

Synthesis of Public Comment

*on the Forthcoming Review
by the Federal Governments
of Canada and the United States of
The Great Lakes
Water Quality Agreement*

*A Report to the Governments
of the United States and Canada*

January 2006



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April 13, 2006

The Honourable Peter Gordon McKay
Minister of Foreign Affairs
125 Sussex Drive
Ottawa, Ontario K1A 0G2

Honourable Condoleezza Rice
Secretary of State
2201 C Street, NW
Washington, DC 20520

Dear Minister MacKay and Secretary Rice:

We have the honor to formally transmit the International Joint Commission's *Synthesis of Public Comment on the Forthcoming Review by the Federal Governments of Canada and the United States of the Great Lakes Water Quality Agreement* and the unedited record of public comment. This report and unedited record were requested by the Governments of the United States and Canada in letters of Reference dated June 8, 2005 and June 9, 2005 respectively. Advance copies of the *Synthesis of Public Comment* were provided to your officials on January 30, 2006.

As requested by the Reference, the Commission undertook a number of initiatives to inform the public about the Agreement and provide an early opportunity for input into the forthcoming review. These included receiving input at the June Biennial Meeting on Great Lakes Water Quality, holding 14 public meetings in the fall, convening an innovative four-day web dialogue, inviting comment by fax, mail, email and toll-free telephone line, developing a website and producing three informational documents.

The Commission wishes to thank the over 4,100 people who took part in the consultation. The high level of participation and depth of commentary demonstrate once more that there is a strong constituency for the Great Lakes Water Quality Agreement. In the Commission's view, the *Synthesis of Public Comment* reflects the range of the comments received. However, since a number of participants prepared detailed, substantive comments on the forthcoming review of the Agreement, the Commission strongly encourages the Governments and the public to examine this record.

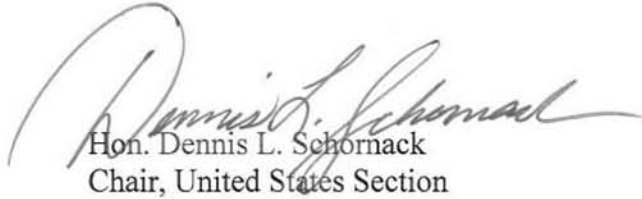
The Commission intends to release the *Synthesis of Public Comment* and the unedited record to the public on April 20, 2006.

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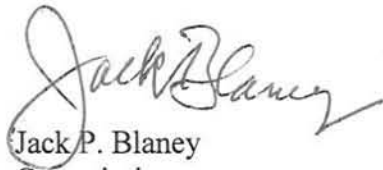
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The views expressed in this synthesis are those of the individuals
and organizations who participated in the public comment process.
They are not the views of the International Joint Commission.

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This report is available online at www.ijc.org.
The full, unedited record of public comment is available on CD-ROM on request.

Ce rapport est également disponible en français.



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Executive Summary

In June 2005, the Governments of the United States and Canada (Governments) asked the International Joint Commission (Commission) to conduct five regional public meetings across the Great Lakes basin beginning with the previously-scheduled Biennial Meeting on Great Lakes Water Quality. The meetings were intended to educate the public about the Great Lakes Water Quality Agreement and provide an early opportunity for public input into the forthcoming review of the Agreement, scheduled to be initiated by the Governments in early 2006.

The Commission established partnerships with mayors across the Great Lakes and St. Lawrence River basin, who cooperated enthusiastically by making meeting spaces and equipment available for the regional public meetings. This generous assistance reduced the Commission's operating costs, enabling it to hold 15 public meetings and to launch an innovative Web dialogue to increase opportunities for people across the basin to express their views about the issues that should be considered during the review.

Altogether, over 4,100 people participated in the process, including over 1,000 who attended the Biennial Meeting and regional public meetings. This is an excellent participation rate considering the potential for "consultation fatigue" from other consultations underway in the basin at the same time.

Several main themes emerged during the Commission's public comment process:

- Participants expressed strong support for the Great Lakes Water Quality Agreement and wanted all levels of government to reinvestigate their efforts to implement it.
- Participants demanded good water quality and said it is essential to ensure a healthy future for the lakes and the socio-economic well being of the basin's residents and their communities.

- Many concerns related to releases of municipal sewage and animal wastes. Participants wanted initiatives to address these issues included in a revised Agreement.
- Many participants were concerned about water quantity and climate change and wanted these issues to be addressed in the review of the Agreement.
- Considerable concern was expressed about aquatic invasive species and many participants also wanted this issue to be included in a revised Agreement.
- Participants were concerned about a variety of land use and watershed management issues. Many thought that these should be addressed during the review, especially the protection of wetlands.
- There was a great deal of comment on the lack of progress toward delisting and restoring beneficial uses in Areas of Concern, as well as the need to reinvigorate Remedial Action Plans.
- Participants in different parts of the basin said the Agreement should include the St. Lawrence River, downstream of the international boundary at Cornwall, Ontario, and Massena, New York.
- Many participants thought that more public education efforts were needed to build support for Great Lakes restoration.
- Many participants voiced support for a stronger Commission role to hold Governments accountable for achieving their Agreement commitments, to educate the public about the Agreement and to facilitate public input during the review of the Agreement.

The Commission systematically reviewed the issues raised in the unedited record of public comment and selected comments for this synthesis report that reflect the main points made by the participants, as well as minority views. The views expressed are from the individuals and organizations that participated in the public comment process and are not the views of the Commission. The high level of participation and depth of commentary demonstrate once more that there is a strong constituency for the Great Lakes Water Quality Agreement.

The Commission wishes to thank the over 4,100 people who took part in the public comment process. In the Commission's view, the synthesis report is a fair and even-handed reflection of the comments received during the public meetings, Web dialogue and other consultation activities. However, since a number of participants prepared detailed, substantive comments on the forthcoming review of the Agreement, the Commission also notes that the full, unedited record of public comment is available on CD-ROM and strongly encourages Governments and the public to examine this record.



Introduction

The Great Lakes Water Quality Agreement between Canada and the United States (the Governments) expresses the commitment of both countries to restore and maintain the chemical, physical and biological integrity of the Great Lakes basin ecosystem. The Agreement was first signed in 1972 and last amended in 1987.

Article X of the Agreement requires that the Governments conduct a comprehensive review of its operation and effectiveness following every third biennial report of the International Joint Commission (Commission or IJC). Under Article VII, the Commission is required to produce such reports concerning progress toward achieving the Agreement's general and specific purposes.

The Commission itself was established by the Boundary Waters Treaty of 1909. Article IX of that Treaty authorizes the two Governments to refer matters to the Commission for examination, study or other action, and to report findings to the Governments and the public.

Request from Governments

The Commission's *Twelfth Biennial Report on Great Lakes Water Quality*, issued in September 2004, triggered the Article X requirement for Governments to undertake a mandatory review of the Agreement. In June 2005, the Governments asked the Commission to assist them by carrying out a series of public meetings and gathering public comment before the Governments' review of the Agreement, which is scheduled to commence in the early part of 2006. This request was made by Letter of Reference under Article IX of the Boundary Waters Treaty. It is also consistent with Article VII of the Agreement, which gives the Commission responsibilities to assist the Governments in the implementation of the Agreement.

The Governments asked the Commission to conduct five regional meetings across the basin beginning with the previously scheduled Biennial Meeting on Great Lakes Water Quality in Kingston, Ontario. The purpose of the meetings was to educate the public about the Agreement

and provide an early opportunity for public input into the review (see Appendix A for the Letters of Reference).

In order to carry out its responsibilities with efficiency and cost-effectiveness, the Commission sought to establish partnerships with local governments across the Great Lakes and St. Lawrence River basin, including through the auspices of the Great Lakes and St. Lawrence Cities Initiative.

Mayors in both countries cooperated enthusiastically by making meeting spaces and equipment available for the Commission's public meetings and assisting with publicity for the events. This generous assistance reduced the Commission's operating costs, thereby enabling it to triple the number of public meetings and launch an innovative on-line Web dialogue in order to greatly increase the opportunities for people across the basin to express their views about the issues that should be considered during the review. The Commission, therefore, wishes to acknowledge the tremendous contribution of the following mayors and their city staff:

- Mayor Herb W. Bergson, Duluth, Minnesota
- Mayor Jane Campbell, Cleveland, Ohio
- Mayor Richard M. Daley, Chicago, Illinois
- Mayor Eddie Francis, Windsor, Ontario
- Mayor William A. Johnson, Jr., Rochester, New York
- Mayor Robert J. Katt, Bay City, Michigan
- Mayor Kwame Kilpatrick, Detroit, Michigan
- Mayor Jean-Paul L'Allier, Quebec City, Quebec
- Mayor George J. MacDonald, Midland, Ontario
- Mayor David Miller, Toronto, Ontario
- Mayor Lynn Peterson, Thunder Bay, Ontario
- Mayor John Rowswell, Sault Ste Marie, Ontario
- Mayor James Schmitt, Green Bay, Wisconsin
- Mayor Gérald Tremblay, Montréal, Quebec

Mayor Harvey Rosen of Kingston, Ontario was also instrumental in making the historic city council chamber and other facilities available to the Commission during its Biennial Meeting in June 2005.

To assist in the planning and implementation of its consultation process, the Commission established a 22-member Advisory Committee of key U.S. and Canadian leaders and experts from across the Great Lakes–St. Lawrence River basin. The Commission wishes to acknowledge the contribution and dedication of the Advisory Committee members:

- John Andersen, Great Lakes Director, The Nature Conservancy
- Andy Buchsbaum, Director, Great Lakes Natural Resource Center, National Wildlife Federation
- Lynda Corkum, Associate Dean of Science, University of Windsor
- Tom Crane, Interim Executive Director, Great Lakes Commission
- Cameron Davis, Executive Director, Alliance for the Great Lakes
- Michael Donahue, Vice President, URS Corporation
- Greg Farrant, Manager, Government Relations, Ontario Federation of Anglers and Hunters
- Marc Gaden, Communications and Legislative Liaison, Great Lakes Fisheries Commission
- André Harvey, Former Chair, Bureau d'audiences publiques sur l'environnement
- Marc Hudon, Director, St. Lawrence and Great Lakes Program, Nature Québec
- John Jackson, Member, Board of Directors, Great Lakes United
- Stuart Johnston, Vice President, Policy and Government Relations, Ontario Chamber of Commerce
- George Kuper, President and CEO, Council of Great Lakes Industries
- Claude Martin, President, Stratégies Saint-Laurent
- Scott Munro, General Manager, Sarnia Lambton Environmental Association
- Mary Muter, Vice President, Georgian Bay Association
- David Naftzger, Executive Director, Council of Great Lakes Governors
- Jeffrey Potter, Director of Communications, Biodiversity Project, and Coordinator, Great Lakes Forever
- Jeff Reutter, Director, Ohio Sea Grant College Program
- Melissa Trustman, Director of Public Policy, Detroit Regional Chamber of Commerce
- David Ullrich, Executive Director, Great Lakes and St. Lawrence Cities Initiative
- James Weakley, President, Lake Carriers' Association

Outreach Efforts

In addition to specifying regional meetings, the Governments encouraged the Commission to make use of information technology to expand the opportunity for residents throughout the basin to participate in the process. The Commission was also asked to develop background materials for use in the consultation, and the Governments undertook to provide basic funding to support the Commission's efforts in connection with the Reference.

The Commission utilized information technology by hosting a Web dialogue — an online discussion over four days on a variety of topics with a moderator and expert panelists. A toll-free telephone line and a dedicated email address were also established for submitting comment, along with the Commission's own website, fax and regular mail services.

The Commission produced a number of publications to support these activities, including a brochure to announce the consultation process, a *Guide to the Great Lakes Water Quality Agreement* and a workbook that served as a consultation document. Summaries of all public meetings and the Web dialogue were posted on the Commission's website within days of each event, and full transcripts of the sessions were posted as soon as available. All informational materials and meeting summaries were released simultaneously in English and French. For the Web dialogue, the Commission also developed a fully bilingual website and employed a team of translators to translate each comment in as near to real-time as possible.

Almost 20,000 copies of the brochure and the guide were distributed, many by members of the Advisory Group and the offices of mayors. Display advertising and news coverage were helpful in publicizing the initiative, as were the links on the websites of Advisory Group members' organizations and the Governments, and announcements by the Great Lakes Information Network.

About the Participants

The Commission collected data on participation by taking attendance at meetings and counting the submissions it received. Information about the participants themselves was derived from registration forms at the Kingston

Biennial Meeting in June, voluntary and anonymous surveys of participants at the meetings and in the Web dialogue, as well as from the submissions it received by hand, email, fax, mail and telephone. While these surveys and other data-gathering methods are not scientific, they do provide a general picture of who participated and how.

Total Participation and Channels of Participation

Altogether, 4,133 people participated in the process. This is an excellent turnout considering the potential for “consultation fatigue” from other consultations underway in the basin at the same time (Annex 2001, the Great Lakes Regional Collaboration, the Lake Ontario–St. Lawrence River Study, and other Great Lakes–related consultations by provincial and state governments).

As the table on the next page shows, nearly three-quarters of participants used online channels (email, the website or the Web dialogue). It is important to note, though, that more than eight in 10 online participants — and more than six in 10 of all participants—sent form letters via submit forms on third-parties’ websites.

For the 1,443 people who participated directly in the Commission’s process (i.e., those who attended meetings or corresponded directly with the IJC, rather than through third-parties’ websites), the 15 public meetings (including the Kingston Biennial Meeting) were the main draw, attracting more than 70 percent. Only seven percent used email and about 4 percent used the more traditional phone, fax or mail. The Web dialogue, an innovation and a first for the Commission, attracted nearly 250 people, fully 17 percent of all those who participated directly in the Commission’s consultation. Ninety people participated in two or more channels.

See also Appendix B, tables 1, 2 and 3.

Location

Over 80 percent of participants, including those who sent emails through third parties’ websites, came from the United States. The top states of origin were Illinois, Pennsylvania, Michigan and Wisconsin, which together accounted for about 75 percent of the total.

If we exclude the third-party submits, however, and look at those who participated directly, involvement by

Canadians and Americans was more evenly shared, with a slightly higher turnout by Canadians than Americans (53 percent compared with 45 percent). As might be expected, the bulk of the participants (93 percent) came from the Great Lakes states and provinces, with Ontario in front with nearly 49 percent, followed at a distance by Michigan (11 percent).

More than half of the participants in the public meetings and the Web dialogue¹ came from lakes Michigan, Ontario and Huron, while nearly as many came from the St. Lawrence as from Lake Erie.

Nearly six out of every 10 people who came to a meeting or joined the Web dialogue were from urban and suburban areas.

See also Appendix B, tables 4, 5 and 6.

Participants’ Education and Age

The bulk of those who took part in the meetings and joined the Web dialogue had an undergraduate or post-graduate degree and were aged between 30 and 64. Very few—just over six percent—were under 30.

Of those at the public meetings and in the Web dialogue who identified themselves as Canadians and identified a first official language, just over 6 percent said they were francophone.

See also Appendix B, table 7.

Interest and Involvement in the Great Lakes

The environment was the meeting and dialogue participants’ primary interest, followed by recreational interests. Commercial interests (agriculture, industry, fishing, shipping) were each cited by about 10 percent of participants.

Nearly a third of those who attended meetings or joined the Web dialogue said they were members of environmental groups. Individuals representing a total of 98 organizations made presentations at the meetings or sent in submissions.

See Appendix B, table 8, and Appendix C.

Participants, by channel¹			
Channel	Number	Percent	Percent excluding third-party submits
Kingston Biennial Meeting	434	10.5	30.1
Public meetings ²	603	14.6	41.8
Mail or fax	42	1.0	2.9
Telephone	12	0.3	0.8
Web Dialogue ³	247	6.0	17.1
Email from IJC website submit form	45	1.1	3.1
Email directly to gl@windsor.ijc.org or IJC public affairs	60	1.5	4.2
Email from third-party website submit forms ⁴	2690	65.1	
TOTAL	4133	100.0	
Total excluding emails from third-party submit forms	1443	34.9	100.0

1. None of these counts includes IJC commissioners and staff, translators or other contractors. Those who participated in a single channel more than once (e.g., they called several times or sent several emails) are counted only once in that channel. On the other hand, those who participated in more than one channel are included in the total for each of them.
2. Informal head count; of these, 453 registered.
3. The number of people who registered for the Dialogue, as opposed to the number who actually joined the online discussion.
4. Emails sent to gl@windsor.ijc.org via submit forms on third parties' websites, including PIRG Illinois, PIRG Wisconsin and PENNEnvironment.

Main Themes that Emerged during the Consultations

Participants in the Commission's consultations were asked to respond to four questions related to expectations, effectiveness, scope and public engagement. These four questions are also used as the framework for organizing this synthesis report. The Commission systematically reviewed the issues raised in the unedited record of public comment, which totals more than 5,000 pages, and selected comments for the synthesis report that reflect the main points that were made by the participants, as well as minority views. As the participants' own words best capture the nuances of the comments,

the Commission included many direct quotes. The views expressed in the synthesis report are from the individuals and organizations that participated in the public comment process. They are not the views of the Commission. No random sampling was performed, so the record of public comment represents the opinions of people who participated in the public consultations and not necessarily the opinions of the population in the Great Lakes basin as a whole. The high level of participation and depth of commentary, however, demonstrate once more that there is a strong constituency for the Great Lakes Water Quality Agreement.

Several main themes emerged during the Commission's public comment process:

- Participants expressed strong support for the Great Lakes Water Quality Agreement and wanted all levels of government to reinvigorate their efforts to implement it.

¹ Those who participated in the public meetings (excluding the Kingston Biennial) and registered for the Web dialogue were asked to complete a voluntary, non-identifying survey; 69 percent of them did so. Since participants in the other channels (including the Kingston Biennial Meeting) did not have the opportunity to join the survey, certain information (notably nearest waterway, age, education, interest) is not available for them.

- Participants demanded good water quality and said it is essential to ensure a healthy future for the lakes and the socio-economic well being of the basin's residents and their communities.
- Many concerns related to releases of municipal sewage and animal wastes. Participants wanted initiatives to address these issues included in a revised Agreement.
- Many participants were concerned about water quantity and climate change and wanted these issues to be addressed in the review of the Agreement.
- Considerable concern was expressed about aquatic invasive species and many participants also wanted this issue to be included in a revised Agreement.
- Participants were concerned about a variety of land use and watershed management issues. Many thought that these should be addressed during the review, especially the protection of wetlands.
- There was a great deal of comment on the lack of progress toward delisting and restoring beneficial uses in Areas of Concern, as well as the need to reinvigorate Remedial Action Plans.
- Participants in different parts of the basin said the Agreement should include the St. Lawrence River, downstream of the international boundary at Cornwall, Ontario, and Massena, New York.
- Many participants thought that more public education efforts were needed to build support for Great Lakes restoration.
- Many participants voiced support for a stronger Commission role to hold Governments accountable for achieving their Agreement commitments, to educate the public about the Agreement and to facilitate public input during the review of the Agreement.



Expectations

Participants were asked what issues they want to see addressed during the review of the Agreement and three questions were used to probe for responses:

- Are you concerned about the quality of groundwater and surface water near where you live? If so, what concerns you?
- Do you have concerns about other components of the Great Lakes–St. Lawrence River ecosystem? If so, what are they?
- Is government action required to address your concerns? If so, which level of government should that be: municipal, state, provincial, federal or international?

Water Quality

Water quality was the primary issue that participants in the public meetings wanted to see addressed. “The first thing we would all expect would be clean water,” said one elected official in a shoreline community along Lake Huron: “I don’t think that is asking too much, knowing that we are the keepers of the largest natural bodies of fresh water in the world.”

A retired environmental scientist was just one of the many people who made a similar point, this time during the Web dialogue:

Only one ten-thousandth of planet Earth’s water is fresh and available. Water is part of the ‘Global Commons’ which we share with all the world’s people and life forms. The Great Lakes represent 18 to 20 percent of that very scarce resource. We have a huge global responsibility to protect this 10,000 year-old, life-sustaining gift from the last ice age. Freshwater scarcity is so severe it ranks second only to climate change as the most pressing global environmental issue today.

In fact, good water quality was a universal theme underscoring virtually all of the comments in the public meetings, Web dialogue and other forums. Clean water was seen as a boon to health and a healthier future for the lakes and their people, as well as to tourism and recreation. In different versions, a remark by one participant was heard across the basin: “The reason why we are concerned about the water quality of the Great Lakes is, of course, because it is a food source and because of the quality of life in general.”

There also was a pervasive feeling that the public’s expectations for clean water are not being met: “We talk about water quality,” said one person in a version of what was heard elsewhere across the basin, “and you don’t see it getting any better.”

Many other participants made similar statements:

The Michigan fish advisory and its companion pamphlets from other Great Lakes states and Ontario are like little paper tombstones reminding us of what poor stewards we have been of the world’s largest endowment of freshwater and its inhabitants.

I am a parent with four children, and so I am really concerned about water my children and all children drink. I am concerned about the water my children and all children swim in. ... I am concerned about the fish our family catches and eats and that we can’t [eat] because of the fish advisories, because of mercury.

I see things going into the water. I don’t know who tests it, how often it’s tested.

The people are drinking this water, people are fishing down by the river ... Health Canada has made statements that people should be very careful — pregnant women and children should be very careful — how much of this fish they

eat. And every summer, I walk down by the river and I see families fishing and I speak to them and they tell me, 'We take this fish home and we eat it.' Why are there no signs by the river warning pregnant women not to eat this fish, students — who don't have much money — not to eat this fish? I mean, it's very, very sloppy monitoring of people's safety, here.

Beach closings were a frequent indicator used to assess the quality of water. "One of the reasons I am here this evening," said a local elected official, "is that, in my township, our beaches have been closed for the last five years because of elevated levels of *E. coli*, and that is of great concern to all the residents of our community." Or a mother, worried about the welfare of her family: "Here, on Lake Superior, we have had many beach closings over the last few years since our beaches have been tested, and I am concerned about that."

The health and survival of wildlife was another concern of many participants:

We have seen a very tragic loss of about four species of terns just in the last 10 or 15 years that used to nest right in the lower bay — beautiful birds that were fish-eaters. And studies had shown in the 1980s that they were having health problems due to toxic contamination, primarily what's left over in the sediments from past pollution.

Toxic chemicals entering the Great Lakes have been related to environmental health problems including poor egg hatching success, reproductive abnormalities, birth defects in fish, fish-eating birds and mammals. Tumours and other deformities in some fish and wildlife species are also attributed to exposure to toxic contaminants.

Some participants integrated the various aspects of water quality into a vision for a healthy Great Lakes basin ecosystem. According to one written submission from an ongoing roundtable discussion of Great Lakes stakeholders, "the current and emerging review of the Great Lakes Water Quality Agreement provides a particular opportunity to advance a vision." The submission provided a statement envisioning that "the people of the United

States and Canada will work together as stewards to protect and improve the unique shared Great Lakes and St. Lawrence resource for use by future generations." The statement articulates specific goals for the environmental, economic and social well-being of the Great Lakes and St. Lawrence region.

Sewage and Land Use

With respect to sources of pollution, issues related to sewage were universally raised in the public meetings, Web dialogue and written comments. A common remark was voiced by one participant about his municipality: "Every time it rains, any little bit of rain or a little snow melts, they just open their tunnels up and dump it in the lake." Another person complained that, like 14th century medieval villagers, contemporary society treats rivers as sewers: "It is incredibly discouraging," he said, "to read in local newspapers, after even minor rainfall, that hundreds of thousands of gallons of raw or partially treated human sewage have been dumped in the Saginaw River and, ultimately, the bay, the source of our drinking water." One organization representing millions of people engaged in outdoor recreation called for stiff penalties in cases of municipal sewage overflows: "Severe consequences should be levied against municipalities that continue to discharge sewage and contaminate the water with pathogens and bacteria."

Land uses, especially urban development and agricultural operations, were also cited in most of the sessions as contributing significantly to water pollution. One participant, a consultant, captured the point made by many others when she said that, "Many environmentalists and government officials view out-of-control development as one of the top threats to a sustainable ecosystem." Another person made a similar point in a written submission:

I am very concerned with the rapid suburban sprawl taking place with no attention paid to smart growth and its dire consequences to the health of the Great Lakes ecosystem. ... It is necessary to realign governance institutions to sustain ecosystem services and integrate planning and management of these services. This may require federal legislation and overseeing at federal, state and local levels.

The practice of using manure as fertilizer was generally cited as a water contaminant and a risk to health. A popular refrain was expressed this way by one participant:

I can't for the life of me think why the United States and Canada, Ontario, Michigan, Wisconsin, allow people to spread liquid manure. In Ontario alone, we have billions of gallons of liquid waste, hundreds of thousands of tonnes of manure, plus human waste, that we spread on the fields every year. And we wonder why *E. coli* is getting into our beaches, into our water. Are we stupid or what?

Another person, a local elected official, said that industrial agriculture has been prevalent in her county for ten years: "We all feel that the waters are being compromised through this type of land use. We're seeing nutrient overloads and high levels of *E. coli*."

Some farmers, however, contested this assessment, saying that agriculture has made many positive contributions to water quality: "Best management practices have been hammered down to farmers for many, many years already ... and many of those practices are routinely done all the time."

Agricultural practices also arose during the Web dialogue and were blamed for other effects as well:

Large-scale production agriculture, in concert with development, has resulted in the loss of many valuable coastal wetlands. ... Furthermore, drainage of wetlands, ditching of streams and tile drainage to promote agricultural land use has altered the normal hydrology of tributary rivers, denuded riparian habitats, and disconnected large river mainstems from their flood plains. The cumulative results of this are degraded or lost spawning habitats for fish, an alteration in the dynamics of sediment transport, and a disruption in the relative contribution of benthic energy sources to the open waters.

Another land use issue was garbage disposal sites and their impact on the ecosystem:

Among the new contaminants of concern that are on the rise are those that can be found in

landfills routinely discarded by consumers, including flame retardants, PBDEs (polybrominated diphenyl ethers) that are mixed into plastics, clothing and other products, as well as chemicals to prevent stains and keep foods from sticking to pans. Homeowners routinely discard treated clothing, plastics, Teflon cookware, thermometers, batteries, cell phones, electronic equipment, fertilizer and pesticide containers, bike tires, diapers, pharmaceuticals and toxic household products which find their way to the landfill and, ultimately, as part of the leachate [which makes its way to tributaries and the Great Lakes].

For these reasons, many participants urged that the review look at land use in the broadest sense. In a written submission, one participant summarized the issue as follows:

When I spoke at the Kingston Biennial Meeting, I spoke of the necessity of the Commission recommending land use initiatives that would leave no piece of land (developed or to be developed) untouched by requirements to protect and to improve water quality and watershed health. I would like to see the Agreement take binational actions to address the impact of land use on water quality and watershed health in all sectors, and I do not believe that it is only urban runoff that the Agreement must address. ... The Agreement should also be evaluating the use of pesticides as an unacceptable land use.

Aquatic Invasive Species

Participants in the public comment process frequently cited aquatic invasive species as one of the main issues that should be addressed during the review of the Agreement because of the scope of its impact on the ecosystem and economy of the basin. Some argued that this issue fit into the current Agreement's focus on addressing the impacts of pollution:

The exotics are a huge threat to the Great Lakes system, and I would urge you to push the Governments of the United States and Canada to treat exotics as a pollutant, because that's

essentially what they are, and they have tremendous effects on the ecosystems of these water bodies and all of the tributaries and lakes that are connected to them.

Comments on the aquatic invasive species issue are described in greater detail in the section below on the Scope of the Agreement.

Aquaculture

Like industrial farming, open-cage aquaculture was cited by many participants as a significant cause of water pollution. The concern is that waste from these operations flows into surrounding water or settles onto the lake bottom to build up in a thick sludge, consisting of uneaten feed and fecal matter that depletes oxygen levels, generates methane and causes other environmental problems. Typical comments include the following:

Instead of collecting and treating waste as required in land-based operations, caged facilities typically rely on the free movement of water through the netting to carry away fish manure and uneaten seed, which includes antibiotics and colorants.

Without any direction from the public, the province [Ontario] has given this industry free use of a Great Lakes water resource for unlimited supply of fresh water and free disposal of its waste and unrecoverable byproducts. Unlike any other industry or farming activity, open-net aquaculture is given sole rights of this public resource to generate profits.

I wish to end this presentation with a request to the IJC to include open-net cage aquaculture as an emerging issue, and emerging problem in the 2006 review of the Great Lakes Water Quality Agreement.

It was stated that, “There are proven, alternative methods for rearing fish for protein consumption, and this clean aquaculture has been undertaken for centuries and centuries.” Land-based aquaculture was generally seen as a preferred technology because, as one participant said:

“More than 90 per cent of the water in a recirculating system can be treated, pumped back into these tanks, recycled and the waste products used as fertilizer, for example.”

Protection of Wetlands

The loss of wetlands was a recurring issue in the public meetings, Web dialogue and written comments. Wetlands, it was noted many times, filter and remove pollutants and absorb nutrient loadings from shoreline development, and their degradation was a matter often proposed for inclusion in the review:

We ask that the significant role that wetlands play in protecting and restoring water quality be considered during the review of the Great Lakes Water Quality Agreement.

Since 75 percent of Great Lakes fish need wetlands for spawning and nursery habitat, we need to protect what good wetland habitat we have left in the Great Lakes. We hope that the Great Lakes Water Quality Agreement review can address protecting wetlands.

The loss of wetlands was attributed to many factors, including large-scale agriculture, development infilling and fluctuating water levels. One participant stated that, in some locations, significant declines in water levels have caused losses of wetlands that “cannot be restored because the adjacent steep granite shorelines do not support that.” At the same time, however, it was noted that low water levels have seen the return of some coastal wetlands, and concerns were expressed that this phenomenon is sometimes compromised by property owners:

Many beachfront property owners, accustomed to high water levels and sandy beaches, resent the intrusion of vegetation and accompanying insects, amphibians, reptiles and waterfowl that form a wetland ecosystem. Many have bulldozed, plowed and applied herbicides to the emergent wetlands. Some have even planted crops in the exposed bottom land. These actions are in violation of the public good served by coastal wetlands and recognized as violations of both federal and state wetland protection statutes.

Contaminated Sediments

There was a widespread sense of frustration and resentment that contaminated sites are not being cleaned up. An Aboriginal woman spoke about a former glue and animal hide factory that polluted the creek where she and her sisters played as youngsters, swimming in the water and eating the berries and rhubarb that grew alongside it. “The list of toxins that place still puts into the water is extreme,” she told a public meeting. “This plant has been closed for over 20 years. EPA recently came up with a decision to leave it in there. And it contaminates our creek, it contaminates Lake Erie.”

Others, including a Mayor during the Web dialogue, made similar comments:

My concern is related to old deposits of mercury that continue to sit on the bottom of our lakes and rivers. I readily acknowledge that linking specific people or companies to the deposits will in many cases be difficult and, to that end, I believe that the main agenda should be to remove as many of the known deposits as possible, irregardless of who was responsible. The continued existence of the blobs of mercury will continue to have an effect on safe food consumption, recreation opportunities and economic development.

Economic Issues

A widespread notion was that preventive action is far less expensive than remediation. This was often discussed in terms of making the Agreement more proactive, identifying and eliminating problems before they emerge rather than having to deal with them after they have become apparent. One participant, referring to the estimated restoration price tag proposed by the recent U.S. Great Lakes Regional Collaboration initiative, said: “We won’t have to spend \$20 billion to restore it [Lake Superior] if we do some things now to protect it.” This refrain was heard many times:

The only requirement for funding is if you didn’t do the right thing upfront. If you passed the laws that are required to stop the spills, stop the

dumping, stop the pollution and stop the poisoning, you’ll never have to do the funding later.

We have found that protection of Areas of Concern is much more cost-effective and it’s much easier than restoring.

Good water quality was seen not just as a human health or environmental issue, but also as something that impacts a community’s economic development. “It’s extremely hard to promote our community as a tourist destination, for new business growth, when frequently, with very little rainfall, we get our news reporting that we have combined sewage overflows,” said one participant. Sewage discharges were also seen as an economic burden on industry, local governments and taxpayers: “It’s costing anybody that has water from the lake an extra fee because they have to purify that water,” said one person.

Economics also figured in another way, when some participants advocated putting an economic value on ecosystem services (that is, the benefits derived from the environment): “When it comes to ecosystem services, most people don’t have a clue — other than they have a passion for it. They can understand an inherent value, but when it comes to the decision-making process, that’s not at the doorstep, it’s left outside the process. And I think that, as a society, we need to start putting that back in or put it in the concept.” Such circumstances, it was suggested, would lead to changes in, for example, decisions regarding coal-fired plants, air quality emissions and regulations.

A representative from a regional industry organization suggested that a revised Agreement could and should be supportive of the sustainable development of the Great Lakes region while guiding basin policy in its management of the waters of the Great Lakes:

The possible revision of the Great Lakes Water Quality Agreement is an opportunity to shape policy toward regional economic and social viability along with environmental issues and to recognize humans and human needs as a part of the ecosystem. The economic benefit produced by industry is a critical component of a healthy ecosystem and the region must be a viable place to do business. Including industry’s perspective will ensure a sustainable development focus.

Monitoring

Water quality monitoring was widely seen to be in need of improvement through further investments in equipment, personnel and activity. A member of the Public Advisory Group of a delisted Area of Concern cast the issue this way:

Monitoring is integral to maintaining some sort of baseline, knowing where we sit with water quality, but it also allows us to address changes that may be taking place. ... And what I've seen in the last five years, based on government funding, is that we are not getting the funding to actually support monitoring. Monitoring is always the last thing thought of. We always address symptoms, we always address problems, and we try to actually band-aid those problems. But when it really comes down to it, we need to be able to support these monitoring initiatives. If we don't support these monitoring initiatives, we won't be able to see future problems that are coming down the pipe.

Several participants complained that water testing seems to be limited to *E. coli*: "How many other organisms are there in beach water that we can't test for because we just don't have the money for, you can only guess," said one person. "But there are many pathogens out there that are much worse than old 157H7, the *E. coli* that killed people in Walkerton."

One scientist suggested that in order to really understand or know the concentrations of nutrients in the water, samples need to be taken in winter when there are minimal periods of daylight and a reduction in the level of phytoplankton. "Without this, you can't say clearly what's going on."

In addition to water quality, some participants raised the issue of air quality monitoring. An environmental graduate student recalled his experience during a summer research job: "We would come up the river from the corner, about a kilometer past the bridge, and it was all we could do not to breathe. It was disgusting. We would see, at certain times of the day, the smoke coming from the stacks ... the smoke would turn from white to yellow to orange. And I just don't know if those things are being monitored."

The consistency of monitoring activities was also questioned, with several participants noting that the various jurisdictions have different requirements in terms of collection procedures and standards:

One tangible that I'd like to see in the Great Lakes Water Quality Agreement is an actual collection of baseline data throughout the entire basin, consistent on the U.S. and Canadian side. We've got the state heritage programs on the U.S. side that collect data, but on the Canadian side they're collecting it in a different manner.

We need to have comprehensive, comparable data standards in terms of data collection methodologies. This is one of the key aspects for setting the baseline to make more recommendations and improving the water quality for the basis.

In addition to gaps in monitoring and consistency in data collection, there were concerns about how the information is used and about potential overlap and duplication. One expert put it this way:

I think all of us who have been involved in the Great Lakes are aware of the probably rooms and rooms full of data and the hard drives that are now loaded to the gills with data, but the management of that and the delivery of that information again to the broader public and to the policy makers, I think, needs to be significantly improved. ... At the same time, I think it's important to avoid duplicative reporting as much as possible. As the Agreement is reviewed and possibly revised, it's important to look at the reporting systems that are included to make sure that there's just enough, but not too much.

Another issue that arose in connection with monitoring was the perceived need to make data more accessible to the public. The very first email submission to the Commission touched on this point:

I just want to make a comment about the need for a common repository for water quality data (and other natural resource data) collection to determine large scale trends. The data should

undergo quality assurance and then be made available to the public on a website. Agencies are using their own data collection methods and management, which makes it difficult to analyze the data at a regional scale.

Water Quantity

Although the Agreement deals with water quality, water quantity was very often raised during the public meetings, and many people established a link between the two themes. Said the program manager of a regional environmental organization: “One issue that the Agreement does not take account of is water quantity. ... Periods of very low water levels or available water affect the quality of water and the uses of water.”

The issue was also raised during the Web dialogue by several participants. “If there is a drop in water levels,” one wrote, “an increase of storm runoff or pollutants will become more concentrated and need further and more intense purification for drinking water to be safe for the general population.”

This view was shared among many participants. One, for example, stated that low water levels “will negatively affect river flows, increasing pollutants in directly inverse proportions.”

The Chicago diversion was an issue that attracted much comment: “The water that is there [in the Great Lakes basin] should stay in there. It should not be shipped over to the Mississippi basin, like is being done in that Chicago ship canal,” said one U.S. participant. This comment was echoed in Ontario, where the diversion was seen as undermining the Great Lakes Water Quality Agreement:

Since the city of Chicago, with its massive and increasing withdrawal diversion program, is not subject to the terms of this Agreement ... we hold out little hope for the long-term success of this Agreement ... the Chicago [diversion] must somehow be included in the Agreement.

In Quebec, too, the issue was a hot topic. One member of a regional environmental council said that people in that province think that diversions from Lake Michigan amount

to water takings from the St. Lawrence River: “In the area where I live,” he reported, “diverting St. Lawrence water to the Mississippi is a major issue, a critical point.” Another Quebecer linked the Chicago diversion and the Annex 2001 negotiations in terms of impact on the province: “All of these factors reduce or intend to reduce the quantity of water in the St. Lawrence River.” And, he went on:

When the lower states or the southern states go to Congress and say ‘We want your water,’ that’s our water [they’re talking about]. What happens to Montréal? It is the United States Congress that is going to decide for Quebec and Ontario, not the Canadian Government. The U.S. Congress must decide for the eight governors and two premiers of provinces who will get our water. This is a menace that we have never known in Montréal. What we see is Montréal disappearing. What we see is the city of Montréal, its pipes to draw water sitting above the water line.

Proposed resolutions to this widespread concern included reviewing the U.S. Supreme Court decision that confirmed the Chicago diversion or establishing an international governing board for the Lake Huron–Michigan basin, similar to the Commission’s boards for the Lake Superior and Lake Ontario–St. Lawrence River basins. Many people also urged that the matter be addressed by the Great Lakes Water Quality Agreement.²

Great Lakes–St. Lawrence Seaway

Some concern for ecosystem impacts was raised in connection with periodic proposals to deepen and widen canals in the Seaway, and build larger locks to accommodate PANAMAX ships (so called because they are of the maximum dimensions that will fit through the Panama Canal). One participant opposed to Seaway expansion expressed the concern as follows:

² *Note from the IJC:* The Chicago diversion, which has been confirmed by the U.S. Supreme Court, became operational in 1900 (predating the Boundary Waters Treaty by nine years). The amount it removes from the Great Lakes is less than the amount diverted into them at Longlac and Ogoki, Ontario. The Longlac and Ogoki diversions began operation in 1939 and 1943 respectively.

Seaway expansion would necessitate blasting the channel of the river to make it wider and deeper to accommodate ships up to 30 percent larger than those currently transiting the River. In some places, pieces of shoals and islands would need to be removed. Blasting and dredging would cause harm to fisheries and wetlands, and it would increase toxic loadings to the food chain due to re-suspension of contaminated sediments.

Accountability

Accountability for implementing the Agreement and addressing the public's concerns was a major theme, with participants complaining that the Agreement does not provide adequate mechanisms that ensure accountability. "We would like achievement of its objectives to be made the responsibility of institutions or organizations in a very precise way," said one participant during the Web dialogue. "It would also be desirable to establish time lines for these objectives to be achieved; the Commission could subsequently evaluate the progress made."

Most people assigned major if not exclusive responsibility to the two federal Governments. A former senior official in an environmental agency put it this way during the Web dialogue: "The Great Lakes Water Quality Agreement should include enforcement provisions that allow the Commission, state and provincial governments,

NGOs (non-governmental organizations) and citizens to hold the federal governments accountable, in court, if they fail to implement the Agreement." Overall, suggestions that accountability provisions be added to the Agreement attracted considerable support.

Some participants, however, believed that accountability rests with state and provincial governments as well. As another retired environmental official put it, this time in the Canadian context: "It's very important, that what gets put into this Agreement, if there are revisions made, that they be very specific and provide little wiggle room for the federal and provincial governments, either one, to slide out of commitments."

Finally, others argued that municipal governments should also be accountable. A university professor put it this way: "It is clearly up to local governments to invest in actions that improve the lakes — sewage treatment, land use, etc. — yet local, state and provincial governments have absolutely no accountability or governance mandate under the Great Lakes Water Quality Agreement. There is a tremendous opportunity for change during the review."

The question of accountability figured in many comments about effectiveness, and a number of people — including several mayors — made a case for including local governments in the Agreement. These issues are addressed in the sections below on Effectiveness and Scope.



Effectiveness

Participants were asked whether they thought the Agreement is working, and three questions were used to probe for responses:

- Is the Agreement helping to restore and maintain the chemical, physical and biological integrity of the Great Lakes? If not, why not?
- In which situations does the Agreement fall short? Which parts of the Agreement have worked well and which have not?
- What do you think about how governments have been implementing the Agreement? Is there anything else they could or should be doing?

Perceived Successes and Failures

There was widespread support for the Agreement, which was seen as a successful binational vehicle for management strategies around focused issues. Said one state environmental official: “The Agreement has had positive results in such areas as the development of Remedial Action Plans and Lakewide Management Plans, which, as directed under Annex 2, provide for a systematic and comprehensive ecosystem approach to restoring and protecting beneficial uses in Areas of Concern and in open-lake waters.” Other products of the Agreement were said to include identification of the need to control persistent toxic substances and deal with contaminated sediments, and the development of programs to address such issues.

Many other people agreed with this assessment, as the following comments illustrate:

The Water Quality Agreement should be recognized for what it is and what it has accomplished, a fine and eloquent statement of environmental consciousness, a discrete tool and guide for the Governments to maintain chemical integrity, and a commitment to cooperation across borders that transcends our national interests and seeks

to promote health, vitality and democracy to all people by protecting a scarce natural resource on which we rely for so much.

What I want to speak about is the success of some of these cleanup efforts because we’ve noticed a lot of hawks, falcons and eagles back in the area. Fish habitats are quite stable in the area. The fishermen are pulling out their quotas of fish ... and they’re relatively clean fish; you’re not seeing what you would have seen in the past. I’m pretty happy with seeing the re-introduction of these predatory birds in the region. It’s a good indicator that things are cleaning up, and you guys deserve to know that.

Clearly, the phosphorous cleanup of the Great Lakes was the greatest achievement of the Great Lakes Water Quality Agreement. Moreover, the Agreement effectively focused attention on the broad subject of persistent bioaccumulative toxics.

The Great Lakes Water Quality Agreement has been an important force in moving both Lake Ontario and the Great Lakes ... toward restoration of beneficial uses.

Based on these successes, many people hold high hopes that a revised Agreement will continue to facilitate improvements in the future:

The Great Lakes Water Quality Agreement was born as a reactive document, responding to what was then considered the imminent death of Lake Erie. The Agreement and laws in the U.S. and Canada swung into action and helped reverse that process. We still have a lot more work to do to restore damage. As such, the next generation of the Agreement should be used to inspire coordinated restoration campaigns in the U.S. and Canada.

Virtual elimination, zero discharge in the existing Agreement forced us to really try and figure out new solutions to how to deal with toxics. Now we need to make sure that we continue in that way. We need to be thinking of the Water Quality Agreement as something that will work for us for the coming 20 years and, therefore, it must be very forward thinking and very leading-edge in terms of what we do with it.

Most participants, though, shared the view that there should have been much more success over the life of the Agreement. In a written submission, one Waterkeeper argued that, “the reason the objectives of the Great Lakes Water Quality Agreement have not yet been met is because the Agreement has been poorly implemented. We do not believe there is a fundamental flaw with the document.”

Many pointed to the fact that only two Areas of Concern have so far been delisted, that some problems persist despite the efforts to date, and some problems have hardly been addressed, if at all. As one expert, a former senior federal government official, put it during the Web dialogue:

Unfortunately, the concept of virtual elimination of the discharge of [persistent bioaccumulative] toxics morphed into a virtual elimination approach to all toxics themselves, as well as a zero discharge approach, both of which mired the Agreement in controversy and hostile opposition in many quarters. This, in part, contributed to the gridlock over the AOCs/RAPs [Areas of Concern and Remedial Action Plans]. The perfect became the enemy of the possible. Finally, the Agreement did not take a broad ecosystem approach which truly addressed the chemical, physical and biological integrity of the Great Lakes. Rather, it was viewed as merely an ecosystem approach in the service of chemical reductions. Thus, issues like aquatic invasive species, flow regime disruption, habitat loss and land use were largely overlooked.

The chair of one environmental organization was equally forthright: “From our perspective in the past few years, despite very fine words — and I applaud the language in the document — we believe that it has failed.”

There is little evidence that the federal Government of the United States is committed to restoring water quality. I confess I know less about the commitment of the Government of Canada. There is little evidence that business and industry are responding to legacy contamination and that citizens are better educated to the impact of wetlands on water quality and the government more prepared to protect them.

Another environmental organization was also concerned:

I think the lack of progress on the most key principle, which is virtual elimination in the Great Lakes, is the major failure of the Agreement. In fact, we pioneered this principle in the Great Lakes, and other regions have taken it and run with it and integrated it into their programs, like the REACH program in Europe [European Union regulatory framework for the Registration, Evaluation and Authorization of Chemicals] that requires the substitution of safer chemicals for ones known to be harmful. And we have virtually eliminated virtual elimination. We’ve made very little progress on getting rid of chemicals that we know are in the Great Lakes, but also on the 20,000 chemicals that are added each year to our environment.

Some, however, were more tempered in their remarks about the effectiveness of the Agreement. “I can’t think of any rivers that have caught fire in my lifetime,” said one outdoors enthusiast. “I have actually canoed on the upper Cuyahoga, which is the one that caught fire, and it was quite lovely. But tern species going extinct, continuing problems, unknowns going into the future — I would say that the Agreement is succeeding, not succeeded.”

Lack of Progress in Restoring Areas of Concern (AOCs)

Regarding the topic of effectiveness, Remedial Action Plans attracted the most attention and were often used as examples of shortcomings in Agreement implementation: “They were probably the source of greatest hope for visible, tangible improvement on an AOC-by-AOC level,” said one retired government official who is still

active in environmental issues. “Over 15 years later, with no delistings on the U.S. side and only two on the Canadian side, there is much disappointment.”

Many questions were raised in connection with Remedial Action Plans (RAPs). “Is the concept of RAPs fundamentally flawed?” asked one participant. “Did we not invest enough money? Were they not high priority enough? Did they not fit with other programs? Did we not manage them effectively enough? Were the local government people not involved enough?” Overall, insufficient funding, bureaucratization, inadequate or ineffective public participation, and a lack of accountability provisions were the factors most often cited in the public meetings, during the Web dialogue and in written submissions:

My view is that the RAPs and AOCs have evolved from being initially effective to now being bogged down in bureaucracy. There is this plan and that plan, and this evaluation and that evaluation — meanwhile, there are no water, sediment, fish tissue and aviary samples for literally the past ten years.

Virtually every time a study showed impairment due to pollution, habitat loss, beach closings, etc., the person responsible for the impairment would ask for another study to delay remediation or try to shift the responsibility onto someone else. What do the citizens of both countries have to show for all of this? Millions of taxpayer dollars wasted, millions of cubic feet of polluted water still flowing ... and acres of our precious wetlands are still being turned into developments.

The underlying cause is money. Governments cannot allocate the large sums needed for remediation over long enough periods to assign competent people to the task at hand. Many individuals must participate in too many programs to ensure some will be funded. They spend too much time seeking partners and funding. Too much worrying, submitting projects, sharing resources, report presentations, etc. In our RAP, it took forever to decide whether to dredge, then where to dredge to what concentration, and then how to dredge, only to decide not to dredge. Citizen input in the process has dwindled and coordinators want volunteers to keep up with

the paper work. Public and political awareness of priorities for what needs to be done is lost. While some projects muddle along, they are picked up because they have some interest. Others, that may benefit the water more, go unaddressed — especially in the core urban areas where the political will is tough to come by.

Overall, there was widespread frustration that progress in remediation has been slow, that problems apparent when the 1987 Protocol was put in place continue to persist. “We’ve been to dozens if not hundreds of meetings on the Fox River cleanup, and yet the process is just dragging along, dragging,” said one participant. Others spoke in a similar vein with respect to Areas of Concern in general: “We need action on this. We need a sense of urgency from the IJC, from the U.S. federal Government, from the Government in Canada, pushing for these sites to be cleaned up.”

A general view, too, was that a number of important issues have not been addressed. Many of them were proposed for inclusion in a revised Agreement (see section below on Scope), but they were also cited as evidence that the Agreement has not been nearly as effective as it could have been.

Effectiveness of the International Joint Commission

In similar fashion, some of the criticisms expressed during the public meetings, and in the Web dialogue as well, were directed at the Commission. One participant, making a point that was shared by others, noted that the 1987 Protocol gives the Commission responsibilities to review and evaluate progress under the Agreement:

The Commission must take seriously this responsibility to review and evaluate. It should not be simply viewed as a general responsibility to review and comment. To be effective, review and evaluation must be rigorous, quantitative, measurable, accountable, relevant, well-grounded in practical experience and value-added ... In essence, the Commission needs to fulfill its role and responsibility like the U.S. Government Accountability Office fulfills its role and responsibility.

Comments were also made about the potential for the Commission to be more active in implementing the Agreement. “For example,” one wrote during the Web dialogue, “the Commission could assist the Governments on Remedial Action Plan and Lakewide Management Plan issues (e.g., delisting targets, best management practices, sediment remediation technologies, habitat rehabilitation techniques, benefits assessment, etc.) and help measure and celebrate progress.” This individual argued that the Agreement makes the Commission a legitimate leader in the Great Lakes basin ecosystem and that the Governments welcome its assistance and advice. “Therefore,” he concluded, “the Commission must clearly assume with more vigor the important role that they have been given for RAPs and LaMPs.”

Failure to Act and Anticipate

Many people pointed to those responsible for implementing the Agreement, not to the Agreement itself, in order to explain failures or shortcomings. “Overall, the present language of the Agreement very clearly tells us what we need to do,” said one participant. “The Agreement can be looked at as tools, and the tools will help the artist to excel, but you can’t blame the tools for the failure of the artist.”

A member of a binational organization that was participating in a study of Remedial Action Plan achievements reported a finding that Governments are generally blamed for shortcomings: “A theme that’s really come out very quickly already is people saying to us that a major part of why the implementation of the Agreement goes up and down is the failure of the Governments to consistently support the process.”

The spokesperson for an environmental group agreed with this assessment: “I think the failures of the Governments to act on the goals and on the recommendations that the IJC has made are key, and also the diminishment of public involvement over time.”

In another part of the basin, a union representative took the same position: “For the most part, it’s still a fantastic Agreement. What we need, however, is a commitment on behalf of the Canadian and American Governments to be serious about implementing the Agreement.”

Many participants proffered government decisions at all levels as examples of what they described as diminishing commitment to the Agreement’s call for zero discharge and virtual elimination of persistent toxic substances³:

Just recently, we learned of a permit issued to one of our local paper mills that allows a 10,000 pound increase in their discharge of phosphorous and an increase in their mercury releases. And it is being permitted! This is clear degradation. We’re moving in the wrong direction with some of these permits and we need to stop it.

Zero discharge is not happening. And, with that, enforcement is not taking place.

We need to reinforce and reemphasize the Agreement’s call for zero discharge of toxic substances or the virtual elimination of [persistent] toxic problems in the Great Lakes.

At least in the case of the U.S., we’re going backwards. A 2003 report by the Associated Press found that three-quarters of the nation’s largest 6,500 industrial and sewer plants violated their permits with little fear of punishment. The result for the Great Lakes, according to state and federal agencies, is a six-year increase in toxic water pollution.

Despite a Congressional request for a mercury control strategy in 1990, no strategy is forthcoming. Mercury ... plagues both the Great Lakes and Michigan’s inland lakes, with fish consumption advisories existing in every location.

I’d like to encourage you and to urge you to push forward to continue in advancing zero discharge goals, both by reviewing old strategies to see what has worked and will continue to work,

³ Article II of the Great Lakes Water Quality Agreement states it is the policy of the Governments that: “The discharge of toxic substances in toxic amounts be prohibited and the discharge of any or all persistent toxic substances be virtually eliminated.” Annex 12 states that: “The philosophy adopted for control of inputs of persistent toxic substances shall be zero discharge.”

and to look and see what hasn't worked and what needs to be reinvigorated or new strategies developed. The calling for zero discharge cannot be weakened in any way.

Echoing a theme heard from many participants, the executive director of a large regional environmental group said that the Agreement needs to be preventative of future problems, not just reactive to existing ones. "For example, we knew that the zebra mussel was about ready to enter the Great Lakes long before it ever did. There's no reason that we couldn't have and shouldn't have stopped that threat, which we now know is costing probably hundreds of millions of dollars to us as taxpayers."

In fact, the presence of invasive species was the most frequent example of the Agreement's failure to anticipate and respond to threats:

The biological integrity of the Great Lakes Basin Ecosystem is under siege of 'terrorist' invasive species that the Agreement was supposed to prevent, and all levels of government are responsible. ... International ships with invasive species-contaminated ballast water should have been prevented from entering our Great Lakes water system by being forced to unload their cargoes at a 'sea' port. ... The Water Quality Agreement lacks proactive, enforceable regulations that could be used to prevent future invasions.

Zebra mussels were first documented in the Great Lakes in 1987, and yet we are still haggling over how to comprehensively prevent future invasions.

For the most part, responsibility for the Agreement's failures was seen to rest with governments, especially the two federal Governments. However, many people also pointed to the other levels of government as well.

A common view was that shortfalls in progress can be attributed, in part, to a lack of accountability provisions in the Agreement, such as timelines, milestones, deadlines and responsibilities and other ways to measure performance: "The Great Lakes Water Quality Agreement offers tremendous potential in serving as a blue print or a roadmap for the long-term protection and restoration of this vital, vulnerable and irreplaceable resource," wrote

one participant in the Web dialogue. "But it can only meet its full potential if it includes stronger mechanisms for accountability and enforcement, which can help keep progress moving through changes in political administrations and the ebb and flow of public and political will." Many others agreed with this assessment. "First, it [the Agreement] can and should include very specific goals, objectives and timelines, and it should be clear about which entity is responsible for implementing the various pieces of the Agreement," wrote another participant in the Web dialogue. "That would enable the IJC to be more specific in measuring the progress of the U.S. and Canada in implementing the Agreement and holding them accountable." Enforcement rules, mechanisms to sue the federal Governments, and more transparency to and engagement of the public were among the provisions recommended for inclusion in a revised Agreement. So was including deadlines for eliminating municipal and industrial pollution in Articles VI of the Agreement.

Other Suggestions

Other proposals were put forward for increasing the effectiveness of the Agreement, often from technical experts. For example, the head of a municipal water division suggested that a modified or revised Agreement could contain the Hazard Analysis and Critical Control Points (HACCP) approach used in food and drug manufacturing. "HACCP manages biological, physical and chemical risks, and permits defining environmental, health and esthetical impacts," he noted.

Another suggestion came from someone who recalled the reference to "Compatible Regulations" in Article I(e) of the Agreement⁴ and said this defined a principle that should be applied to other relevant agreements and environmental regulations: "To ensure that compatible and consistent approaches to environmental effectiveness occur across the basin, GLNPO [U.S. EPA's Great Lakes National Program Office] should certify all sections of the *Water Resources Development Act* for the Great Lakes in compliance with Annex 2 of the Great Lakes Water

⁴ Article I(e) of the Great Lakes Water Quality Agreement states: "Compatible regulations' means regulations no less restrictive than the agreed principles set out in this Agreement."

Quality Agreement⁵ and the principle of ‘Compatible Regulations’ under the *Coastal Zone Management Act*.”

Updating the list of Areas of Concern was also proposed by some participants, who felt that the Agreement is too rigid and, hence, does not facilitate funding for other areas that require action. For example:

⁵ Annex 2 of the Great Lakes Water Quality Agreement defines Remedial Action Plans and Lakewide Management Plans.

I’d like to see the Great Lakes Water Quality Agreement with at least some flexibility in the future to look not only at issues of concern and objectives, setting objectives, but also Areas of Concern that may be changing, so that we don’t have necessarily a situation where there’s funding being channeled to one Area of Concern and then we somehow remediate that, and then we see, just further up the road, that we’re emerging with a new Area of Concern but it can’t be addressed through the Great Lakes Water Quality Agreement.



Scope

Participants were asked whether they thought that the Agreement deals with everything it should, and three questions were used to probe for responses:

- Are the purpose and scope of the Agreement appropriate for 2006 and beyond? If not, how should they be expanded or limited in a revised Agreement?
- Are parts of the Agreement out of date? If so, what are they and should they be revised or deleted?
- Does the Agreement address all critical issues? If not, what is missing and what are the most important two or three of these?

Framing the Issue

One expert, a retired senior government official, recalled that the general purpose of the Agreement is “to restore and maintain the chemical, physical and biological integrity of the waters of the Great Lakes Basin Ecosystem” (Article II) and he framed the issue of scope as follows:

Although not an official vision for the future of the resource, it [the purpose] seemed to be something that people could remember and work toward in their day-to-day activities. In hindsight, it is a bit narrow and stovepipe in its approach. ... Perhaps now is the time to articulate a better vision for the future. Do we need to consider such things as the full ecosystem rather than just water quality? Do we need to look at the St. Lawrence River as well? Perhaps we should consider the economic and social aspects that flow from the resource. The original version served us well for the first 20 years, but it is time to move on.

Participants expressed widely divergent views on whether the Agreement should deal with more than it does today and three streams of thought emerged: (1) those who want no expansion of the Agreement but, rather, an intensified effort toward implementing the current one; (2) those who appear to support an expansion,

albeit somewhat hesitantly; and (3) those who are enthusiastic about adding to the Agreement. By and large, the second and third categories outweighed the first.

One binational environmental group put it, “The review should not be so broad in its intent as to be looking at scrapping the Agreement or doing a wholesale rewrite and renegotiation of it. But it should also be seen as more than a simple tinkering exercise.” This organization also urged that the focus of the Agreement not be changed:

The Agreement should remain as the Great Lakes Water Quality Agreement. It should not be changed to the “sustainability” agreement or some other intent that strives to solve all the problems in the Great Lakes and St. Lawrence River basin. The focus of the Agreement should remain on water quality. With the understanding that we have developed over the past decades, we may find that we need to add additional topics to the Agreement (probably through annexes) in order to more adequately address water quality problems. This includes topics such as climate change impacts, urban development, invasive species, etc. But they should always be looked at from the perspective of impact on quality.

A retired government scientist, with many years of experience in the basin, articulated reasons, which were shared by others, for not expanding the current scope of the Agreement:

The Governments have never been able to find sufficient funding to address Great Lakes water quality, let alone the ecosystem or the watershed. If we are not careful, we will find ourselves with an Agreement whose mandate is so large that it will be meaningless, nothing more than ‘motherhood and apple pie.’ We will not have the personnel, science, knowledge, wisdom or political will to do anything but talk. I do not believe that the citizens of the basin want that. Nor do I believe it is what responsible stewardship entails.

Among other participants, outright opposition to a broader scope gave way to hesitant support — with the caveat that the Agreement not become too broad. This position was well expressed by a member of a binational environmental group:

Specifically on whether or not and how the Agreement should be reviewed, the NGO community is in discussions right now to figure out how to advise you in more detail on how that should happen. We are in concert, in unity together saying that ‘Yes, the Agreement must remain a vital, crucial force in the region, it must be revived and it must be invigorated.’ But there are concerns that if the review is too broad, it could weaken the Agreement, or milestones and timelines could be lost, or the rewriting and the renegotiation could take a very lengthy amount of time. But there is also concern that because of so many of the emerging issues, such as invasive species, that we shouldn’t just keep it restricted to the scope that it was originally founded on.

Another group stated its case as follows:

We, as an organization, have opposed changing the Agreement in the past. ... We’re not strongly opposed to it today, and I think there are many good arguments that can be made. We could use this opportunity to re-invigorate and re-elevate the prominence of the IJC and its role in the region and the Agreement as an important part of the institutional fabric we have to protect and restore the Great Lakes.

In a public meeting, the city’s mayor argued for expansion: “The Agreement should take a full ecosystem approach and not be limited to water quality. Invasive species, water levels, water diversions and other issues are of great importance to the future integrity of the resource and should be recognized in the Agreement.”

The regional coordinator of a binational environmental group also supported expansion, noting that, in addition to some persistent problems, new ones have emerged such as invasive species, climate change and urban development: “We have reached a point where we have to wonder about the integration of all this into the Agreement.”

Many other people — from environmentalists to ordinary citizens — made similar comments:

The review of the Great Lakes Water Quality Agreement affords an excellent opportunity to update the list of problems that must be taken into account in the management of the Great Lakes basin.

Does the Agreement cover everything it should? No, we don’t believe it does.

The Water Quality Agreement should be revitalized, as it can and should reflect how far we have come in understanding the science of water quality issues and how much our new understanding tells us about what we don’t know and, lastly, what this means in the context of our Great Lakes experience over the last century.

The list of additional issues proposed for inclusion in the Agreement was fairly extensive, and best summarized by a county executive who made the following intervention:

[We recommend] that any update to the Agreement recognizes the serious threat from biological pollution by invasive species and takes a much stronger position on control of existing invasive species and prevention of further introduction; includes a greater focus on processes occurring in the near-to-shore areas of the lakes that are causing continued problems with eutrophication and growth of nuisance algae; develops some method of addressing atmospheric transport from outside the Great Lakes basin as a serious source of contaminants and recognizes the difficulty presented to localities when expectations for remediating these substances are placed at the local level; continues in its strong support for remedial actions both within the Areas of Concern and within the Lakes proper; and incorporates greater emphasis on the impact of the contributing watersheds of the Lakes into the language of the Agreement.

Others, however, worried that, as a result of the review, the Agreement would be revised to encompass too much. “I think we need some criteria for deciding what

the scope of the Great Lakes Water Quality Agreement should be,” said one participant during the Web dialogue. “The Great Lakes Water Quality Agreement cannot be everything for everyone.” Since the Agreement is based on the Boundary Waters Treaty, this person’s criteria for inclusion included scale (transboundary aspect, not local nature), injury (potential for injury to health and property) and water quality (water pollutants):

[The] enabling legislation is water-focused, pollution-focused and injury-focused, whether we like it or not. The upshot is that any revisions in the language [of the Agreement] must respect the constitutional powers and abilities of the Governments to implement and deliver the Agreement. If you couch the Agreement in vague, ambitious terms that involve needed actions that are not within the powers of the Governments, the federal Governments, then you will, in fact, kneecap the Agreement. If you couch the Agreement in terms that the Governments cannot deliver, then the Agreement will fail.”

This cautionary note was explicitly sounded in connection with proposals to have the Agreement take more of an ecosystem approach than it does at present:

The ecosystem concept is already in the Agreement. To call it a Great Lakes Ecosystem Management Agreement is to use language that has an inherent imprecision of meaning. ... People know clearly what water is, but not many understand with any corresponding clarity what an ecosystem is. The Governments have clear jurisdiction over transboundary waters, but certainly not over the ecosystem, which is in essence everything. A similar critical view can be applied to the ideal of a sustainability agreement. Again, with a lot of discussion and debate, it’s another vague and ambitious concept that’s a buzzword. We don’t have any agreement on what sustainability means. The Governments don’t have jurisdiction over Great Lakes sustainability. The jurisdictional issues are Byzantine, as are the policy disconnections, contrary to any notion of sustainability.

Dealing with Aquatic Invasive Species

The problem of aquatic invasive species was the subject of widespread concern and the issue most often proposed for inclusion in the Agreement by those who supported broadening its scope:

One of the main reasons for including the issue of aquatic invasive species in the Great Lakes Water Quality Agreement is because they are the most significant threat to biodiversity.

Non-indigenous species are a severe threat to biodiversity and ecological integrity and every possible measure should be taken to stop the introduction of new species or at least reduce the introduction rate, which is about one new species every seven to eight months. Nowadays, very little is done to protect our systems from non-indigenous species. This has to change.

I argue that AIS [aquatic invasive species] cover a broad spectrum of taxonomic groups (mussels, Eurasian water milfoil, spiny water flea) and that prevention and control should be part of the Great Lakes Water Quality Agreement. Many utilities spend millions of dollars to combat zebra and quagga mussel infestations, which clog water intake valves. Also, beds of Eurasian water milfoil clog recreational waterways, requiring either mechanical removal or chemical treatment.

However, there were some dissenting voices. One, for example, insisted that the Agreement is not the appropriate vehicle for addressing the problem. “Most of the damage from the inadvertent introduction of exotic species seems to be to fisheries resources,” he wrote during the Web dialogue, and continued:

The Great Lakes Fishery Convention is a well-established existing bilateral instrument that could be used to address these threats to fisheries. The Great Lakes Fishery Commission could take on the full responsibility for protecting the fisheries from exotic species introductions. Surely, this is where the biodiversity responsibility lies and not with trying to reframe the Great Lakes Water Quality Agreement.

Another participant, who works in the shipping industry, reported reading that 20,000 new species of animals were discovered around the world last year alone: “I would suggest the researchers are finding one new species every eight months in the Great Lakes not because new species are continually arriving, but because researchers are looking for them more diligently than ever before and finding species that may have been here for a long time,” he said.

Overwhelmingly, though, the view was that the issue of invasive species should be addressed by a separate Annex to the Agreement. There were also many who argued that the scope of the Agreement should include terrestrial invasive species as well as aquatics. And one expert in a Coast Guard advised: “If AIS is to be included in the Great Lakes Water Quality Agreement, all vectors and pathways [not just ballast water] should be discussed (aquaculture, pet industry, etc.) for inclusion.”

Measures related to ocean-going ships in the Great Lakes were often suggested as a way to address aquatic invasive species, given the linkage between their discharge of ballast water and the introduction of exotic species. The ideas ranged from more regulations and control technologies to using market forces to change shipping practices:

Invasive species ... invasions could be minimized by the exchange of ballast water prior to ships entering the Great Lakes basin. ... The Agreement should require that federal Governments will put in place laws requiring compliance and take steps to monitor same.

As you consider the Great Lakes Water Quality Agreement, I would urge that there be careful consideration to ... what can be done to control additional introduction of invasive species ... We really have to look very carefully at additional control measures on ocean shipping. Now that may involve ballast water treatment. That does not deal, however, with ship ... hull fouling that can result in invasives coming in. There are a number of measures that can be taken [such as fines for ballast water discharges].

There is just a very, very marginal benefit for most companies using ocean shipping into the Lakes.

So market forces might well result in most ocean shipping into the Lakes ending if the industry was liable for any damages resulting from those invasives. If they were, you know, subject to fines for biological pollutants, there's a good chance that much of the ocean shipping would end.

A marketing and transportation expert advised looking at whether it makes sense to continue to have ocean ships come into the Great Lakes: “Is the benefit of ocean shipping in the Lakes worth the cost?” he asked, stating that it accounts for less than seven per cent of total tonnage moving on the Great Lakes in a given year and that annual transportation cost savings to manufacturers, retailers and others on the U.S. and Canadian sides of the basin amounts to just \$55 million.

Some questioned completeness of this economic estimate associated with ocean-going shipping in the Great Lakes. Another transportation expert put it this way during the Web dialogue:

I would cautiously suggest an examination of actual feasibility — and examine it in the context of other modes. At the present time the railroads (both U.S. and Canadian) are already at capacity in that corridor, and while they would gladly move the cargo, they would be looking at governments to foot the bill for infrastructure improvements needed — at considerably more than \$55 million. The trucks are at over capacity. The cargo moved is predominantly steel, which is going to the steel mills around the Great Lakes, of which only two of 16 are not in some form of financial difficulty. The outgoing cargo is predominantly grain, which is moving at increased levels [on the Great Lakes] because of the hurricane-induced problems

Others cautioned against taking action that might have unintended trade and economic consequences. It was noted that the sea lamprey — the first exotic known to have taken up residence in the Great Lakes — was discovered in Lake Ontario in the 1830s, at about the time the Erie Canal first connected Lake Erie to the Hudson River, and that the Welland Canal and Lake Michigan Diversion at Chicago opened other potential conduits to the Great Lakes for invasive species. All this was long before the St. Lawrence Seaway opened in 1959:

“My point is that the problem we confront started a long time ago. ... Closing the Welland Canal [now] would not eradicate the zebra mussel or the spiny water flea or the round goby, nor would it serve any other useful purpose. I suspect that whatever environmental peril was invited by the opening of the Great Lakes to the rest of the world’s commercial waterways, the peril is already an irrevocable fait accompli. In retrospect, the decision to build the St. Lawrence Seaway and its predecessors may well have been environmentally unsound, but to close it now would be economically unsound and quite probably environmentally irrelevant. ... One can hardly evaluate the costs and benefits of closing the Great Lakes to foreign shipping without addressing the larger question of whether foreign trade per se is beneficial or harmful.

Including the St. Lawrence River

In Quebec, not surprisingly, there were calls for the St. Lawrence River, downstream of the international boundary at Cornwall, Ontario and Massena, New York, to be included in the Agreement. Even in Quebec City, 500 kilometres from the Great Lakes, the view was that the region was an integral part of the larger Great Lakes–St. Lawrence River system. As one elected official put it: “These two entities [the Great Lakes and the St. Lawrence River] constitute one and the same ecosystem, one and the same ecological unit, completely indivisible. We think that they must be dealt with together.”

The ecosystem perspective was the general rationale for including the St. Lawrence River, and calls to do this came from outside Quebec as well, including from various locations in the United States:

The Agreement should be revised to include the Great Lakes and the St. Lawrence River to ensure a full ecosystem approach. There is no way to separate these two connected waterways. The water quality and quantity of the Great Lakes is the water quality and quantity of the St. Lawrence. The problems and solutions must be considered for the entire system.

To ensure that the ecosystem approach is taken, we do need to look not just in the Great Lakes basin but also into the St. Lawrence River ecosystem as well, and whether or not the Agreement needs to have a greater impact downstream, as well as assessing threats that are coming into the basin, such as air pollution and global warming.

In addition to the ecosystem perspective, pragmatic arguments were made based exclusively on water quality issues: “Some studies indicate that the Great Lakes account for between 33 and 40 per cent of the pollutants in the Saint Lawrence,” said one participant who called the river the spillway of the Great Lakes. “As a result, everything that is done there or that isn’t done there has an impact on the river.” Many people echoed these comments:

The Agreement needs to go beyond old borders. As an example, persistent contaminants introduced in the Lake Superior watershed near Duluth or Thunder Bay will pass through the different lakes, come in the St. Lawrence River, pass the old border of the Agreement near Massena and Cornwall, and end up in the St. Lawrence Estuary and Gulf of St. Lawrence. The same holds true for nutrients causing eutrophication in the St. Lawrence. ... Everything done in the Great Lakes has an effect on the functioning of the downstream waters. Therefore, these downstream waters should be (in one way or another) included in the Agreement.

Every day, thousands of residents [of our area] drink water that comes from the St. Lawrence. Similarly, many demand access to beaches that are safe for swimming. All this underscores the need for an improvement in the quality of the water of the Great Lakes, especially through a revision in the Canada-U.S. accord [Great Lakes Water Quality Agreement].

Invasive species were cited as an example of why management of the Great Lakes and St. Lawrence River basins needs to be better integrated: “Invasive species, introduced by accident or deliberately, impact equally on aquatic life in the St. Lawrence and the Great Lakes.... Many of these species migrate toward Quebec; other species, introduced into the St. Lawrence, make their way to the Great Lakes.”

A program manager for a regional environmental group in Quebec looked to the IJC to help bring groups together in the two areas: “We would very much like that you had a capacity to establish a network of AOCs, LaMPs, RAPs, the ZIP (*zone d’intervention prioritaire*) committees in Quebec and the conservation authorities; this would give us the ability to exchange [information] and provide a better integration of upstream and downstream environmental forces.”

Other Issues Proposed for Inclusion

One environmental organization prepared a detailed review of issues and identified their top three priorities: an annex to deal with pharmaceuticals and endocrine disruptors (see discussion of emerging chemicals below); a specific annex to address the threat posed by road salts (see below); and the addition of a public petition mechanism on the effectiveness and implementation of the Agreement.

Emerging Chemicals

Pharmaceuticals and endocrine disruptors attracted a lot of attention, especially on the Web dialogue, and gave rise to suggestions that a new Annex be devoted to these. “But,” asked one participant, “why limit it to just pharmaceuticals? There is a whole host of chemicals that enter the Great Lakes through our municipal sewage systems.” Provisions to deal with new chemicals were also proposed for inclusion:

The Agreement must address emerging chemical threats to the Great Lakes in a preventative way. This need is urgent, as certain emerging chemical threats have already been shown to adversely affect wildlife, and we still know little about synergistic, additive or interactive effects of legacy and emerging contaminants. High production volume flame retardants such as decabrominated diphenyl ethers and halogenated flame retardants, perfluorinated compounds, certain pharmaceuticals and personal care products are some examples of relatively newer and known contaminants and chemical threats to Great Lakes water quality.

There are many, many new chemicals of concern that regular, routine environmental tests aren’t even available for. These chemicals need to be addressed in a process. Because there are so many chemicals coming out and so many new substances being created, it is requested that, over the long term, there be a process to deal with emerging synthetic chemicals of concern and that this be represented in the revised Agreement.

Proposed strategies for addressing issues related to emerging chemicals included updating the beneficial use impairments section in Annex 2 of the Agreement by replacing what are perceived as less important issues [such as taste and odor problems in drinking water] with “more significant issues, such as endocrine-disrupting chemicals and other contaminants of emerging concern.” Others proposed a variety of initiatives, including take back and disposal programs for pharmaceuticals, improved treatment of domestic sewage and management of biosolids, better treatment and management of livestock waste and regulation of select contaminants.

Precautionary Principle

The precautionary principle⁶ was widely endorsed as an operating principle of the Agreement: “If there is one element that could stand to be improved,” one participant advised, “I would think it would be the incorporation of this [the precautionary principle] into the Agreement, this whole concept and not just as it relates to toxic pollutants, but as it relates to the protection of streams and watersheds.” Or another: “The specific thing that I would like to encourage the IJC to do is to consider incorporating the precautionary principle into the ecosystem approach if you do open up the Agreement for revision.”

⁶ A popular definition of the precautionary principle was articulated in a consensus statement from a January 1998 conference organized by the Science and Environmental Health Network and others in Racine, Wisconsin: “When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause-and-effect relationships are not fully established scientifically. In this context the proponent of an activity, rather than the public, should bear the burden of proof.”

An attorney and scientist from an environmental organization suggested that greater international collaboration might be one approach to implementing a precautionary approach in the management of persistent toxic substances:

“It is neither efficient nor effective to have two similar countries conducting separate assessments if the same scientific principles are being used. Greater collaboration and cooperation is needed to quickly assess the ever-growing list of potential chemical risks to ecosystems like the Great Lakes. With respect to the Great Lakes Water Quality Agreement, it is recommended that the Governments collaborate on research into chemical risks and take a precautionary approach to management of substances in the absence of complete assessments. ... Until the time when an assessment of a substance is complete, the Governments should adapt the assessment of another comparable jurisdiction, such as another OECD [Organization for Economic Cooperation and Development] country.”

Others talked about the idea behind the precautionary principle, even if they did not cite it specifically: “We should be assuming that chemicals are guilty and preventing their release until we fully understand their effect,” said one person. “We should be testing for the full range of possible effects — immune system, reproduction, cancer, all of the possible health effects — before they are allowed in any discharges to the system.”

Consistency with Other Agreements

A number of participants pointed to the number of important developments in international and other environmental agreements since the Great Lakes Water Quality Agreement was last reviewed. “At the least,” one wrote during the Web dialogue, “it ought to be revised to make explicit reference to and to be made consistent with leading ones such as the Rio declaration, the Biodiversity and Climate Change Conventions, the Stockholm Convention on POPs [persistent organic pollutants], UNECE [United Nations Economic Commission for Europe] Long Range Transboundary Air Pollution Agreement, the Aarhus Convention on Public Participation, as well as others.”

Incorporating a reference to the Climate Change Convention into the Agreement, for example, was seen as facilitating basinwide action to address climate change. As another participant put it, “In our view, changes in water levels and water quality that climate change will eventually entail need to be part of the analysis undertaken by the International Joint Commission.”

Another proposal for making the Agreement consistent with other agreements was to incorporate into it such principles as the precautionary principle, the polluter pays principle and the principle of public participation in decision-making. Specific instruments have been designed to give effect to these principles. All this, it was suggested, would make the Agreement “more effective and consistent with global developments.”

In addition to international agreements, it was proposed that the Agreement make reference to and be made consistent with other developments in the Great Lakes basin and other organizations such as the Commission on Environmental Cooperation, the Great Lakes Fishery Commission, the Great Lakes Commission and the Council of Great Lakes Governors.

Road Salts

Two organizations recommended that a specific annex be added to the Agreement to address the threat from the application of road salts. Findings from a five-year study by Environment Canada and Health Canada were cited that road salts are harming the environment and biological diversity, and that they should be considered toxic under the Canadian Environmental Protection Act. It was noted that once chloride is in our water, it can only be diluted and not removed. Therefore, the use of road salts should be minimized and alternative practices and substances used to maintain road safety. It was proposed that the annex include strategies to review best management practices, the regulatory context, thresholds for loadings of chlorides and sodium, and to establish monitoring and reporting that will ensure a consistent basinwide approach over time.

Land Use

Specific standards to encourage better land-use planning practices were suggested for inclusion in a revised

Agreement. One expert put it this way:

It might be possible to incorporate into the Agreement some specific objectives for land use best practices. For example, the Center for Watershed Protection has demonstrated unequivocally that irreversible ecosystem damage occurs within urban river systems when land cover is more than 20 percent impervious surfaces. There appears to be a very solid scientific basis for this, so I wonder whether we might incorporate something into the Agreement that says, for example, that “impervious surfaces should not exceed 20 percent of the land surface in any watershed within the Great Lakes basin. . . . Recent work by the Great Lakes Science Advisory Board suggests that we can also be explicit about the kinds of activities allowed in headwater reaches and groundwater recharge zones versus other parts of a watershed.

One watershed council said that an improved understanding of the relationship between urbanization, water and environmental quality is critical:

It is important to do this because urbanization as a multi-faceted phenomenon appears to be rapidly outstripping the capacity of our institutional forms of governance to manage it in a sustainable manner to protect vital ecological values. Much of our ecological and socio-economic future in the Great Lakes basin is tied to how well public and private institutions can manage the urbanization process.

The council urged implementation of the Commission’s recommendations for urban growth management as outlined in the Commission’s *Twelfth Biennial Report*.

Mercury Emissions

Numerous participants in the public meetings, Web dialogue and written comment process expressed concern about the human health effects from the consumption of mercury-contaminated fish. As one environmental group noted: “Overall, mercury emissions to the environment have dropped in recent years. While this is good news, one important source continues to increase: emissions

from coal-fired power plants.” Several people recommended that a specific annex to the Agreement deal with mercury pollution from coal-fired power plants.

Groundwater

Meeting participants noted that, since the Agreement deals primarily with the surface waters of the Great Lakes and the tributaries to them, groundwater, which is addressed in Annex 16 of the Agreement, has generally been ignored. They suggested that both groundwater quality and quantity need to be included in a revised agreement. “Aquifers are being pumped dry and ponds have dried up,” “groundwater flows are a concern in the Lake Simcoe region because of their direct connection to the lake,” “many of these aquifers discharge directly into streams, lakes and other such areas, so if they were contaminated it would get into the water sources,” “aquifers are being depleted and mined so Lake Michigan is under threat of reduced water quantity and Climate change will just make it worse,” and, “any Annex 2001 diversions to replace groundwater with Lake Michigan water should be under the control of the Commission” were typical of the comments heard during the Great Lakes Water Quality Agreement Review meetings.

Monitoring

Many participants spoke about the need to improve monitoring (see section on Expectations above). It was noted that the Agreement creates an important surveillance and monitoring program, but that this relies heavily on information provided by the Governments. It was recommended that the Annex 11 be updated to explicitly empower the Commission to collect independent data and encourage the public to participate in a surveillance, monitoring and reporting program.

Sewage

In a similar vein, many participants identified issues or products that should be taken into account by the Agreement: “It absolutely surprises me that in the Water Quality Agreement, there’s a list of a couple of hundred chemicals that are dangerous, but sewage and manure are not in there — nowhere.”

The head of a watershed organization suggested that the Governments commit to making needed investments in wastewater treatment as they review the Agreement:

Accordingly, we urge the Governments to refocus their efforts on the control of pollution from municipal sources to the Great Lakes with particular emphasis on addressing combined and storm sewer overflow problems in a renewed Agreement. It is clear that a major funding effort is required to bridge the growing gap in wastewater infrastructure investment and to accelerate the clean-up of long-standing pollution problems in urban areas throughout the basin and especially in Areas of Concern.

Further reductions in phosphorus loadings and measures to reduce the influx of nitrates, including from atmospheric deposition and subsequent runoff caused by emissions of nitrous oxides from fossil-fuel burning sources were also recommended by an environmental organization.

Lake Simcoe

A Canadian Member of Parliament asked that the Commission recommend that Lake Simcoe be designated as an Area of Concern: “My request to you today is to exercise that jurisdiction and recognize the critical environmental needs of one of the largest bodies of water within the Great Lakes basin, a body of water that’s fully connected with the boundary waters that the Great Lakes represent, and that’s Lake Simcoe....[T]he health of Lake Simcoe is both affected by impacts from other parts of the Great Lakes basin and also has downstream impact on the Great Lakes and St. Lawrence waterway.”

Watershed Approach

The need to link local watershed plans to the Agreement was an issue that often arose. On the Web dialogue, a county official reported that there are 11 sub-watershed management plans in his county: “Although they are all within the Great Lakes Basin, they have been developed independently and devoid of any input from Great Lakes issues and initiatives. The Water Quality Agreement and Great Lakes programs and regional initiatives have not made it down to a local planning level where these watershed plans are being written It seems to me that the Agreement needs to recognize these watershed management plans and planning process.”

Other participants made similar points:

I’d like to see more explicit requirements incorporated into the updated Agreement for the development and implementation of watershed management plans. And these plans must require clear identification of major ecological issues to be addressed in the watershed, the measures to be taken to alleviate the issues, and a proposed schedule of any implementation actions.

Local processes haven’t got the scientific resource base to discover the appropriate things to do. Nor can they afford to go out and hire the talent. They need manageable reference points and technical support that they can draw on to support their processes. The Great Lakes Water Quality Agreement should support the provision of that technical support to local processes.

Natural hydrologic regimes

The natural range of variation in lake levels and tributary flows was an issue with some participants, who raised questions about the Agreement’s protection of them: “There is growing recognition of the importance of these natural flow patterns and their influence on the chemical and biological integrity of freshwater aquatic systems,” said one expert during the Web dialogue.

Another participant made a similar point: “Despite their importance to the chemical, physical and biological integrity of the Great Lakes–St. Lawrence River basin ecosystem, hydrology and watershed hydraulics are absent from the current Water Quality Agreement.” Citing a 1984 article in a scientific journal, this individual proposed a new purpose statement: “To restore and maintain the conditions of air, water, land and metabolic activities, consistent with the integrity of chemical, physical, biological, human and aesthetic elements comprising the hydrological cycle of the Great Lakes Basin Ecosystem, so to achieve their highest use.”

Wetlands

As the earlier section on expectations indicated, the preservation of wetlands was a widespread issue of concern among participants. Some translated this concern into proposals for specific language in a revised Agreement.

For example:

I would very much like to see ... wetland protection be explicitly incorporated into the Agreement in stronger language than currently exists in Annex 12, which does not mention recreational impacts (marinas, boating activities, etc.) or cottage development. I would also like to see Annex 17 strengthened to include research that deals with predicting impacts of climate change (warmer water, lower water levels, higher runoff) on wetland ecology. These Great Lakes coastal wetlands are critical habitat to fish, mammals and waterfowl, and once they're gone, they're gone.

The Agreement has to leap a hurdle in rehabilitating the Great Lakes and St. Lawrence ecosystem in a way that protects [in advance] against the effects of problems that endanger water quality. Clearly, the lakes have to be cleaned up, but we must go farther than that. This means, for example, considering the establishment of riparian zones as a means of reducing pollution brought on by runoff.

Interbasin Transfers of Water

Some concern was expressed about importations of water into the Great Lakes: "The absence of the term 'interbasin transfer' from the Agreement strongly implies that this form of replenishing the Great Lakes water is considered to be a viable option," said one participant, who felt that the only practical source would be Canada's Arctic watershed and that any such activity would be catastrophic to the region's ecosystem. "Can anyone state categorically in writing that no such diversions are or will be considered now or in the future?" A scientist was one of many people who agreed with this position:

One area that still appears to need some refinement is interbasin transfers, taking water from one Great Lake and dumping it into another Great Lake. In my mind, as a biologist, good ecosystem management would suggest that water should be returned to the point of taking, and that's something that needs to be incorporated a little further into the Agreement.

Cargo Sweeping

The practice of "cargo sweeping" from ships⁷ was said to violate the provisions of Annex 4 of the Agreement, which prohibits the discharge of oil and hazardous polluting substances from vessels. It was proposed that the Commission study the practice on the Great Lakes and issue a report clarifying how common cargo sweeping is and the ways that Canada and United States can halt it.

Aboriginal Representation

Although the Governments indicated that they would undertake direct consultations with Tribes and First Nations, a number of participants in the Commission's public meetings represented aboriginal communities. Several proposed that the Agreement contain provisions for interfacing with Tribes and First Nations, such as including Aboriginal people in planning processes, representation and public appointments.

Role of Local Governments

Not surprisingly, a number of mayors argued that cities and towns play an important role in the protection and rehabilitation of the Great Lakes and St. Lawrence River and, consequently, should be formally recognized by the Agreement. "The first recommendation I'd like to make here this evening is that the Agreement should be revised to recognize and include local governments as full partners with other governments," said one mayor, who went on to state:

Local governments must be at the same table as the federal governments of the U.S. and Canada, the province of Quebec and Ontario, and the American Great Lakes states to identify the problems and determine solutions. This is

⁷ Cargo sweeping is described in the U.S. Coast Guard's 2002 Enforcement Policy for Cargo Residues on the Great Lakes as "the incidental discharge of cargo residues, what are commonly called 'cargo sweepings,' from commercial dry cargo carriers." The Enforcement Policy "does not alter the strict prohibition of any discharge of oily waste, untreated sewage, plastics, dunnage, or other things commonly understood to be 'garbage,' from vessels on the Great Lakes."

critical because local governments are responsible for implementing many, if not most, of the solutions through everything from stormwater runoff to wastewater treatment to land use and to dealing with initiatives ... that threaten water quality in our area. Local governments also effectively and directly communicate with and engage communities about issues like water conservation and invasive species. It is only through full partnership with local governments that Great Lakes policies and programs can attain the desired results on the ground and in the water.

This recommendation was also made in a written submission by the Great Lakes and St. Lawrence Cities Initiative, representing mayors and other local officials across the basin in both countries.

Agreement Institutions

Others commented on the need to review the structure and functions of the Commission's Agreement boards. As one former government official suggested:

The chairs of the Water Quality Board are from Environment Canada and the U.S. Environmental Protection Agency and the remainder of the board is populated with government officials. Hence, the Water Quality Board members are charged with reviewing the programs and policies of themselves. It is an objectionable paradox that must be addressed during the review of Article VIII.

This participant also pointed out that the charge to the Commission under Article VII to "assist in the implementation of the Agreement" is an important role, but its definition is vague. "The Governments must make clear the meaning and expectations embodied in Articles VII and VIII so that the Commission's actions regarding the bilateral institutions and the [Great Lakes] Regional Office satisfy the expressed requirements of the Governments through these articles."

Radionuclides

Several participants commented on the need for stronger provisions in the Agreement to address the release of radionuclides, such as updating the limits on radioactivity in drinking water in Annex 1, reassessing environmental monitoring at nuclear facilities as recommended by the Commission's 1997 Nuclear Task Force Report, and the management of nuclear wastes. One written submission stated that, due to the porous nature of the limestone formations in southern Ontario, the potential underground disposal of high-level waste in the Lake Huron coastal zone could be one of the most critical issues for the long-term quality of Lake Huron and the lower Great Lakes. Another pointed out that little has been done to establish the programs called for in Article VI regarding the discharge of radioactive materials into the Great Lakes system.



Public Engagement

Participants were asked whether people are aware of or involved in the Agreement, and three questions were used to probe for responses:

- Is the public sufficiently informed about programs and progress to achieve the goals of the Agreement? What approaches worked well and what other techniques could be used?
- Has the public been involved in developing the Agreement's goals and actions? Are there ways to improve the situation?
- Are there examples of how the public has been involved that could serve as a model in the Great Lakes–St. Lawrence River basin?

Engagement during the Agreement Review

A large number of participants expressed the hope that the public's engagement carried out by the Commission in the Spring and Fall of 2005 would continue after the Governments' review of the Agreement commences in the Spring of 2006. "The review process should ensure that there are ample opportunities for full and meaningful engagement of the public," said the leader of an environmental organization. Many presumed that any public engagement process during the review would be led by the Commission. Some suggested that citizens be given a place at the table:

We'd like also to encourage you to ensure that the public has a strong role in the development and assessment of the Agreement's review and the change therein. Perhaps citizen observers, as have been used in the 1980s, should be appointed to the review process.

The public has to have an important role to play in the development of the Agreement and the evaluation of its effectiveness. We would like citizens to be designated as observers during the

review. Precedents for this were established in the 1980s and led to the 1987 Protocol.

At the same time, there was a widespread sense that more people should have taken part in the Commission's process. One expert in Great Lakes public participation wrote during the Web dialogue:

As the IJC solicited comments via email, telephone, postal mail and in-person meetings, did we participate (or rally others to participate) in a meaningful and passionate manner? Spotty participation in generally well advertised meetings, limited participation in these very Web dialogues, and other evidence from this fall's public hearing process suggests that we the 'public' have not demonstrated the level of engagement that it would take to move our governments toward greater accountability on binational environmental protection.

Barriers to Public Engagement

Several barriers to public engagement were said to exist in the Agreement review process, and more generally in Great Lakes policy. Among those identified by participants were a lack of information — the general public may not know enough about the problems facing the lakes or the solutions to those problems to get them to engage — and lack of confidence that governments will be responsive to their concerns and that funding for meaningful local public involvement will be sufficient.

With respect to the perceived lack of information, many participants cited fish consumption advisories as an example:

There's a lot of misinformation or lack of information. Fish consumption advisories are still not well publicized because governments seem too concerned about discouraging tourists and

not concerned enough about protecting people and protecting public health.

Insufficient funding was widely seen as a key barrier to more extensive public engagement. “People are very interested in getting involved to help restore these sites [Areas of Concern],” stated a program manager for one regional environmental group. “On the other hand,” he added, “there is always a financial impediment to help make this happen.” Generally, governments were looked to for financial support, but other sources were identified as well:

From a practical standpoint, unfortunately, there was a true lack of funds from the foundation community to support NGO [non-governmental organization] involvement. Long-term commitment to participating in such a large effort ... takes a huge amount of resources, persistence and time. But without the NGOs, there will be less overall involvement of the broader public

In some cases, the calls for greater access to public participation were directed at the Commission as well as the Governments: “We would very much appreciate a greater involvement of the public in your working groups and scientific committees,” said one participant.

Education, Accountability and Funding

Educational programs, including some in the school system, were seen by many as a key to improving the public’s understanding. At the same time, many believed that the IJC has a role to play. As one person put it:

The IJC could do more to help ‘market’ the Great Lakes and the need for investments in Great Lakes protection and restoration to the general public. In doing so, the IJC should work with communications groups to take advantage of current research and message development to ensure that its messages and the mechanisms for outreach are targeted to key audiences within the Great Lakes public. I believe that this type of more general ‘marketing’ should be the IJC’s primary responsibility on this issue, as opposed to having the IJC fund public involvement in particular AOCs, etc.

As for addressing the perceived lack of government responsiveness, accountability provisions in the Agreement were often proposed as a solution:

The IJC should do everything possible to ensure that any future version of the Great Lakes Water Quality Agreement includes enforcement measures that allow outside entities to hold governments accountable, in court, if they fail to meet the specific goals, action and timelines that should be part of the new Agreement. This increase in meaningful accountability might help rebuild public trust in the institutions charged with protection of the Great Lakes — if people understand the problems and think that they can make a difference by engaging, they will engage.

Many people called on the Commission to help ensure that adequate funding is available to support public involvement:

The IJC can help ensure that meaningful investments in public involvement are a yardstick in the new Great Lakes Water Quality Agreement. By this, I mean that the two Governments ought to hold primary responsibility for funding public involvement in decisions about the future of the Great Lakes, whether at the local/RAP level or more broadly. They should invest in meaningful public involvement early on in these processes and should take care to engage the right set of people. The IJC’s role should be to make sure that public involvement is part of all aspects of the Great Lakes Water Quality Agreement and that the Agreement includes measurable objectives to that end.

Using the Review Process

Among the experts in public participation, there was a common view that the review process itself could be a way to reinvigorate public involvement in the Agreement.

[The] first order of business is to change the traditional public involvement mindset and ask, ‘If we want to reach ordinary citizens and engage them, how do we do that?’ We consider

this an educational opportunity to present the Agreement and review process in layperson's terms. It is essential to define a clear process, points at which the public has a responsibility and opportunity to participate, and an evaluation piece. During and after these, ordinary citizens need to be connected to local programs in their own areas that have distinct relationships to the Agreement. Local involvement with specific, concrete programs is the best way to interest and maintain the engagement of citizens.

Part of the way to do this is for the public discussion not to be about the Agreement. Instead, the public discussion is about eating fish. Drinking the water. Being able to swim at the beaches without worrying about pathogenic pollution. Having habitat places to view birds and wildlife. Stopping sewage. Then, the Agreement is a tool — a means to an end — to get us to those things. The ends are what will really bring 'ordinary' people to the table. Not the Agreement.

Another suggestion was to establish an advisory panel to assist governments and other agencies in the basin in engaging the public. However, rather than being ad hoc, project-specific and disbanded after the review of the Agreement, this one should be ongoing, with membership refreshed on a scheduled basis. As participant in the Web dialogue wrote:

If we were to select from the thousands of passionate (easily nudged) citizens around the Great Lakes basin who have engaged in these processes over time (and many have become political leaders or joined nongovernmental organizations) and assemble a citizens panel who could work alongside the boards and other implementing agencies, advise on public engagement mechanisms, create local linkages, we may get somewhere.

The ultimate goal, said many people, is to realize sustainable behaviour change over time, and public education and participation were seen as tools to achieve that goal.

Public engagement, when designed to be inclusive, is ultimately about public education. If the goal of our engagement is merely to capture public attention for our policy decisions, then we miss an opportunity to build public support for lakes conservation, something that would help all lakes policies — from the Annex agreement to restoration, invasive species and more. And, most importantly, we can help the lakes themselves.



Conclusion

There is no question that people are inspired by the Great Lakes and the St. Lawrence River, and this appears to have animated a great many people who took part in the Commission's events. "This is one of my favorite places on the planet," said one person said at a public meeting. Others expressed similar views:

I recently moved to Ashland, Wisconsin, because of Lake Superior. I love being around the water. The lake has so much majestic beauty that I find myself walking the shores, taking in the sights of the water. The bells clanging from the ships in the marina are music to my ears. If more is not done to protect our Great Lakes, our future generations may never be able to enjoy these fine lakes.

The Great Lakes can be considered as a treasure which is essential for human survival. Aside from providing many essential vegetation and life forms, its natural beauty adds to the quality of life for the basin inhabitants and a source of spiritual inspiration for all. Friends and relatives visiting from all over the world are amazed and jealous of the scenic beauty so close to where we live. We have lived here for 33 years and would not trade this place for any other spot ...

Because of sentiments like these, there was widespread appreciation for the public comment process was expressed from all the sectors that participated — state, provincial and local governments, non-government organizations and members of the public at large. A representative of a large binational organization put it this way in one of the public meetings:

I'd like to thank the Commissioners for holding these public consultations across the basin,⁸ as these public forums for comment recognize

that citizens are equal stakeholders, capable of and responsible for affecting decisions and policies that directly impact the future of their communities, the quality of their health and their children's health. These forums ... exist as a vital component to the Agreement's review and, perhaps more importantly, as a first step in a renewed vision for the Great Lakes, one where the policies and experiences of the Great Lakes and the commitment of the Great Lakes citizens and governments can once again make an unprecedented effort to protect water quality ... and compel ecosystem restoration.

A county commissioner made the same point more succinctly: "It's very important that you come out and talk to us and allow us to have some input. We find that to be extremely important." A member of the public, unaffiliated to any organization, had a similar sentiment:

Thank you for coming to [our community]. For me, it's really comforting to know that you incorporated a public component into your review process, and that should be recognized and much appreciated. Frequently, that's overlooked when we're making decisions about community resources such as this, and I think it's an essential component of your work.

The relative roles and responsibilities of the federal Governments and the Commission, respectively, were not always clearly understood. Most participants did appreciate that the two federal Governments are the Parties to the Agreement, that they will be undertaking the review and that the Commission was conducting public engagement activities on their behalf. However, a significant number seemed to think that the Commission directs activities to implement the Agreement and would be managing the review. The following comments are representative of this confusion and reflect the need for more effective communication by the Commission and the Governments:

⁸ At all public meetings, the presiding Commissioners made clear that the public consultations were being undertaken at the request of the two federal governments.

We know that the Commission has worked very hard to clean up all of the non-point source polluters.

We're very hopeful that the Commission will be able to continue to work in the cleanups of these Areas [of Concern].

What are the consequences to the Commission ... if you don't follow the promises that you make to us [about reviewing the Agreement every six years]?

At times, a sense of frustration was detected when some said there has been an overabundance of outreach initiatives in the basin, with insufficient evidence that the Governments have taken the public's views into account in developing programs or making funding decisions. At the same time, complaints were voiced that while the public is routinely asked for comments, it does not always receive the information it requires. As one participant put it, to loud applause: "What I sense is a little bit frustrating: A lot of times in these meetings, you're asking for input and we're asking for answers, and there's nobody ever there to give us answers."

For some people, frustration gave rise to cynicism that the forthcoming review would not make any difference. As one participant said, "I noticed that in 1987, there was supposed to have been every six years a revisiting of the Agreement. And with my calculations ... it's been three times that it has not been reviewed ... 1987 plus six, that's 1993. Nothing was done. Add six years, 1999. Nothing was done. Add six more years, 2005. Nothing was done."

More broadly, though, there was real hope that the two federal Governments would pay attention to the ideas put forward by participants in the public meetings and other public involvement forums. As one person said, speaking on behalf of a large constituency:

All of these people have devoted their Monday night to coming out here, and I would certainly like to see these comments taken very seriously, because we certainly have put a lot of effort into this and there's lots of groups out here tonight that have done a lot of work on these issues and continue to do a lot of great work, and we want to see our work not be disregarded or not utilized.



The Commission wishes to thank the over 4,100 people who took part in the public comment process. In the Commission's view, the synthesis report is a fair and even-handed reflection of the comments received during the public meetings, Web dialogue and other consultation activities. Since a number of participants prepared detailed, substantive comments on the forthcoming review of the Agreement, however, the Commission also notes that the full, unedited record of public comment is available on CD-ROM and strongly encourages Governments and the public to examine this record.



Appendices

Appendix A: Letters of reference



United States Department of State
Washington, D.C. 20520

June 8, 2005

The Honourable Dennis L. Schornack
International Joint Commission
1250 23rd Street, NW, Suite 100
Washington, DC 20440

Dear Chairman Schornack:

Following up our October 22, 2004 discussion regarding a possible role for the International Joint Commission (IJC) in the review by the United States and Canada of the Great Lakes Water Quality Agreement (GLWQA), after consideration of an IJC discussion paper on the review and public comments on the review made to the Parties, and pursuant to Article IX of the Boundary Waters Treaty (BWT), I would propose that the Commission assist the Parties by carrying out a series of public meetings on the GLWQA review in accordance with the attached paper.

We hope that at the April 2005 Semi-Annual Meeting there will be agreement that the June 2005 Biennial Meeting in Kingston, Ontario will be the launch of the review.

With respect to the timing of additional public meetings, it may be prudent to schedule those meetings beginning in the autumn given other USG-organized public meetings on Great Lakes issues taking place during the summer and the advisability of avoiding "Great Lakes burnout" in both government officials and Great Lakes stakeholders. The timing of activities related to the review is an issue the Parties would like to discuss with the Commission more in depth. The Parties would like to work closely with IJC staff in the preparation of context-setting materials that might be distributed at the public meetings.

The Parties anticipate the need for further public consultations at later stages in the review process. While a more prominent involvement by governments will be necessary during these consultations, it is conceivable the Parties will call upon the IJC for additional assistance. However, governments would like to leave discussions on these later consultations for some future date.

Public consultations are a critical and delicate element of the GLWQA Review. I am confident the IJC's efforts will assure that concerns are heard as the process advances.

Sincerely,

Terry A. Breese
Director, Office of Canadian Affairs

Review of the Great Lakes Water Quality Agreement: Role for the International Joint Commission

The Great Lakes Water Quality Agreement (GLWQA) requires the Governments of Canada and the United States (the “Parties”) to undertake a comprehensive review of the operation and effectiveness of the Agreement every six years. This requirement was formally triggered with the release of the International Joint Commission's 12th Biennial Report on September 13th, 2004. The review of the GLWQA is an opportunity to ensure that the Agreement continues to be a visionary statement that will guide and foster shared-commitments throughout the Great Lakes Basin for the Great Lakes' continued protection and restoration. It is also critical that the GLWQA function as a useful tool for the Parties as they proceed in this undertaking. The International Joint Commission's institutional strength and record of bi-national impartiality is a vital part of the United States' and Canada's management of their shared environment. The U.S. and Canada believe the Commission is uniquely qualified to carry out the following consultations on the operation and effectiveness of the Great Lakes Water Quality Agreement.

The Commission and the Parties recognize that these public consultations will not be the sole source of public input into the review process; the Parties have identified additional opportunities for further public involvement during the formal review.

Regional Public Meetings

Five regional public meetings should be held across the basin to educate the public about the Agreement and its review and to engage in an interactive discussion of the issues.

The goals of these consultations are as follow:

- 1) To provide an early opportunity for public input into the upcoming GLWQA Review.
- 2) To inform the public about the GLWQA .

In addition to the initial Biennial meeting in Kingston, Ontario, the Commission should organize additional meetings in geographically diverse regions of the basin – perhaps one on each lake. The IJC may wish to utilize the Kingston meeting to gather initial input from Great Lakes stakeholders, review and analyze the information obtained, then reframe the issues for the later meetings in the autumn.

Suggested additional regional public meeting locations:

- Chicago
- Toronto
- Detroit-Windsor
- Duluth - Thunder Bay
- Sault Ste. Marie

Where possible, the Commission is encouraged to make arrangements so that each public meeting can be simultaneously moderated on the Internet. This will provide those who can not travel or attend the meeting the opportunity to participate and comment through the use of a live, moderated chat room.

Background materials and materials presented at the public meetings will be developed jointly by the Commission and the Parties to each others satisfaction. Where possible, the material should be posted on the Commission's Internet site. These documents should provide an executive level summary of the goals and objectives of the Agreement, key changes to the Agreement since 1972, a very brief summary of the articles and annexes, and a summary of past triennial reviews of the Agreement.

Report

The Commission shall provide the Parties with an unedited record of the public meetings. In addition, the Commission shall submit to the Parties a synthesis of the views presented at the public meetings. The synthesis report will outline the issues identified at the public meetings and organized to be of greatest utility, for example by annex, theme or issue.

The Commission is asked to submit to the Parties the unedited record and the synthesis report by January 2006 to ensure that this information can be incorporated into the Parties review.

The Parties acknowledge that the Commission through its Great Lakes Boards, Council and Regional Office, may provide additional advice to the Parties on the review of the GLWQA. However, this advice will be separate from the unedited record and synthesis report requested by the Parties.

Estimated Cost:

The Commission has projected the following costs to undertake this reference:

\$125,000 CND or \$93,750 USD (based on an exchange rate of .75) Travel for Commissioners and staff, facility rental and other logistics such as interpretation and transcription.

\$35,000 CND or \$26,250 USD (based on an exchange rate of .75) For publication both in English and in French.

Total

\$160,000 CND or \$120,000 USD (based on an exchange rate of .75)

The Governments shall seek in equal shares the funds identified above to provide the Commission with the resources needed to discharge the obligations under the reference.

Minister
of Foreign Affairs



Ministre
des Affaires étrangères

Ottawa, Canada K1A 0G2

The Right Honourable Herb Gray, P.C., C.C., Q.C.
Chair
Canadian Section
International Joint Commission
234 Laurier Avenue West, 22nd Floor
Ottawa, Ontario
K1P 6K6

Dear Mr. Gray:

Pursuant to Article IX of the Boundary Waters Treaty, I propose that the International Joint Commission assist the Parties in the Review of the Great Lakes Water Quality Agreement by carrying out a series of public meetings on the Review in accordance with the attached paper.

Public consultations are a critical and delicate element of the Review of the Great Lakes Water Quality Agreement. I am confident that the efforts of the International Joint Commission will ensure that concerns are heard as the process advances.

I understand that a similar letter is being sent to your colleague, Mr. Dennis L. Schornack, Chair of the United States Section, by the State Department.

Sincerely,

A handwritten signature in black ink, appearing to read "Pierre S. Pettigrew", with a long horizontal stroke extending to the right.

Pierre S. Pettigrew

Enclosure

Canada

Review of the Great Lakes Water Quality Agreement: Role for the International Joint Commission

The Great Lakes Water Quality Agreement (GLWQA) requires the governments of Canada and the United States (the “Parties”) to undertake a comprehensive review of the operation and effectiveness of the Agreement every six years. This requirement was formally triggered with the release of the International Joint Commission's 12th Biennial Report on September 13th, 2004. The review of the GLWQA is an opportunity to ensure that the Agreement continues to be a visionary statement that will guide and foster shared-commitments throughout the Great Lakes Basin to the Great Lakes’ continued protection and restoration. The International Joint Commission’s institutional strength and record of bi-national impartiality is a vital part of the United States’ and Canada’s management of their shared environment. The U.S. and Canada believe the Commission is uniquely qualified to carry out the following consultations on the operation and effectiveness of the Great Lakes Water Quality Agreement.

The Commission and the Parties recognized that these public consultations will not be the sole source of public input into the review process; the Parties have identified additional opportunities for further public involvement during the formal review.

Regional Public Meetings

Five regional public meetings should be held across the basin to educate the public about the Agreement and its review and to engage in an interactive discussion of the issues.

The goals of these consultations are as follow:

To provide an early opportunity for public input into the upcoming GLWQA Review.

2) To inform the public about the GLWQA.

In addition to the initial Biennial meeting in Kingston, Ontario, four meetings should be organized in geographically diverse regions of the basin. The IJC may wish to utilize the Kingston meeting to gather initial input from Great Lakes stakeholders, review and analyze the information obtained, then reframe the issues for the later meetings in the autumn.

Suggested additional regional public meeting locations:

Chicago -Toronto
Detroit-Windsor
Duluth - Thunder Bay
Sault Ste. Marie

Where possible, the Commission is encouraged to make arrangements so that each public meeting can be simultaneously moderated on the Internet. This will provide those who can not travel or attend the meeting the opportunity to participate and comment through the use of a live, moderated chat room.

Background materials and materials presented at the public meetings will be developed jointly by the Commission and the Parties to each others satisfaction. Where possible, the material should be posted on the Commission's Internet site.

These documents should provide an executive level summary of the goals and objectives of the agreement, key changes to the Agreement since 1972, a very brief summary of the articles and annexes, and a summary of past triennial reviews of the Agreement.

Report

The Commission shall provide the Parties with a complete record of the public meetings. In addition to this record, the Commission shall submit to the Parties a synthesis of the views presented at the public meetings. The synthesis report will outline the issues identified at the public meetings and organized to be of greatest utility, for example by annex, theme or issue.

The Commission is asked to submit to the Parties the unedited record and the synthesis report by January 2006 to ensure that this information can be incorporated into the Parties review.

The Parties acknowledge that the Commission through its Great Lakes Boards, Council and Regional Office, may provide additional advice to the Parties on the review of the GLWQA. However, this advice will be separate from the unedited record and synthesis report requested by the Parties.

Estimated Cost:

The Commission has projected the following costs to undertake this reference:

CDN \$125,000 or US \$93,750 USD (based on an exchange rate of .75) for travel of Commissioners and staff, facility rental and other logistics such as interpretation and transcription.

CDN \$35,000 or US \$26,250 (based on an exchange rate of .75) for publication both in English and in French.

Total

CDN \$160,000 or US \$120,000 (based on an exchange rate of .75)

The Governments shall seek in equal shares the funds identified above to provide the Commission with the resources needed to discharge the obligations under the reference.

Appendix B: Tables



Table 1: Participation in public meetings, by country and location

	Number	Percent each country	Percent both countries
Kingston Biennial Meeting (Ontario): June 9-11 ¹	434	n/a	41.9
Public meetings in the USA²			
Duluth (Minnesota): Monday, October 24	35	15.2	3.4
Bay City (Michigan): Tuesday, November 1	20	8.7	1.9
Green Bay (Wisconsin): Tuesday, November 1	88	38.1	8.5
Chicago (Illinois): Wednesday, November 2	18	7.8	1.7
Detroit (Michigan): Wednesday, November 2	14	6.1	1.4
Cleveland (Ohio): Thursday, November 3	35	15.2	3.4
Rochester (New York): Thursday, November 10	21	9.1	2.0
Total	231	100.0	22.3
Public meetings in Canada²			
Montréal (Quebec): Monday, October 17	50	13.4	4.8
Thunder Bay (Ontario): Tuesday, October 25	12	3.2	1.2
Sault Ste Marie (Ontario): Thursday, October 27 ³	32	8.6	3.1
Windsor (Ontario): Wednesday, November 2	38	10.2	3.7
Quebec City (Quebec): Tuesday, November 8	20	5.4	1.9
Midland (Ontario): Tuesday, November 8	120	32.3	11.6
Toronto (Ontario): Wednesday, November 9	100	26.9	9.6
Total	372	100.0	35.9
TOTAL BOTH COUNTRIES	1037		100.0

1. Registered participants, excluding IJC commissioners and staff, translators and contractors.
2. Informal head count (does not include IJC commissioners or staff, translators or contractors).
3. Includes 7 people from the Binational Public Advisory Committee for the St. Marys River RAP who met with commissioners separately because of a timing conflict.

Table 2: Participants, by channel¹

Channel	Number	Percent	Percent excluding third-party submits
Kingston Biennial Meeting	434	10.5	30.1
Public meetings ²	603	14.6	41.8
Mail or fax	42	1.0	2.9
Telephone	12	0.3	0.8
Web dialogue ³	247	6.0	17.1
email from IJC website submit form	45	1.1	3.1
email directly to gl@windsor.ijc.org or IJC public affairs	60	1.5	4.2
email from third-party website submit forms ⁴	2690	65.1	
TOTAL	4133	100.0	100.0

1. None of these counts includes IJC commissioners and staff, translators or other contractors. Those who participated in a single channel more than once (e.g., they called several times or sent several emails) are counted only once in that channel. On the other hand, those who participated in more than one channel are included in the total for each of those channels.
2. Informal head count.
3. The number of people who registered for the Web dialogue, as opposed to the number who actually joined the online discussion.
4. Emails sent to gl@windsor.ijc.org via submit forms on third parties' websites, including PIRG Illinois, PIRG Wisconsin and PENNEnvironment.

Table 3: Online participation, by type

Channel	Number	Percent	Percent excluding third-party submits
Web dialogue ²	247	8.1	70.2
email from the IJC website submit form	45	1.5	12.8
email directly to gl@windsor.ijc.org or IJC public affairs	60	2.0	17.0
email from third-party website submit forms ³	2690	88.4	
Total online participation	3042	100.0	
Total excluding emails from third-party submit forms	352	11.6	100.0

1. None of these counts includes IJC commissioners and staff, translators or other contractors. Those who participated in a single online channel more than once (e.g., they several emails via a third-party website) are counted only once in that channel. On the other hand, those who participated in more than one online channel are included in the total for each of them.
2. The number of people who registered for the Web dialogue, as opposed to the number who actually joined the online discussion.
3. Emails sent to gl@windsor.ijc.org via submit forms on third parties' websites, including PIRG Illinois, PIRG Wisconsin and PENNEnvironment.

Table 4: Participants by state/province, including those who participated through third-party websites¹

	Number	Percentage			
AK	1	0.0%	TN	1	0.0%
AL	2	0.1%	TX	3	0.1%
AZ	4	0.1%	UT	1	0.0%
CA	12	0.3%	VA	8	0.2%
CO	3	0.1%	VT	5	0.1%
CT	2	0.1%	WI	504	12.7%
DC	9	0.2%	WV	1	0.0%
DE	3	0.1%	State not specified	10	0.3%
FL	10	0.3%	Total United States	3257	81.8%
GA	2	0.1%	AB	1	0.0%
HI	1	0.0%	BC	10	0.3%
IA	1	0.0%	ON	627	15.7%
ID	5	0.1%	QC	50	1.3%
IL	1182	29.7%	Province not specified	1	0.0%
IN	21	0.5%	Total Canada	689	17.3%
KY	1	0.0%	Country not specified	37	0.9%
MA	4	0.1%	TOTAL PARTICIPANTS	3983	100.0%
MD	4	0.1%			
MI	599	15.0%			
MN	41	1.0%			
MT	2	0.1%			
NC	3	0.1%			
NH	2	0.1%			
NJ	10	0.3%			
NM	4	0.1%			
NY	72	1.8%			
OH	56	1.4%			
OK	2	0.1%			
OR	2	0.1%			
PA	662	16.6%			
PR	1	0.0%			
SC	1	0.0%			

1. Includes only those meeting participants who completed registration forms at the Kingston Biennial Meeting and at the other 14 public meetings. Does not include IJC commissioners or staff, translators or other contractors at the meetings, but does include those who registered for the Web dialogue.

Table 5. Participants by state/province, excluding those who sent emails via third-party submit forms¹

	Number	Percentage
DC	9	0.7%
DE	1	0.1%
FL	1	0.1%
GA	2	0.2%
IL	111	8.6%
IN	17	1.3%
MA	1	0.1%
MD	2	0.2%
MI	139	10.8%
MN	35	2.7%
NC	2	0.2%
NH	2	0.2%
NJ	2	0.2%
NM	2	0.2%
NY	61	4.7%
OH	48	3.7%
OK	1	0.1%
OR	1	0.1%
PA	34	2.6%
UT	1	0.1%
VA	6	0.5%
VT	2	0.2%
WI	86	6.7%
State not specified	10	0.8%
Total United States	576	44.5%
AB	1	0.1%
BC	10	0.8%
ON	627	48.5%
QC	48	3.7%
Province not specified	1	0.1%
Total Canada	687	53.1%
Country not specified	30	2.3%
TOTAL	1293	100.0%
<i>Participants from Great Lakes states and provinces</i>	1206	93.3%

1. Includes only those meeting participants who completed registration forms at the Kingston Biennial Meeting and at the other 14 public meetings. Does not include IJC commissioners or staff, translators or other contractors at the meetings, but does include those who registered for the Web dialogue.

Table 6: Participants, by type of location and closest body of water

Participants¹	882
Respondents²	610
Response rate	69.2%

	Number	Percentage
Type of location		
Rural	119	19.5%
Small town	91	14.9%
Suburban	125	20.5%
Urban	220	36.1%
Not specified	55	9.0%
Total	610	100.0%
Body of water		
St. Lawrence River	63	10.3%
Lake Ontario	91	14.9%
Niagara River	4	0.7%
Lake Erie	67	11.0%
Detroit River	42	6.9%
Lake St. Clair	15	2.5%
St. Clair River	4	0.7%
Lake Huron	90	14.8%
St. Mary's River	5	0.8%
Lake Superior	54	8.9%
Lake Michigan	132	21.6%
Did not live in the Great Lakes basin, or not specified	43	7.0%
Total	610	100.0%

1. Number of participants counted at the meetings (does not include IJC personnel or contractors) and who registered for the Web dialogue (includes IJC personnel or contractors who registered for the dialogue).
2. Respondents to a voluntary, non-identifying survey that was handed out at the meetings and on registration in the Web dialogue. Not all those who attended the meetings completed the survey, though all the Web dialogue participants did. Some respondents did not answer all the questions.

Table 7: Demographic characteristics of participants¹

Participants¹	882	
Respondents²	610	
Response rate	69.2%	
	Number	Percentage
Age		
17 or younger	7	1.1%
18-29	32	5.2%
30-49	120	19.7%
50-64	158	25.9%
65 and older	68	11.1%
Not specified	225	36.9%
Total	610	100.0%
Education		
Less than secondary school	6	1.0%
Secondary	18	3.0%
Some higher education	57	9.3%
First higher education degree	88	14.4%
Some post-graduate	81	13.3%
Masters	101	16.6%
Doctorate	23	3.8%
Not specified	236	38.7%
Total	610	100.0%
Language³		
English	281	46.1%
French	38	6.2%
Not specified	291	47.7%
Total	610	100.0%

1. Number of participants counted at the meetings (does not include IJC personnel or contractors) and who registered for the Web dialogue (includes IJC personnel or contractors who registered for the dialogue).
2. Respondents to a voluntary, non-identifying survey that was handed out at the meetings and on registration in the Web dialogue. Not all those who attended the meetings completed the survey, though all the Web dialogue participants did. Some respondents did not answer all the questions.
3. Only respondents who self-identified as Canadian were asked to identify their first official language.

Table 8: Participants' interest and involvement in the Great Lakes

Participants¹	882
Respondents²	610
Response rate	69.2%

	Number	Percentage
Interest³		
Boating	213	34.9%
Cottage	118	19.3%
Fishing	167	27.4%
Hunting	38	6.2%
Swimming	230	37.7%
Wildlife-watching	190	31.1%
Agriculture	32	5.2%
Environment	429	70.3%
Commercial fishing	60	9.8%
Industry	48	7.9%
Shipping	48	7.9%
Other	80	13.1%
Not specified	43	7.0%
Group membership³		
Environment	187	30.7%
Recreation	50	8.2%
Professional	31	5.1%
Industry	19	3.1%
Other non-governmental organization	56	9.2%
Intergovernmental group	32	5.2%
Government	58	9.5%
Other	126	20.7%
Not specified	84	13.8%

1. Number of participants counted at the meetings (does not include IJC personnel or contractors) and who registered for the Web dialogue (includes IJC personnel or contractors who registered for the dialogue).
2. Respondents to a voluntary, non-identifying survey that was handed out at the meetings and on registration in the Web dialogue. Not all those who attended the meetings completed the survey, though all the Web dialogue participants did. Some respondents did not answer all the questions.
3. The total does not equal 100 because respondents were asked to check all that applied, and may have checked more than one item or none.

Appendix C:

List of participants



Jackie Abbatiello, IL
John Abbott, ON
Syazwani Abdul Kadir, WI
Paul Abell, ON
Bill Abernethy, IL
Jeff Abrahamson, PA
Ira Abrams, IL
Susan Abramson, PA
Glenn Abuja, ON
Alicia Acken
Tony Acquaviva, PA
Jan Adamczyk, IL
Walter Adamovich, ON
Beth Adams, MI
Betty Adams, MI
George Adams, PA
Anna Adamson, PA
Donna Adamson Curlis, PA
Susan Adelizzi, PA
Debra Adelson, IL
Steve Adler, IL
Susan Agate, IL
Erin Agee, MI
Russ Agee, CO
Jean Agnessens, WI
Stephanie Aguila, PA
Mary Ann Ahearn, PA
David Aiken, PA
Ian Albough, ON
John Albrecht, IL
Paul Albrecht, PA
Ken Albrough, ON
Jonathan Aldrich, PA
Eugene Aleci, PA
Sheryl Alef, MI
Jamie Alexander, PA
Lauren Alexander, DC
Anasatasia Alexopoulos, ON
Maria Alexopoulos, ON
Algonquin ECO Watch, ON
Allison Allen, WI
Carol S. Allen, PA
Caroline Allen, PA
Cate Allen, IL
John Allen, IL
MaryJean Allen, IL
Russ Allen, PA
Shelley Allen, CA
Alliance for the Great Lakes,
IL
Jonathan Almer, IL
Milton Alter, PA
Maryanne Amadio, ON
Laura Amatulli, MI
Douglas Ament, FL
Daniel Amick, IL
Kay Amland, WI
Clark Andelin, IL
Aaron Andersen, WI
Beth Andersen, MI
John Andersen, IL
Kara Andersen, WI
Anne Anderson, IL
Chris Anderson, ON
David Anderson, IL
David Anderson, ON
Helen Anderson, ON
Janette Anderson, ON
John Anderson, IL
Kelly Anderson, MI
Mark Anderson, ON
Patti Anderson, IN
Robert Anderson, MI
Ryan Anderson, IL
Sue Anderson, MI
Peter Andras, ON
Sarah Andras, ON
Alissa Andrew, IL
David Andrew, ON
Beverley Andrews, PA
Carol Andrews, MN
Kristyn Annis, ON
Blair Anundson, PA
Helen Appell, PA
Yvonne Appeltans, PA
Aquaculture Committee,
Georgian Bay Association,
ON
Brynn Arenz, WI
Gereme Ariss
Jane Ariss, ON
Christina Arlt, PA
Joanne Armintrout, PA
John Armstrong, IL
Nanette Arndts, PA
John Arnold, MI
Julie Arnold, MI
Michelle Arnold, IL
Victoria Arnold, IL
Nancy Arnosti, PA
Sharyl K. Aruck, NY
Joe Arvin, WI
Frances Ashenhurst, ON
Ashfield-Colbourne Lake-
front Association, ON
Neva Asplundh, PA
Kathleen Assiff, MI
Association de la Savegarde
du Lac St-François, QC
Michele Aston, NC
Ralph Athey, IL
Linda Aubel-Edick, IL
Andre Aubin, QC
Madeleine Aubrey, ON
Emily Audette, MI
Audubon Ohio, PA
Kris Aune, IL
Sara Ausloos, WI
Candi Ausman, CA
Alexandra Avenius, MI
William Avery, ON
Anna Aydinyan, CT
E. Daniel Ayres, MI
Joe Azzarello, MI
Caitlin Ba, MI
Elizabeth Babcock, IL
Leslie Babson, IL
Trevor Bach, WI
Rose Bachi, IL
Karen Bacula, MI
Carl Bade, PA
Mary Baechle, IL
David Bagby, IL
William Bailey, VA
Susan Baillie, WI
John Bain, ON
Colin Baird, ON
Marcia Baisiello, IL
Barton Bakaley, PA
Jocelyn Baker, ON
John Baker, WI
Michael Baker, PA
Scott Baker, IL
Taylor Baker, PA
Rebecca Balavitch, MI
Karen Baldwin, IL
Rena Baldwin, IL
Rosiland Baldwin, IL
Thomas Balint, ON
Jeff Ball, IL
Meredith Ballard, MI
Dave and Tami Ballard, WI
Deanna Ballinger, WI
Maureen Balluff, IL
Alana Balogh, PA
Alana Balogh, PA
Katherine Balpataky, ON
Emil Bandeji
Claire Bangasser, PR
Mickey Bannon, PA
Todd Bapton, IL
Barbara, MN
Felix Barbetti, ON
Julie Barbosa, IL
Jason Barbose, MI
Karin Barden, IL
Rick Bare, WI
Sushma Barewal, ON
Julie Barker, ON
Jessica Barman, WI
Clifford Barnard, MI
Jason Barnes, MI
Kathryn Barnes, MI
Robert Barnes, MI
Brett Baron, IL
Helen Baron, MI
Anthony Barr, PA
Martin Barr, IL
Jean Barre Dufresne, QC
Drew Barrett, IL
Kate Barrett
Michael Barrett, IL
Ashley Barrie, ON
Rhonda Barron, IL

Richard Barron, MI
 Barbara Barta, IL
 Charles Bartholomew, PA
 M. Bartnik, MI
 Mary Ann Bartoli, IL
 Marilyn Baster
 Rhonda Bateman, ON
 Patricia Teresa Battersby, MI
 Lee Batts, IL
 Theresa Bauer, WI
 Mary Frances Baugh, PA
 Geri Baumblatt, IL
 Andy Baumgart, WI
 Andy Baumgart, WI
 Fred Baurer, PA
 Michael Baurer, PA
 Marilyn Baxter, ON
 Matt Baxter, ON
 Bay Area Restoration Council, ON
 Bay County Department of Environmental Affairs and Community Development, MI
 Gina Bayer, WI
 Randall Bayless, IN
 Catherine M. Bayne, ON
 Justine Bayod-Espoz, IL
 Janet Bazzett, IL
 Fran Beach, WI
 Wilma Beacher, PA
 Beacon Bay Marina, ON
 Susan Beattie, MI
 Clifford Beatty, ON
 Lorne Beatty, MI
 Émile Beauchamp, QC
 N. J. Beaulieu, MI
 Robert Beauvais, MI
 Cheryl Beboer, ON
 Christopher Beck, PA
 Joe Beck, IL
 Judy Beck, IL
 Mary Beck, WI
 David Becker, IL
 Judith Becker, PA
 Lois Becker, OH
 Mary Lynn Becker, MI
 Mimi Becker, NH
 Warren Becker, IL
 Jim Beckwith, IL
 Kimberly Beebe, MI
 Robert and Kathy Beecher, ON

Katherine Beehler, ON
 Lisa Beemsterboer, IL
 Shaindel Beers, FL
 Robert Beese, WI
 Sheldon Behensky, IL
 Richard Behnlander, MI
 Merette Behow-Rimhard, WI
 Dan Behrens, PA
 Thomas Bekele-Arcuri, PA
 Nancy Belanger, MI
 Barbara Belasco, NY
 Aldric Belchak, MI
 David Bell, ON
 Chris Bellovary, WI
 Dennis Belogorsky, IL
 Robert Bembenek, WI
 Nancy Bender, IL
 Debra and Ron Bendis, IL
 Michael-David BenDor, MI
 Hugh Benevides, ON
 Brian Bengry, WI
 Ilene Beninson, MI
 Nabila Benkherouf, QC
 David Benner, PA
 Frieda Bennett, MI
 Lorna Bennett, IL
 Mary Bennett, IL
 Bennett Beechgrove Community Group, ON
 Nadine Benoit, ON
 Catherine Benson, IL
 Gretchen Benson, PA
 Melissa Benson, MI
 Virginia Benson, WI
 Barb Bentley, ON
 Mary Ann Bentz, PA
 Hugh Benvicles, IL
 Catherine Beres, ON
 Tom Bergen, WI
 Dale Bergeron, MN
 Mark Berggren, IL
 Holly Bergren, IL
 Mayor Herb W. Bergson, MN
 Mark Berkheimer, PA
 Nicole Berkheimer, PA
 Steven Berlinski, IL
 Penny Bernard Schaber, WI
 Diana Bernardi, IL
 Laura Bernstein, IL
 Rosalie Bertell, PA
 Dominique Betancourt, IL
 Catherine Bettcher, OH
 Gayle Bettega, MI

Barbara Beyers, IL
 Bill Bialkowski, ON
 Sue Bialostosky, PA
 Nicholas Bianchi, IL
 Marla Biederman, MI
 Marlena Bielski, IL
 Victoria Bielski, IL
 Chris Bierbrauer, WI
 Marjorie Bierbrauer, WI
 P. Chris Bierbrauer, WI
 Theresa Biesiada, IL
 The Big Cleanup: The Bay of Quinte, ON
 Sandy Bihn, ON
 Valerie Binder, MI
 Sarah Binks, ON
 Sarah Biondich, WI
 John Birnbaum, ON
 Konrad Bis, IL
 Jeffery Biss, IL
 Chauna Black, MI
 Kathryn Black, IL
 Ken Black, ON
 Lawrence Black, IL
 Randall Blackwell, PA
 Helen Bladholm, WI
 David Blair, MI
 Shana Blair, IL
 Pierrette Blanchard, ON
 Darcy Bland, IL
 Henry S. Bland, IL
 Jeremiah Blatz, PA
 Terry Blaylock, MI
 Skip Bleecker, MI
 Earl G. Bley Jr., IL
 Charles Blickhan, IL
 Eleanor Blitzer, FL
 Jeanette Blize, PA
 Chuck Block, WI
 Regan Blomshield, OH
 Blue Mountain Watershed Trust, ON
 Leslie Boardman, PA
 Alex A. Bobroff, IL
 Jeffrey Bocchini, IL
 Amilcar Boddie-Willis, IL
 Margaret Bodnovich, IL
 Susan Boehnke, ON
 Dora Boersma, ON
 Cindi Bogacz, IL
 Donna Bogosh, IL
 Jennifer Bogseth, IL
 Mary Bohling, MI

Joe Anne Boike, MI
 Paloma Boiles, IL
 Julie Boland, MI
 Vaughan Boleky, PA
 Teresa Bondavalli, IL
 Karina Bongaarts, PA
 Mary Jo Bonner, WI
 Patricia Bonner, DC
 Gregory Bookhultz, PA
 Jean Booms, MI
 Brad Borchers, IL
 Donna Boris, MI
 Dena Borman, IL
 Heather Bosman, IL
 Lee Botts, IN
 Paul Muldoon and Lee Botts
 Bruce Bouchard, PA
 Marie-Amélie Boucher
 Lori Boughton, PA
 Cassidy Boulan, MI
 Wood Bouldin, PA
 Michelle Bourbonniere, ON
 Edward Bourguignon, OH
 Ian Boussy, IL
 Matthew Bower, PA
 Ted Bowering, ON
 Alicia Bowles, WI
 Trisha Boyce, IL
 Duncan Boyd, ON
 David Boyle, MI
 Mary Boyle, WI
 John Braden, IL
 Lincoln Bradford, IL
 Janis Bradish, WI
 Claudette Bradley, AK
 Michelle Bradley, IL
 Michael Bradstreet, ON
 Alta Bragg, WI
 Marianne Braid, ON
 Finlay Braithwaite, ON
 Harry Brakeman, MI
 Jon Brams, PA
 Mariah Branch, MI
 Hillel Brandes, PA
 Jane Brandley, WI
 Alice Brandon, IL
 Nancy Brandt, IL
 Stephen Brandt, MI
 Brian Branfireun, ON
 Ann and Kelly Brant, ON
 Jane Branyan, PA
 Beth Braun, IL
 Darryl Braun, MI

Anne and Peter Bray, MI
 Sue Brayer, IL
 Peggy Breckenridge
 Stephen Brede, MI
 Jim Bredin, MI
 Mark Breederland, MI
 Anne Brennan, MI
 Jean Brennan, IL
 Jennifer Brennan, IL
 Mike Brennan, MI
 Jesse Brenner, PA
 Ree Brennin, ON
 Kathy Brewer, MI
 Boulanger Brian, OH
 Valerie Brice, WI
 Lee Bridges, IN
 Joseph Bridy, AIA, PA
 Jennifer Briggs, PA
 Ted Briggs, ON
 Lesley Brill, MI
 Mary Anne Brinchman, IL
 Michelle Brinckerhoff, IL
 Dana Brink, IL
 Jeff Brink, IL
 Mark Huaser and Dana Brink,
 IL
 Darrin Britting, PA
 Karmel Brlhaj, QC
 Elizabeth Brockhaus, MI
 Bill Brodeur
 Fern Brodtkin, PA
 David Brodnax, Sr., IL
 Eric Brodsky, IL
 Alan Broglin, MI
 Kate Bronstein, PA
 Maggie Brooks
 Brenda Brouillet, MI
 Bridget Brown, WI
 Carrie Brown, AZ
 David Brown, IL
 Jeff Brown, PA
 Jeremy Brown, MI
 Ken Brown, IL
 Mark Brown, IL
 Patrick Brown, IL
 Paul Brown, PA
 Richard Brown, MI
 Scott Brown, ON
 Tim Brown, IL
 Brown County Land
 Conservation Lake Michigan
 Forum, WI
 Beth Brownson, ON

James Bruce, ON
 Robert Bruckman, PA
 Debbie Bruening, MI
 Penelope Brumm, IL
 James Brusslan, IL
 Lincoln Bryant, ON
 Wendy Bryant, ON
 Sharon Buazard, IL
 Rose Buchanan, IL
 Peter Buchholz, WI
 Andy Buchsbaum, MI
 Karen Buck, ON
 Daniel Buerkle, PA
 Simone Bullen, IL
 Julia Bunn, IL
 Joy Bunton, IL
 Jonathan Burden, IL
 Sarah Burden, IL
 Caroline Burdett, IL
 Linda Burdett, IL
 William Burdett, IL
 Karen Burgess, MD
 John Burhani, WI
 Paul Burik, PA
 Meghan Burke, IL
 Terri Burke, MI
 Steven Burkhard, IL
 Greg Burnet, IL
 Pat Burnette, MI
 Abudullah Bob Burns, ON
 Dorothy Burns, PA
 Joan Burns, MI
 Robert Burns
 Steve Burns, IL
 Thomas J. Burns, IL
 Paul Burroughs, PA
 Stuart Burstein, IL
 Marilyn J. Burton, ON
 Dan Busemeyer, IL
 Butler Family Fund, WI
 Loretta Bybee, PA
 Tanya Cabala, MI
 Charles Caccia, ON
 Laura Caffentzis, WI
 Kristina Caggiano, PA
 Sara Cagno, PA
 Irene Cahill, MI
 Britt Cain, IL
 Jamie Caito, PA
 Henry Calamia, Jr, IL
 Ruth Calandriello, IL
 Elizabeth Calhoun, MI
 Caller, IL

Caller, ON
 Debbe Callesen, WI
 Calumet Ecological Park
 Association, IL
 Jim Camasto, IL
 Kath Camasto, IL
 Susan Campanini, IL
 Christopher Campbell, IL
 Debby Campbell, IL
 Ian Campbell, ON
 Linda Campbell, ON
 Mayor Jane Campbell, OH
 Jeffrey Camplin, IL
 Gayla Campney, ON
 Canadian Auto Workers
 Local 1520, ON
 Canadian Environmental Law
 Association, ON
 Canadian Yachting
 Association, ON
 Michael Canning, IL
 Frances Canonizado, IL
 John Cara, IL
 Tom Caravette, IL
 John Carey, ON
 George Carlisle, PA
 Ann Carlson, WI
 Karen Carlson, WI
 Melissa Carlson, NY
 Karen Carney, PA
 Peggy Carpenter, PA
 Corey Carpentier, WI
 Amy Carr, IL
 Bill Carr, ON
 David Carr, WI
 Mark Carroll, WI
 Trenia Carroll, IL
 Carol Carson, IL
 Tasha Carson, PA
 Nicole Carter, ON
 Chris Casper, WI
 Beata Castaneda, IL
 Mary Beth Castillo, PA
 Matthew Catania, IL
 Rebecca Cate, PA
 Jolene Catron, NM
 Charlotte Caudill, IL
 Melinda Caughill, MI
 Melinda Caughill, WI
 Hilary Caws-Elwitt, PA
 Jonathan Caws-Elwitt, PA
 Shawn Cecchi, IL
 William Ceisel, IL

Patrick Cejka, IL
 Matt Cenci, MI
 Center for Environmental
 Information, NY
 Dante Centuon, OH
 Joseph Cerami, IL
 Martha Cetina, IL
 Darcy Chadwick, IL
 Joanna Challacombe, IL
 Ron Challis, ON
 Luce Chamard, QC
 Chamber of Maritime
 Commerce , ON
 Sarah Chambers, IL
 Sarah Chambers, MN
 Rachel Chang, IL
 Emily Chapin, MI
 Harold Chard, ON
 Louis Charest
 Murray Charlton, ON
 Marie-Peir Charron, ON
 Keith Charvat, IL
 Edith Chase, OH
 Mohan and Sobha
 Chathampally
 Cynthia Chelius, MI
 Mary Susan Chen, IL
 Pei Ling Chen, PA
 Daphne Cheng, IL
 LIsa Chermack, PA
 Steven Chester, MI
 Sasha Chetyrkina, OH
 Chief Shining Turtle
 Mathew Child, ON
 Trudy Chin, ON
 Vinni Chomeau
 Patricia Chow-Fraser, ON
 Carol Christensen, MI
 Claudia Christensen, IL
 Steve Christi, MI
 Gavin Christie, MI
 Danielle Christoffel, IL
 Lisa Christopherson, WI
 Winifred Chrzanowski, MI
 Jan Ciborowski, ON
 Barbara Cicalese, PA
 Richard Cichon, MI
 Geraldine Ciesielski, PA
 Diana Cirafesi, PA
 Elizabeth Cisar, IL
 Rachel Cisler, WI
 Citizens Concerned for
 Michipicoten Bay, ON

Citizens for a Safe Environment, ON
 Citizens for Renewable Energy, ON
 Robert Civettini, IL
 Frank Cizek, MI
 Alan Clark, ON
 Brooks Clark, PA
 Edythe Clark, ON
 Jeanine Clark, IL
 Norman Clark, MI
 Sanford Clark, ON
 Dave Clark Huber, CA
 Karen Claus, IL
 Clean Water Action, IL
 Clean Wisconsin, WI
 Helen Cleaver, PA
 Sherri Cleaves, ON
 Kimberly Clemens, PA
 Melanie Clevert, IL
 Mary Jo Clewley, MI
 Nancy J. Cline, IL
 Ed and Jessie Clinton, MT
 Stephanie Cloak-Sander, WI
 Stephanie Cloutier, WI
 Emily Cloyd, NY
 Leslie Cochran
 Barbara Cochrane, IL
 Joseph Coco, IL
 Rita Cocquyt, MI
 Dennis Coffman, PA
 Harold Cohen, PA
 Mark Cohen, MD
 Pamela Cohen, MI
 Sharon Cohen, IL
 Nancy Cohn, PA
 Mathew Cole, WI
 Lewis Colello, PA
 Bruce Coleman, NY
 Carmen Coleman, NY
 Gilbert Coleman, PA
 Phil Coleman, PA
 Robert Coleman, IL
 Linda Coleman Shirkey, MI
 Mark Coleman, IN
 Lori Colgan, VT
 Sister Kathleen Coll, SSJ, PA
 Christine Collard, ON
 David Collins, WI
 Peggy S. Collins, MI
 Maritza Colon, IL
 Comité exécutif de la Communauté métropolitaine de Québec, QC
 Richard Comito, MI
 Comité ZIP Jacques-Cartier, QC
 Communities Quality Improvement, ON
 Vincent Como, IL
 Craig Compton, IL
 James Connell, WI
 Eileen Conner, PA
 Iona Conner, PA
 Carrie Connie, MN
 Phillippa Connon, IL
 Mary Connors, IL
 Ann Conroy, PA
 Conservation Ontario, ON
 Marie Considine, IL
 Caroline Constant, MI
 Holly Conte, DE
 Judy Contin
 Amy Converse, IL
 Mary Conway, IL
 Ann Cook, IL
 Carol Cook, IL
 Janice Cook, IL
 Lindal Cook, IL
 Samuel Cooke, WI
 John Coon, NH
 Jim Cooper, OH
 John Cooper, ON
 Ruth Cooper, MI
 Brian Cope, PA
 Sarah Coppinger, PA
 Daria Corbett, IL
 Lois Corbett, ON
 Lowell D. Corbin, MI
 Kristian Corby, WI
 James Corcoran, MI
 J. Alex Cordaro, PA
 Brian Corie, PA
 Lynda Corkum, ON
 Lynda Corkum, ON
 Karen Cornelius, WI
 Abigail Corso, IL
 Jenni Cortinas, WI
 Patriche Cosette, QC
 George Costaris, MI
 Lanie Costeas, IL
 Jennifer Costello, PA
 Katherine Costin, IL
 James Cotner, MN
 Joseph Cotruro, DC
 Patricia Cotter, IL
 Robert Coulas
 Melanie Coulter, ON
 Melanie Coulter
 Council of Canadians, ON
 Council of Great Lakes Industries, MI
 Nancy L. Cowger, IL
 Dave Cowgill, IL
 Catherine Cox, IL
 Jack Cox, OH
 Judith Cox, MI
 Nick Cox, ON
 Brett Coy, IL
 Greg Coy, PA
 Sarah Coyle, WI
 Donna Craig, IL
 Gabriel Craig, IL
 Thomas Crame, MI
 Tom Crane, MI
 Sean Cranley, WI
 Alastair Crawford, ON
 Susan Crawford, IL
 Nicola Crawhall, ON
 Dan Craycraft, OH
 Catherine Creber, ON
 Amelia Crenshaw, IN
 Kathryn Crestani, OH
 Christopher Cretella, PA
 Carey Crocker, MI
 Patricia Croom, MI
 Daniel Crosby, WI
 Don Cross
 Warren Cross, WI
 Susan Crothers-Gee, IL
 Tammy Crouthamel, PA
 Lindsay Crowder, NY
 Michelle Crowder, VT
 Gloria Crowe, ON
 Betty Cruz, PA
 Laura Cryderman, MI
 Julianna Cuevas, IL
 Mary Jo Cullen and Torfinn Hansen, ON
 Kathleen Cummings, IL
 James Cunningham, ON
 Randy Cunningham, OH
 Linda Curry, PA
 Anne Cusack, MI
 Cuyanoga River RAP, OH
 Patricia Czach, IL
 Shelley Czeizler, MI
 Meghan D., PA
 Alexandre da Silva, IN
 Thomas W. Daggett, IL
 Louis Daher, MI
 Jesse Dahir, WI
 Sally Dahir, WI
 Abbie Daigle, WI
 Philippe Daigle, QC
 Melissa Daimaschke, MI
 Devon Dal Degan, IL
 Adrienne Dale, MI
 Bev Dale, ON
 Glen Dale, ON
 Scott Dalebroux, IL
 Katherine Daley, PA
 Mayor Richard Daley, IL
 Lou DalMonte, IL
 Tommy DaMario, IL
 Lucy Dames, NY
 Michael D'Andrea, ON
 Bonnie Danes, ON
 Susan Daniel, IL
 William Daniels, PA
 David Dankert, IL
 Elizabeth Darovic, IL
 Katy Darr, IL
 George Darrow, WI
 Nancy Darrow, WI
 Beth Daubert, PA
 Erin Daughton, IL
 Pamela David, IL
 Anne Davidson, MI
 Erin Davidson, IL
 Robert Davies, WI
 Ryan Davies, IL
 Adam Davis, IL
 Amanda Davis, IL
 Amy Davis, WI
 Cameron Davis, IL
 Emily Davis, IL
 Michele Davis, PA
 Patrick Dawdy, MI
 Maureen Dawley, PA
 Jennifer Day, MI
 Bonnie De Bold, PA
 Elizabeth de la Baume, IL
 Susan De Vos, WI
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 Lawrence Cities Initiative
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 Roundtable, ON
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 John Kingsmill, IL
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 Clare Kirkpatrick, IL
 Jan Kirsch, IL
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 Nancy Klaiber, IL
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 Sarah Kloecker, PA
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 Summer Kozisek, WI
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 Lowell Kraft, MI
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Jere Martin, PA
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Said Mbwana, ON
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Damien McAnany, IL
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Jenny McBride, IL
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Mike Mccelhone, ON
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Rachel McClain, IL
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Simon Mcleod, ON
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Suzanne McElroy, PA
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Thomas McGinn, MI

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Cornelius McHugh, PA
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Stephanie McKenna, PA
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Chris McLaughlin, ON
Rachelle Mclaughlin, MI
Hannah McLimans, WI
Mary McMahan, PA
Michael McMahan, ON
Don McMaster, ON
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Gerard McMullen, WI
William McMullin, MI
Robin McNamara, MA
Karen McNeill, MI
Calium McPhail, IL
Rob McRae, ON
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David McRobert, ON
Emily McRobert, ON
Ed Mead, ON
Ilona Meagher, IL
Shawn Meagher, IL
Tamara Means, OH
Mark Meccia, IL
Lindy Mechefske, ON
Stephen Medd, ON
Kathy Medic, IL
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Mike Meeker, ON
Carol Meers, IL
Richard Meers, IL
Stan Mehaffey, IL
Tracy Mehan, VA
Susan Meiers, IL
Michelle Meinhardt, MI
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Paul Meister, PA
James Melnychuk, IL
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Don and Joan Memastoa,
ON

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Yuliana Mendieta, IL
Durango Mendoza, IL
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Sukumaran Menon, NY
Viji Menon
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Gail Merritt, IL
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Mark Messing, MI
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Janice Metelak, WI
Alexander Metz, WI
John Metzger, IL
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Mary Meyer, OH
Carol Meyers, PA
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Laura Michals, IL
Erin Michel, OH
Eric Michelson, WI
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Vladimir Mikhelson, IL
Greg Mikkelson, WI
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Kathleen Mikulski, IL
Idalia Milan, ON
Joan Miles, ON
Margaret Milhaupt, MI
Tamara Miljevic, ON
Beverly Miller, MI
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Debra Miller, IL
Edmund Miller, IL
Eric Miller, PA
Eric Miller, WI
Henry Miller, MI
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Judy Miller, MI
Kevin Miller, IN
Mayor David Miller, ON

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 Sarah Miller, ON
 Terrie Miller
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 John Mills, ON
 Odakwei Mills, PA
 Victoria Mills, IL
 Isla Milne, ON
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 Michelle Minyon, PA
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 Ticia Mitchell, ON
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 Katherine Moll, MI
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 Monroe County Executive,
 NY
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 Kelly Montgomery, ON
 Malcolm Montgomery, ON
 Andrea Moonsammy, IL
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 Patricia Moore, PA
 Melissa Moos, ON
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 Jean Morand
 Phyl Morello, PA
 Angela Moreno, ID
 Daniel Morgan, MI
 Paul Morgan, ON

Paul H. Morgan, ON
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 Lois Morrison, IL
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 Stephan Morse, MI
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 Ohio Department of Natural
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 Doreen Pinkney, ON
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 Abdul Pirani
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 Susan Pollock, PA
 PollutionWatch, ON
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 Marguerite Ramlow, WI
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 Julie Rice, IL
 Waub Rice, ON
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 Janie Richardson, PA
 Mark Richardson, MI
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 Stacey Richardson, MI
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 Jack Richmond, IL
 Robert Richter, IL
 Jerome Rickert, IL
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 Mollie Riess, IL
 Christopher Riff, IL
 Timothy Rigby, ON
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ZIP les 2 rives, QC
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If you use the water, it matters



*“As you review the
Great Lakes Water Quality
Agreement
please make sure that
it eliminates emerging threats
to the lakes, that it encourages
ecological recovery and restoration,
and it enables members of the public
like myself to be a part
of the decision-making
process.”*

