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The Great Lakes-St. Lawrence River Basin From an IJC Perspective

*James G. Chandler**
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I. WHAT IS AN IJC PERSPECTIVE?

There are, of course, many ways to look at the Great Lakes-St. Lawrence Basin. The focus can be on geography, water quality, socio-economic considerations or legal and regulatory regimes, to name just a few. In fact, the International Joint Commission ("IJC") now tries to incorporate all relevant considerations in its work through what is termed an "ecosystem approach". However, in the last analysis, the IJC's perspective is the perspective of its mandate, which is set out in the Boundary Waters Treaty of 1909.

The Boundary Waters Treaty was concluded between the United States and the United Kingdom at a time when the U.K. had responsibility for Canada's international relations. As Canada gained the attributes of nationhood in the 1920s, it succeeded to Britain's rights and duties under the Boundary Waters Treaty. The immediate effect of the Treaty was to resolve two specific issues: the apportionment of the St. Mary and Milk Rivers in the West and the diversion of water for power generation at Niagara Falls. In addition, it provided a mechanism for resolving difficulties between the two countries concerning the use of waters flowing along or across the boundary. It also went somewhat further and, in the preamble, stated that both Parties, who are today the Governments of Canada and the United States, were equally desirous:

. . . to prevent disputes regarding the use of boundary waters and to settle all questions which are now pending between the United States and the Dominion of Canada involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along their common frontier, and to make provision for the adjustment and settlement of all such questions as may hereinafter arise

To achieve this goal, the Treaty set out a number of principles and established the IJC to play a key role in the resolution and avoidance of disputes. Since that time, the IJC has become one of several mechanisms available to assist the two Governments in resolving issues along the border.

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According to Article VII of the Treaty, the Parties agreed:

... to establish and maintain an International Joint Commission of the United States and Canada composed of six Commissioners, three on the part of the United States appointed by the President thereof, and three on the part of the United Kingdom appointed by his Majesty on the recommendation of the Governor in Council of the Dominion of Canada.

While Article XII of the Treaty states that there will be United States and Canadian Sections of the Commission, it also confirms the independence of the Commission from government by requiring that Commissioners declare in writing that they will faithfully and impartially perform the duties imposed upon them under the Treaty. Over the years, it has come to be increasingly accepted that the Commission is an independent international organization, and this status is reflected in the immunity of the Commission, individual Commissioners, experts and staff from all forms of legal process in both countries regarding acts performed in their official capacities. It is also reflected in the status of intergovernmental organization which has been accorded to the IJC at United Nations conferences, including the conference in Rio de Janeiro on environment and development.

The Boundary Waters Treaty provides for the Canadian and United States sections of the Commission to each appoint a secretary and employ engineers and clerical assistants. Today, the IJC has a full time staff of about sixty, roughly half of whom are engaged in working on the Great Lakes Water Quality Reference at the Commission's regional office in Windsor, Ontario. In addition, the Commission has developed an extensive advisory network of boards, task forces and working groups made up mainly of federal, state and provincial government employees whose time is made available to the IJC without charge to the Commission. During the past several years, the Commission has called upon an increasing number of individuals from a wide range of non-governmental sources, including industry, universities and environmental advocacy groups. This relatively large array of advisory personnel belonging to the Commission family has sometimes been confused with the Commission itself. It is, therefore, worth reminding ourselves that the Commission in fact consists of the six Commissioners. It is also important to emphasize that when persons are asked to serve on Commission boards, task forces and working groups, the Commission stresses that they are being asked to act in their personal and professional capacities, not as representatives of their employers or other groups with whom they may be affiliated.

The Boundary Waters Treaty also provides that the salaries and personal expenses of the Commission and the secretaries shall be paid by their respective governments, and that all reasonable and necessary joint expenses of the Commission shall be paid in equal amounts by the Parties.

The Boundary Waters Treaty assigns the IJC three essentially very different types of tasks, which can be regarded as falling into the following categories: (1) quasi-judicial determinations; (2) investigative and advisory assignments; and (3) arbitrations. The Commission has never been asked to undertake the third role.

Articles III and IV of the Boundary Waters Treaty assign the IJC the quasi-judicial or licensing function of deciding whether certain kinds of works or activities can be built or undertaken in rivers or lakes that flow along or across the international boundary. In very general terms, unless there is a special agreement between the United States and Canada, new (i.e., post 1909) uses, obstructions and diversions of boundary waters cannot take place without the prior approval of the Commission, if the proposed use, obstruction or diversion will affect the natural level or flow of those waters on the other side of the boundary. The term "boundary waters" is defined in the Preliminary Article of the Treaty to mean waters along which the international boundary passes. Similarly, in the absence of an inter-governmental special agreement, new obstructions or protective works cannot be constructed or maintained in waters flowing from boundary waters or downstream from the boundary in rivers that flow across the boundary without the prior approval of the Commission, if the obstruction will raise the natural level of waters on the other side.

When a project appears to require Commission approval, an application is initially submitted to the government within whose jurisdiction work will be undertaken. The government then refers the matter to the Commission for consideration and, if appropriate, approval.

When considering applications for approval to build or undertake works falling within the provisions of Articles III and IV, the Commission is required to apply the rules or principles which the Parties have agreed to in Article VIII. Since these principles, in effect, determine when the Commission can and cannot approve works or undertakings in boundary and transboundary waters, including the Great Lakes-St. Lawrence Basin, it is important to review them.

First of all, Article VIII stipulates that the High Contracting Parties (i.e., Canada and the United States) shall have, each on its own side of the boundary, equal and similar rights in the use of boundary waters. However, Article VIII goes on to say that the requirement for an equal division may, in the discretion of the Commission, be suspended in cases of temporary diversions along boundary waters at points where such equal division cannot be made advantageously because of local conditions and where such diversion does not diminish elsewhere the amount available for use on the other side. Article VIII also sets up an order of precedence for the use of waters subject to Articles III and IV. This order places domestic and sanitary purposes first, followed by uses for navigation (including the service of canals for the purposes of navigation), and then uses for power and irrigation in last place. According to the

Treaty, no use should be permitted which tends materially to conflict with or restrain any other use which is given preference over it.

Under the Boundary Waters Treaty, the Commission can establish its own rules of procedure, and attention needs to be drawn to Rule 25, which reflects the importance that the Parties attach to rights of navigation. Article I of the Treaty states that the High Contracting Parties agree that the navigation of all navigable boundary waters shall forever continue free and open for the purposes of commerce to the inhabitants and to the ships, vessels and boats of both countries equally, subject to non-discriminatory laws and regulations not inconsistent with the privilege of free navigation. Under Rule 25, if the Commission considers it desirable to render a decision which affects navigable waters in a manner or to an extent different from that contemplated in the original Application, the Commission will consult with the appropriate Government(s) before making a final decision.

The need for IJC approval in cases falling within the terms of Articles III and IV is additional to and does not replace any domestic requirements in the country where the work or undertaking will take place. Commission involvement helps fill gaps that cannot be filled by domestic law alone. Of particular importance are the sections of Article VIII that require the Commission to provide for the protection and indemnification of interests that may be injured by proposed works or undertakings. We believe that one of the secrets to the longevity of the Boundary Waters Treaty is that its provisions were formulated in ways that can and have been adapted to changing times and situations. For example, the term "interests" has expanded and changed to include environmental concerns which were undreamed of in 1909. However, any such changes must also take account of the need for certainty and vested rights. Difficult issues arise when new interests appear and call for changes that may affect other interests, as when recreational boaters seek to have regulation patterns altered to protect their boats at the possible expense of other established interests such as riparian, hydroelectric power and navigation interests.

While the Commission seeks, where possible, to function on the basis of consensus, differences can and have occurred on rare occasions. Article VIII concludes, therefore, that a majority of Commissioners have the power to render decisions, and if the Commission is equally divided, separate reports shall be made by the Commissioners on each side to their own government. Under the Commissions' Rules of Procedure, decisions are not to be taken without the concurrence of at least four Commissioners, so as to ensure the participation of at least one Commissioner from each country. There is no provision for judicial review of IJC decisions, which can be varied only by a special inter-governmental agreement. This places a heavy responsibility on Commissioners to act fairly in the best interests of both countries and of all affected by their decisions.

Because the Commission's Rules of Procedure require that Applications for Orders of Approval must be submitted through the government of the country where a proposed project will be located, that government in effect has the ability to determine whether, when and by whom Applications will be submitted. In cases falling within Articles III and IV, both Governments are under an obligation to each other to ensure that if there is no special agreement, Commission approval will be obtained. However, it is worth noting that the Commission cannot require the Governments to submit Applications, and does not have the power to enforce either the terms of the Boundary Waters Treaty or its own Orders. These are matters that fall within the jurisdiction of the Canadian and United States Governments. In 1976, the Commission did write to both Governments asserting its right to decide whether a particular case falls within the terms of Article VII of the Boundary Waters Treaty, so as to require IJC approval. Both Governments rejected this position.

To require approval of the IJC under Article III, a project must affect the natural level or flow of boundary waters on the other side of the border. Often a project may have only a theoretical rather than a measurable effect on such levels and flows. For example, there are literally thousands of consumptive uses of Great Lakes water for domestic, municipal, agricultural and a variety of industrial purposes. In these situations, most of the water withdrawn is returned to the system, and, in practice, IJC approval has not been obtained when consumptive uses do not lead to measurable changes in levels and flows. However, given the responsibility of the Governments to assure compliance with the Treaty, proponents of projects can protect themselves by asking the Governments whether IJC approval is required in a particular case.

When the IJC receives an Application for an Order of Approval pursuant to Article III or IV of the Boundary waters Treaty, it often establishes a Board composed of an equal number of Canadian and U.S. members, many of whom have specialized knowledge of the relevant issue. This Board will review the Application, assess the impacts of the proposed project and report its findings to the Commission. In recent years, there has usually been an existing Board in place to do this work. After reviewing the Board's report, the Commission has, in the past, proceeded to public hearings, where interested persons could make their views known personally or through counsel. In addition, the Commission has invited written submissions from interested members of the public.

If, after taking into account all relevant considerations, the Commission decides to approve a proposed project, it usually does so on terms and conditions aimed at protecting other interests. In addition, the Order of Approval normally calls for the appointment of a so-called Board of Control, again composed of an equal number of Canadian and United States members, to assist with and oversee implementation of the Order. In addition, as a matter of practice, the Commission states in its Orders

that it retains continuing jurisdiction over the matter at issue so that it can, at its own initiative or the initiative of others, alter the Order as appropriate without having to wait for a further request from the Government(s), the applicants or others.

Several projects along the border have been authorized using the above procedures, ranging from the Grand Coulee Dam on the Columbia River in the West to small hydroelectric power plants on the St. Croix River in the East.

Under Article IX of the Boundary Waters Treaty, either the Canadian Government or the United States Government may refer any questions or matters of difference arising between them along the frontier to the Commission and may ask the Commission to report on the facts and circumstances of the particular issue and to provide the two Governments with appropriate conclusions or recommendations. The government(s) giving the so-called "Reference" may limit the scope of the Commission's inquiry and response. Furthermore, the IJC's report under an Article IX Reference cannot be regarded as a decision either on the facts or on the law. According to Article IX, the IJC has to make a report to both Governments in all cases in which all or a majority of Commissioners agree, and, in cases where there is a disagreement, the minority may make a joint report to both Governments or separate reports to their respective governments. If the Commission is equally divided, the Commissioners on each side must make separate reports to their own government(s).

While, in theory, a Reference may be provided to the Commission by either government alone, in practice, References have always been given by both Governments. Probably the best known current example of a Reference is found in Article VII of the 1978 Great Lakes Water Quality Agreement, where the two Governments have directed the Commission to assist in the implementation of that Agreement, primarily by advising them on progress to achieve the purpose and objectives of the Agreement.

When the Commission receives an Article IX Reference, it traditionally appoints a Study Board, again composed of an equal number of United States and Canadian members, to carry out investigations and provide such expert advice as the Commission requires to respond to the issues raised by the Governments. There have sometimes been variants to this approach. The Canadian and United States Governments have decided that, under the Great Lakes Water Quality Reference, the Commission is to be advised by a Water Quality Board and a Science Advisory Board whose members are appointed by the IJC after consultation with governments. In addition, the Commission has used a number of mechanisms including task forces, roundtables, seminars and even live-by-satellite television conferences to assist it in responding to this Reference. In the case of the 1986 Reference on Fluctuating Water Levels of

the Great Lakes, Commissioners and members of their advisory staff at one stage played a significant part in the actual investigations.

In its response to References dealing with pollution and water allocation, the Commission has often recommended that it be authorized to continue to monitor waters on an ongoing basis. If such a recommendation is accepted, as has usually happened, the Commission may then appoint a Board to undertake this continuing task, as has been the case with regard to monitoring water quality in the St. Croix River, in Maine and New Brunswick.

Many important issues have been considered by the Commission under Article IX References. These include the 1928 Reference to assess damages in Washington State due to air pollution from the Trail Smelter in British Columbia; the 1944 Reference to develop principles for sharing of downstream benefits on the Columbia River; the 1975 Reference on potential transboundary consequences of the proposed Garrison Diversion unit in North Dakota; and more recently the 1984 Reference on potential transboundary implications of a proposed coal mine in British Columbia along the north fork of the Flathead River, which forms the boundary of Glacier National Park in Montana.

Two other matters which do not fall neatly within either of the first two categories deserve mention. The first is the apportionment of the St. Mary and Milk Rivers. Under Article VI of the Treaty, the two rivers are to be considered as one and the waters are to be shared equally between the two countries. The Commission was charged with the responsibility of administering the apportionment so as to maximize beneficial use of the available water. The second is the diversion of waters from the Niagara River for power generation, which was originally dealt with in Article V of the Boundary Waters Treaty. However, in 1950, Canada and the United States concluded the Niagara River Diversion Treaty, which modified the terms of Article V and assigned the Commission a Reference which is discussed below.

Article X of the Boundary Waters Treaty enables the Canadian and United States Governments to refer any question or matter of difference arising between them to the IJC for a decision or finding by a majority of the Commissioners. However, Article X states that this type of Reference must be given with the consent of both Governments. In the United States, this means with the advice and consent of the Senate, and in Canada, this means with the consent of the Governor General in Council. This provision of the Treaty has, however, never been used, and, in the few cases where arbitration has occurred between the two countries, special conventions have been concluded.

In the most general terms, it may be said that the Commission has been created to serve the Canadian and the United States Governments by assisting them in avoiding and resolving contentious or potentially difficult issues. The Commission fulfills this role by responding to References and by deciding on Applications for Approval to use, obstruct or

divert boundary waters and transboundary rivers. In both cases, the two Governments decide when a matter will come before the Commission, and the Commission is, of course, dependent on the Governments for the financial and personnel resources it needs to carry out its work.

II. AN HISTORICAL REVIEW OF THE IJC'S INVOLVEMENT WITH THE GREAT LAKES-ST. LAWRENCE RIVER BASIN

It has been said that the Great Lakes-St. Lawrence Basin contains perhaps twenty percent of the world's freshwater supplies and is the center of the continent's industrial heartland. It is, therefore, not surprising that historically a great deal of the IJC's work has been devoted to issues in this particular region. A brief review of these issues, which can be grouped under the following headings, may help to clarify the Commission's role: (1) Applications for Approval of specific projects; (2) References regarding the regulation of levels and flows; (3) References regarding water quality; and (4) References regarding air quality.

The Commission received its first application for the approval of structures in the Great Lakes-St. Lawrence River Basin in 1913. In that year, the Michigan Northern Power Company in the United States (now Edison Sault Electric Co.) and the Canadian firm of Algoma Steel Corporation (now Great Lakes Power) each made similar applications to the Commission for approval to divert water from the St. Mary's River for power purposes and to construct a control structure with gates ("compensating works") across the St. Mary's River near the outflow of Lake Superior.

In May 1914, following public hearings, approval to proceed with construction was granted on the condition that the level of Lake Superior would be maintained "as nearly as may be" between the elevation of 600.5 feet and 602.0 feet, which was approximately the upper half of the historic range. An International Lake Superior Board of Control was established to assist the Commission in implementing the Order by ensuring that the two applicants complied with its terms and by formulating operating rules for the regulation of Lake Superior. Since 1921, the discharge of water from Lake Superior has been governed by regulation plans developed by the Board and approved by the Commission. Experience has shown that it is not possible to restrict the range of stage as much as hoped, and the Orders which govern the outflow from Lake Superior have themselves been amended on several occasions. In 1978, the Commission, in the course of approving redevelopment of Great Lakes Power's hydroelectric development at Sault Ste. Marie, was instrumental in obtaining facilities to protect the fishery in the St. Mary's rapids. A year later, in 1979, the Commission issued another supplementary Order of Approval aimed at maintaining the level of Lakes Superior, Michigan and Huron at the same relative positions within their recorded

ranges of stage. The Commission has also taken emergency action at various times to deal with high and low flows.

It was almost forty years later that the Commission approved works for the St. Lawrence Power Project, which in effect regulates outflows from Lake Ontario. Only the outflows from Lakes Superior and Ontario are regulated by the Commission. Outflows from other Great Lakes are essentially unregulated. In June 1952, applications were made by the two Governments for approval to proceed with the construction and operation of works to generate power in the international section of the St. Lawrence River. The Canadian Government in its application also announced its intention to construct the works necessary to assure twenty-seven foot navigation between Lake Erie and Montreal, a project completed with the involvement of both Governments. Following a series of public hearings in the summer and fall of 1952, the Commission approved the Applications in October. The 1952 Order, as subsequently amended in 1956, directed that, upon completion of the works, the discharge and the flow through the international section was to be regulated according to various conditions and criteria designed to protect upstream and downstream riparian owners; to safeguard power development below the international rapids section; and to ensure that the uses of the waters of the St. Lawrence River for domestic, sanitary and navigation purposes would be given preference over power as specified in the Boundary Waters Treaty. One of the basic conditions was that Lake Ontario must be regulated within a range of stage from the elevation of 242.8 feet (navigation season) to the elevation of 246.8 feet, subject to a number of criteria specified in the Order. Once again, an International Board of Control was established by the Commission to oversee implementation of the Commission's Order.

It is instructive to note that the development of the St. Lawrence River for navigation and power purposes was originally considered as part of an overall Great Lakes-St. Lawrence Basin Agreement along with other projects such as increased diversions for hydroelectric power at Niagara Falls. Agreements were signed in 1932 and 1941, but never received consent from the United States Senate and, therefore, never entered into force. Rather than attempting another general agreement, the two Governments focused on specific projects. The 1950 Niagara Treaty addressed the issue of increased diversions for hydroelectric power, and the Boundary Waters Treaty was used as the vehicle to authorize power development in the St. Lawrence River. Another special agreement was used to authorize the St. Lawrence Seaway. In this way, history illustrates the value of having a variety of mechanisms available to facilitate achieving important binational goals.

Two other matters also deserve special mention. The Chicago Diversion, which pre-dates the Boundary Water Treaty and which has at times been a focus of controversy, is not a matter that the Commission has been asked to address, other than to look at the effects of changes in

the amount of the Diversion on Great Lakes levels and flows. Secondly, special arrangements regarding the Long Lac and Ogoki Diversions were established bilaterally between the two Governments, but appear to apply only to the use of those waters at Niagara. It is interesting to note that in 1990, the Secretary of the Canadian Section of the Commission stated in a letter to the President of Great Lakes Power Limited:

. . . in the absence of special provision, once such waters [i.e., waters diverted into Lake Superior] enter the lake, they become boundary waters . . . and are to be treated by the Commission in the same way as any other boundary waters.

In addition to approval of the major hydroelectric generation projects which regulate the outflows from Lake Superior and Lake Ontario, the Commission was also asked to approve a number of other projects in the Basin. In 1917, the Commission approved an Application to dredge the channel in the St. Clair River on the United States side of the boundary for navigation purposes, and to construct a submerged weir across the river from the American to the Canadian side to compensate for the slight lowering of Lake Huron that would result from the dredging.

In 1918, an Application was approved by the Commission for the construction of another submerged weir in the South Sault channel of the St. Lawrence River near Massena New-York to improve flows to the Massena Power House.

In 1925, the Commission approved an Application from the Buffalo and Fort Erie Public Bridge Company for permission to construct and maintain a highway bridge over the Niagara River between Buffalo and Fort Erie. It is interesting to note that in this case, even through there was a difference of view between the two Governments as to whether the IJC's approval was needed, with the U.S. Government maintaining it was not, the company, to be certain, sought to obtain and eventually received Commission approval.

In 1961, and again in 1963, the Commission issued Orders approving construction of structures and works in the Niagara River, and in 1964 the Commission issued an Order of Approval for the construction and operation of an ice boom in Lake Erie near its outlet to the Niagara River. The boom accelerates the formation during freeze-up of a stable upstream ice cover and helps to prevent downstream ice jams during break-up by reducing the flow of lake ice into the Niagara River.

Most recently, in 1976, the Commission approved construction of the Toussaint Causeway to effect partial closure of a section of the St. Lawrence River near Iroquois, Ontario, so as to reduce currents for shipping.

In addition to these Applications for Orders of Approval, the Commission has received a number of References relating to levels and flows in the Great Lakes-St. Lawrence River Basin. As early as 1912, the

Commission was asked by the two Governments to investigate and report on the necessity of building dikes and compensating works near Amherstburg or elsewhere in the Detroit River to compensate for dredging and excavation in the Livingstone Channel. Eight years later, in 1920, the Governments of Canada and United States requested the Commission to investigate and report on possibilities for improving the St. Lawrence River between Lake Ontario and Montreal for deep water navigation and power generation — a concept that, as we know, was finally realized in the 1950s.

In 1950, the Canadian and U.S. Governments concluded the Niagara River Diversion Treaty, which amended Article V of the Boundary Waters Treaty and conferred a Reference on the IJC to make recommendations concerning the nature and design of remedial works necessary to check the erosion of Niagara Falls and to preserve and enhance their beauty, while at the same time permitting the production of the added power envisaged by the 1950 Treaty. The Commission was also asked to make recommendations about allocating the task of constructing the remedial works between Canada and United States and to provide an estimate of the cost of those works. In its 1953 report, which was accepted by both Governments, the Commission recommended, among other things, that it be authorized to establish a Control Board to supervise the operation of the proposed control structure and to ensure that the level of the Niagara River and Lake Erie would not be adversely affected. This recommendation was accepted and the Commission established and maintains an International Niagara Board of Control.

In October 1964, the two Governments asked the Commission “to determine whether measures within the Great Lakes Basin can be taken in the public interest to regulate further the levels of the Great Lakes, or any of them and their connecting waters so as to reduce the extremes of stage” The Commission responded to the Governments on June 30, 1976, following ten years of technical investigation and twenty-two hearings, concluding that water level fluctuations in the Great Lakes are primarily caused by nature, although interventions by people have resulted in some limited modifications. Since the Great Lakes already possess a high degree of natural regulation, the Commission concluded that only a limited reduction in the range of water levels is practical and that protection from high and low water levels could not be achieved from lake regulation alone. The Governments responded, in early 1977, with several new References which had been recommended by the Commission in its 1976 Report. These included requests for (1) a study of Lake Erie regulation; (2) a study of Great Lakes diversions and consumptive uses; (3) the establishment of a Great Lakes Technical Information Network; and (4) the establishment of a Great Lakes Levels Advisory Board. The Commission is now in the course of examining and reporting upon methods of alleviating the adverse consequences of fluctuating water levels in the Great Lakes-St. Lawrence River Basin under a Reference

given to it in 1986. The Study Board is scheduled to complete its work in March 1993. We expect that it will be reporting on such matters as additional regulatory works, dredging, shoreline protection measures, possible land use control strategies and early warning systems.

On August 1, 1912, just eight months after the Commission was established, it received its first Pollution Reference. In this Reference, the Commission was asked to examine and report on the extent, causes and location of pollution in boundary waters, and to recommend possible remedies or means of preventing the pollution of these waters. This was the first of many References that have asked the Commission to assist the Governments in determining what measures are required to assure that Article IV of the Boundary Waters Treaty is honored. The second paragraph of Article IV states:

It is further agreed that the waters herein defined as boundary waters and waters flowing across the boundary shall not be polluted on either side to the injury of health or property on the other.

After extensive investigations, the Commission provided a report to the Governments in August 1918 which focused mainly on water quality in the Detroit, Niagara, St. Mary's, St. Clair and St. Lawrence Rivers. The report found that the pollution in these rivers was in substantial contravention of the spirit of the Boundary Waters Treaty, to the extent that the situation imperilled the health and welfare of citizens. According to the Report, sewage from vessels and municipal and industrial sources was the major cause of pollution, and remedies could be provided, among other things, by treatment plants. The Report concluded: ". . . it is advisable to confer upon the International Joint Commission ample jurisdiction to regulate and prohibit this pollution of boundary waters and waters crossing the boundary." In March 1989, the two Governments asked the Commission to draft either reciprocal legislation or a treaty to carry out its recommendations. On October 6, 1920, the Commission submitted a draft treaty, but the matter was not pursued further.

It was not until twenty-five years later, in 1946, that the Commission received another Reference to look at pollution problems in the Great Lakes-St. Lawrence River Basin. The 1946 Reference focused on pollution problems in the St. Clair River, Lake St. Clair and the Detroit River, but was subsequently extended to include the St. Mary's and Niagara Rivers. The Commission reported to the Governments in 1950, recommending remedial measures as well as water quality objectives. The Commission also recommended that it be authorized to establish and maintain continuing supervision over pollution of these boundary waters. The Commission's recommendations were approved by the two Governments, and the Commission appointed two advisory boards. In 1968, the Commission relied on this Reference to hold its first "International Public Meeting" on Water Quality at Niagara Falls, New York, to learn why the objectives were not being met in the Niagara River and to

review the programs and schedules of the local agencies concerned. The Commission reported to both Governments on this meeting as well as on similar meetings held in 1969 to consider the St. Mary's, St. Clair and Detroit Rivers.

On October 7, 1964, the Commission received a further Pollution Reference regarding the waters of Lake Erie, Lake Ontario and the international section of the St. Lawrence River. Following a number of interim reports dealing with such matters as eutrophication, oil spills, mercury and polychlorinated biphenyls, the Commission reported finally to the Governments in December 1970, noting the advanced state of eutrophication in the Lakes and recommending urgent remedial actions by the two Governments and by all responsible jurisdictions in both countries. The Commission, in its report, recognized the necessity for the Governments to make commitments to each other on water quality objectives and on programs to achieve them. The report went on to recommend that the Commission be given authority, responsibility and the means for coordinating and ensuring the necessary surveillance and monitoring of water quality and of the effectiveness of pollution abatement programs. In addition, it recommended that the 1964 Reference be extended to an investigation of pollution of the remaining boundary waters of the Great Lakes System and waters flowing into it. Implementation of these recommendations led, among other things, to the 1972 Great Lakes Water Quality Agreement between Canada and the United States, which has been credited with the success achieved in confronting the eutrophication problem, particularly in Lake Erie.

In 1972, the Commission received three References dealing with Great Lakes pollution. The first, contained in the 1972 Great Lakes Water Quality Agreement, called on the Commission to assist in the implementation of that Agreement. The second requested the Commission to conduct a study of water quality in Lakes Huron and Superior, while the third requested the Commission to study the pollution of the boundary waters of the Great Lakes System from agriculture, forestry and other land use activities.

The Commission submitted its report on water quality in Lakes Huron and Superior in 1979. This report called for stronger controls on phosphorus and toxic substances and recommended controls on growth and development to maintain the excellent quality of those upper lakes. The Commission also proposed that the Governments adopt a policy of non-degradation for the upper lakes and (1) develop the scientific and technical information base required for proper management; (2) encourage the development of new innovative manufacturing and waste treatment technology; (3) encourage public education and involvement in long range planning and in the decision making process; and (4) encourage industrial participation.

The Commission submitted its final report to the Governments on Pollution in the Great Lakes Basin from Land Use Activities in March

1980. In this report, the Commission said that drainage from farms and urban areas was causing a more significant part of the pollution of the Great Lakes than was generally recognized. The Commission concluded that controlling so-called non-point pollution would require a new approach to environmental policy and recommended the development of a comprehensive management strategy. While such a strategy would need a high degree of coordination between and within governments, it recommended that considerable responsibility for implementation of corrective programs be given to the local level and that a voluntary approach to remedial action be stressed.

At the time the 1972 Great Lakes Water Quality Agreement was being negotiated, eutrophication caused by phosphates in household detergents, municipal sewage and agriculture runoff was considered to be the main water quality problem in the Great Lakes-St. Lawrence River Basin, and especially in Lake Erie. Controlling phosphate input was, therefore, a major focus of the 1972 Agreement. In the Agreement, the Parties also committed themselves to a number of general and specific water quality objectives for the boundary waters of the Great Lakes as well as to programs and other measures directed toward achieving these objectives. The Commission's responsibilities under the 1972 Agreement included the collection, analysis and dissemination of information concerning the operation and effectiveness of programs and measures to achieve the water quality objectives, as well as tendering advice to the Parties and providing assistance with the coordination of joint activities envisaged by the Agreement.

Following a review, in 1977, of the operation and effectiveness of the 1972 Agreement, a new and more comprehensive Agreement was negotiated and signed by the Governments on November 22, 1978. While eutrophication remains a concern, the assessment and management of toxic substances in the Great Lakes System has become the primary focus of the 1978 Agreement. There was also growing recognition that water pollution could not be considered in isolation from what takes place on the land and in the air, and that a so-called "ecosystem approach" needed to be taken to ensure that all relevant considerations were taken into account. Because the Great Lakes Water Quality Agreement is a focus for activities taking place at the federal, state, provincial and municipal levels to address pollution problems in the Great Lakes-St. Lawrence River Basin, and because it remains a central feature of the Commission's work, we will return to the Agreement in greater detail below.

We have referred previously to the links between air, land and water pollution. As early as January 1949, the two Governments requested the Commission to enquire into and report on the extent and sources of air pollution in the vicinity of Detroit and Windsor, and to recommend the most practical remedial measures to deal with smoke from ships on the Detroit River. In May 1960, the Commission recommended objectives for emission of smoke from vessels plying the Detroit River. These were

approved by the Governments, and the Commission was asked to undertake surveillance of ships pending establishment of effective domestic laws, a job the Commission retained for a decade.

In September 1966, the two Governments asked the Commission if the air in the vicinity of Port Huron-Sarnia and Detroit-Windsor was being polluted on either side in quantities detrimental to public health, safety or the general welfare of citizens and/or property on the other side of the boundary. The Commission was also asked to identify sources and the extent of pollution as well as to recommend what remedial measures would be most practical and what would be their estimated cost. In response to this request, the Commission, in 1972, confirmed the existence and quantified the extent of the international air problem in the areas and recommended specific air quality objectives.

The 1966 Reference also requested the Commission to take note of air pollution problems in all other boundary areas which might come to its attention from any source, and, if considered appropriate, to draw such problems to the Governments' attention. In response to this request, the Commission created the International Air Quality Advisory Board, which continues to report on border-related air pollution problems.

In 1975, the Commission received another Reference to examine and to report upon the state of air quality in the Detroit-Windsor and Port Huron-Sarnia areas on a continuing basis, and to report on the measures undertaken to improve air quality with particular regard to the 1974 Michigan-Ontario Memorandum of Understanding. This Reference listed only particulate matter, sulphur oxides and odors as pollutants for which firm commitments had been made to achieve air quality compatible with the objectives proposed in the Commission's 1972 report under the 1966 Reference. In its annual reports from 1976 to 1983, the IJC noted that control strategies and technical works had been implemented to bring these pollutants under control, and by 1983, the Commission reported that the objectives had essentially been met. Consequently, in 1984, the Commission informed the Governments of the effective completion of the Reference, although the Governments were reminded of emerging problems which were apparently not part of the Reference. The Governments did not respond until 1988, when the Commission was asked to recommence its work under the 1975 Reference, and in particular to examine and report upon the actual and potential hazards to human health and the environment from airborne emissions in the Windsor-Detroit area. On March 31, 1992, the Commission released its report on this matter. The report highlights the need for governments to implement pollution prevention programs to eliminate or phase out the emission of air toxics in the region, and recommends that priority attention be focused on fifteen known carcinogens present in the ambient air.

In 1991, the Governments of Canada and the United States con-

cluded an Air Quality Agreement aimed at establishing a practical and effective instrument to address shared concerns regarding transboundary air pollution. This Agreement contains provisions for Air Quality Objectives, assessment, notification and mitigation, research and exchanges of information, as well as the establishment of a binational Air Quality Committee to, among other things, prepare biennial progress reports. From the IJC's perspective, it is important to note that Article IX of the Air Quality Agreement gives the Commission a Reference, pursuant to Article IX of the Boundary Waters Treaty, for the sole purpose of assisting the Parties in the implementation of the Agreement through, among other things:

- inviting comments, including those through public hearings as appropriate, on each progress report prepared by the Parties' Air Quality Committee;
- submitting to the Parties a synthesis of those views; and
- releasing the synthesis of views to the public after its submission to the Parties.

There is also provision in the Air Quality Agreement for the Parties to consider such other joint References to the Commission as they may deem appropriate for the effective implementation of that Agreement. This demonstrates the availability of the Commission to serve yet another and somewhat different role.

III. THE GREAT LAKES WATER QUALITY AGREEMENT

The revised 1978 Great Lakes Water Quality Agreement is primarily a set of obligations and undertakings between the Parties. However, it also gives the Commission a Reference under Article IX of the Boundary Waters Treaty to assist in the implementation of the Water Quality Agreement. The Reference asks the Commission to serve as an advisor, reviewing and at times facilitating progress in achieving the purpose and objectives of the agreement. The Reference calls for the Commission to develop its advice by relying on a Great Lakes Water Quality Board, which is to include representatives of the Parties and of each of the Great Lakes state and provincial governments, as well as a Science Advisory Board consisting of managers of Great Lakes research programs and experts on Great Lakes water quality issues. The Commission has relied on a variety of other sources, not least of which is the "general public".

The first sentence of the "Purpose" of the Agreement (Article II) sets the context for the specific undertakings set out elsewhere in the Agreement. That sentence reads as follows: "The purpose of the Parties is to restore and maintain the chemical, physical and biological integrity of the waters of the Great Lakes Basin Ecosystem" The programs and other measures undertaken pursuant to that Agreement should therefore be consistent with the achievement of this Purpose.

This Agreement provides for a wide range of programs and other

measures to be developed by the Parties in cooperation with state and provincial governments, extending from the development of the Great Lakes International Surveillance Plan (“GLISP”) to the promulgation of local regulations and the issuance of specific discharge permits. It also calls on the Commission to carry out extensive oversight activities.

More specifically, the Great Lakes Water Quality Agreement calls on the IJC to assist in its implementation and gives the Commission a Reference pursuant to Article IX of the Boundary Water Treaty to do a variety of things. These include:

- collating, analyzing and disseminating data and information supplied by the Parties and state and provincial governments relating to the quality of the boundary waters of the Great Lakes System and to pollution that enters the boundary waters from tributary waters and other sources;
- collecting, analyzing and disseminating data and information concerning the objectives and the operation and effectiveness of the programs and other measures established pursuant to the Agreement;
- tendering advice and recommendations to the Parties and to the state and provincial governments on problems of and matters related to the quality of the boundary waters of the Great Lakes System;
- providing assistance in the coordination of joint activities envisaged by the Agreement and ensuring liaison and coordination between institutions established under the Agreement (e.g., the Great Lakes Water Quality and Science Advisory Boards) and other institutions which may address concerns relevant to the Great Lakes Basin Ecosystem;
- providing assistance in and advice on matters related to research in the Great Lakes Basin Ecosystem; and
- reviewing and commenting, at specified stages, on the development and implementation of Remedial Action Plans and Lakewide Management Plans.

The Commission does not have the resources to undertake all the responsibilities in all areas of Great Lakes Water Quality work at the same time, and has recognized the necessity of establishing priorities. Last year, the Commission introduced a policy of setting these priorities every two years so as to coincide with the Commission’s biennial reporting cycle. Under the Great Lakes Water Quality Agreement, the Commission must make a full report to the Parties and to the state and provincial governments at least every two years on progress that has been made toward achieving the objectives of the Agreement. The report must include assessment of and advice on the programs and measures being undertaken. Prior to issuing its biennial reports and setting its priorities, the Commission seeks the views of members of the public and

experts at a Great Lakes Water Quality meeting, the latest of which was held in Traverse City, Michigan, in October 1991.

IV. THE FUTURE

Following its most recent biennial meeting, the Commission issued a list of priorities for its work under the Great Lakes Water Quality Agreement during the next biennial cycle (1991-1993). These priorities were, as mentioned previously, established following consultation with the Commission's advisory bodies, including the Great Lakes Science Advisory and Water Quality Boards and the Council of Great Lakes Research Managers, and following input from the public and experts at the Traverse City meeting.

The first priority identified by the Commission was the development of a strategy for virtual elimination of persistent toxic substances. The Great Lakes Water Quality Agreement states that the Parties' goal of restoring and maintaining the integrity of the Great Lakes Basin Ecosystem is to be implemented by following a strategy of virtual elimination of persistent toxic substances and by adopting the philosophy of zero discharge or nil human input for them. The Commission is seeking to develop advice to the Parties, which will assist them in this task.

The Commission originally identified virtual elimination and zero discharge as a priority in 1990 and held four Roundtables (in Hanover, New Hampshire; Thunder Bay, Ontario; Washington, D.C.; and Ottawa), on the issue prior to the Traverse City meeting. The Roundtable held in Washington in April 1991 tried to obtain a variety of views about the role of legislation and regulation in the achievement of zero discharge. Participants came from both countries and included lawyers and regulators from government, private practice and non-governmental organizations.

The Roundtable began with the working assumption that concepts such as "assimilative capacity" and the reduction of persistent toxic chemicals to "acceptable levels" were inappropriate, given both the persistent and toxic nature of these substances as well as the provisions in the Great Lakes Water Quality Agreement calling for virtual elimination of persistent toxics and a philosophy of zero discharge. In addition, it was generally accepted by Roundtable participants that although legal mechanisms may exist for banning substances in Canada and in the United States, no effective total bans of toxics have occurred in either country. The term "total ban" was used to mean a complete prohibition on the production, import, export, sale and use of a substance. With these premises in mind, the Roundtable considered how legislation and regulation could best contribute to achievement of the goal of virtual elimination.

A number of participants said that the type and effectiveness of environmental laws, regulations and policies in place at any given time will

depend on the degree of social consensus that exists. It was suggested that, in the absence of a clear social consensus about the threshold for action, politicians often leave it to bureaucrats to determine through regulations which substances should be controlled or prohibited. It was further suggested that in such situations, users of persistent toxic substances are often able to exert pressures, both political and legal, to avoid the enactment of bans.

Because of the difficulty of establishing in a court of law that a particular substance poses an unreasonable risk, it was suggested by some that legislation should be formulated in a way that does not require determination of risk by courts. Laws should simply establish a list of substances which legislators have determined should be subject to a ban or phase-out, and for which there is then no further need to establish risk. This list should be enshrined in legislation which states precisely what is to be done with respect to each specified substance within a particular phase-out time frame. However, it was also noted that when first establishing such a list of substances, it would of course be necessary to decide where the burden of proof lies in terms of risk. In other words, is it on the loss of economic benefits or on the danger to health? Several said that, in theory, risk is usually cast in terms of health, but is, in reality, often set in terms of economics. Emphasis was placed on the need to decide whether to be conservative on the side of health or the economy. It was further noted that because laws reflect a range of social values and costs, it is necessary to look not only at substances, but also at the related social values, and to allow time (perhaps using interim measures) for those social values to work themselves out in the development of alternatives. Otherwise, complete bans are not entirely realistic. If there are no alternatives, governments will not be inclined to ban a substance. Throughout the Roundtable, the term "ban" was used to include the phasing out of substances, and many participants expressed strong support for a "phasing-out" or "sunsetting" approach which would require a total ban by a specified date.

The strongest message to emerge from the Washington Roundtable was that new legislative and regulatory developments have to be achieved on the basis of consensus derived from consultative processes which involve a broad spectrum of public participation, in which industry as well as the environmental community are involved. The Roundtable also emphasized the roles of the media and education in building a consensus, which is essential to the passage of legislation. One example of successful consensus building was provided by the experience of the Coalition of Northeast Governors, who convened meetings of industrialists, environmentalists and officials to look at reductions in packaging and to draft model state legislation.

Some participants noted that focusing exclusively on substances which come out the ends of pipes limits the issue to counting molecules and introduces the problem of detectability. It was suggested that atten-

tion should instead be directed toward changing processes, materials and end products so as to eliminate the possibility of any discharge at all. This approach to pollution prevention requires, among other things, consideration of why products are being produced as well as the processes and materials used. It was also noted that even with zero discharge to water and air, there may still be materials at a site which could escape, and there is, therefore, a need to address the issue at its source, not just at the point of discharge. Furthermore, it was recognized that measures need to be of such range that prohibitions on emissions from pipes will not lead to greater emissions from smokestacks.

In view of the implications of national and multinational markets as well as the scope of air and watersheds, Roundtable participants concluded that effective action will have to be taken on at least a binational and preferably a global scale. However, the difficulty of obtaining common action on such a scale was also recognized, and several participants stressed that action is needed now in the Great Lakes Region and cannot wait for a global consensus, which cannot be expected immediately. Some asserted that consensus can be more easily obtained at the regional level and that regional legislation and action can then serve as a catalyst for subsequent action at the national, international or global level. The Great Lakes, it was said, is a particularly suitable starting place, because it has an institutional framework in terms of the Great Lakes Water Quality Agreement as well as other arrangements and networks which can provide a basis for action. It was also noted that it is unlikely that any region, including the Great Lakes states and provinces, will agree to put itself at a competitive disadvantage to other regions for long, and actions taken in the Great Lakes-St. Lawrence River Basin will, therefore, have to be taken bearing in mind the national and global contexts.

At the conclusion of the Roundtable, it was suggested that a strategy for achieving zero discharge of persistent toxic substances should include the following elements: (1) development and enactment of a model law to be adopted in all jurisdictions; (2) a phase-out of designated substances by specified dates; (3) a prohibition of a few substances for which the social consensus, currently exists; and (4) embodiment of the strategy in a treaty or international agreement.

The Virtual Elimination Task Force, which has been established to address the Commission's virtual elimination priority, will be looking again at the question of legislative and regulatory mechanisms that could be used to achieve the goal of virtual elimination. The Task Force will, among other things, also be addressing such matters as: (1) criteria for chemical selection; (2) investigation of sources; (3) remediation of contaminated sites; and (4) evaluation of virtual elimination tools, including preventive and remedial technologies and economic incentives, such as taxes, effluent fees, product charges and tradeable emissions.

Work on virtual elimination is, of course, not the IJC's only priority under the Great Lakes Water Quality Agreement. The Commission is

also placing emphasis on such matters as human and ecosystem health; the review of remedial action plans, which are to provide a systematic and comprehensive ecosystem approach to restoring and protecting beneficial uses in designated areas of concern; state of the lakes reporting; Great Lakes environmental education and community awareness; and groundwater contamination. The identification of emerging issues is another major priority.

The 1978 Great Lakes Water Quality Agreement adopts an ecosystem approach, which recognizes the need to take into account the full range of linkages and connections between and among the various aspects of life on our planet. This well-concerned approach will, we believe, continue to lead the IJC in the future, among other things, into considering water quality and quantity as parts of the same question, and air and water as elements of the same issue. It will also support efforts to develop better information, and encourage the development of knowledge required to understand better relationships, factors and interests so as to equip communities, municipalities, provinces, states and countries with an ever improving basis for dealing with the difficult transboundary issues we are now facing.

In the Great Lakes-St. Lawrence River Basin, the IJC provides governments and communities at all levels with an inexpensive yet effective and responsive mechanism for regulating certain water uses and for obtaining both long-range and practical advice about a variety of current environmental issues. Of at least equal importance, it offers a forum in which the citizens of both countries can come together to share their concerns, learn together and, when the IJC process is functioning at its best, produce a consensus on measures and approaches that can or should be taken.

In regulatory terms, the IJC has and continues to offer an efficient mechanism not only for allocating waters for use between the two countries and removing potentially serious issues from the binational agenda, but it also offers a forum for efficient binational regulation of outflows from Lakes Superior and Ontario in a way that can take account of the sometimes competing interests concerned. Like any system or mechanism, it has difficulty coping with extremes. However, for the most part, the regulatory regime created in the Boundary Waters Treaty has shown itself to be amazingly flexible and capable of adjusting to the demands created by changes in circumstances and knowledge which have occurred over the past eighty years.

The IJC can also play another and equally significant role in providing a special type of advice on issues along the common frontier, especially those involving water and environmental matters. The value of the Commission's advice, as indicated above, lies in the way in which it is developed. First and foremost, it is binational advice formulated by eminent statesmen appointed at the most senior levels of the Canadian and United States Governments. Secondly, the advice is developed relying

on the best scientific and socio-economic expertise available from the government and private sectors as well as from affected or concerned interest groups. Thirdly, it is formulated in a less adversarial atmosphere than would exist in binational discussions.

Despite all these advantages, however, there are of course limits to what the Commission process can accomplish. The IJC is a relatively small institution which cannot address an infinite number of complex issues at the same time. Selection of priorities and the formulation of manageable questions is essential. It must be recognized that conflicting interests and uncertainties can at times make it difficult, if not impossible, to arrive at solutions from above or from afar. In these cases, it may be necessary to involve those most directly affected and allow time for an acceptable consensus to emerge.

While recognizing the pitfalls and limitations of the International Joint Commission process, the Commission has in the past offered, and we believe will continue in the future to offer, a means for governments to avoid or resolve controversies, whether by deciding on application for water uses or, where appropriate, by providing a mechanism that can help generate and later provide a voice for new and creative solutions that emerge from involving those concerned in addressing the issues confronting our societies.