earlier options, the IJC could also be asked to organize/facilitate public hearings on the new draft text.

Option #4: Great Lakes Roundtable

A “roundtable” approach to review of the Agreement would give the IJC less direct responsibility for the review but, at the same time, could provide the IJC with the greatest freedom of action in offering opinions and advice. The IJC would essentially be another stakeholder at the “table”, albeit one with a wealth of available data and knowledge pertaining to the issues. The IJC could offer to provide the resources needed to support the work of the Great Lakes Roundtable; alternatively support for the Roundtable could be from foundations.

Option #5: Parliamentary and Congressional Reviews

The IJC could hold several key responsibilities under this option. Should the parliamentary and/or congressional committees wish to hold public hearings at border sites around the Great Lakes, IJC resources and experience could be called upon to organise appropriate sessions and events. In addition, the IJC offices could provide technical support and advice to the committees in a manner that would be considered less prejudicial than other parties or stakeholders.

Whichever of these review options or combinations of them become accepted, and whichever set of roles and responsibilities are assumed by the IJC in the review process, there will be a number of positive benefits not only for the future makeup of the IJC but also for the broader Great Lakes community. By participating actively in the review process, the IJC could catalyze a positive new approach to managing the Great Lakes and assist the development of a fresh vision and a new Great Lakes Agreement.